

Cranwood

**Construction
Environmental
Management Plan**

April 2023

DOCUMENT CONTROL SHEET

Report Ref.	CBE2050/C/CEMP/202304-EC
Rev.	C
Issue Purpose	Planning Condition 19
Assessor	Edward Coate
Signature	
Approved By	Ryan Thrower
Date of Issue	18 th October 2022
Date of Revision	24 th April 2023

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1. INTRODUCTION

NRG Consulting have been commissioned by Formation Design & Build (otherwise referred to as Formation) to undertake a Construction Environmental Management Plan (CEMP / CMP) likewise referred to as a Construction Method Statement (DMS). This document is for the proposed development located at Cranwood, 100 Woodside Avenue, N10.

The development is described as:

“Demolition of existing building and redevelopment of site to provide 41 new homes (Use Class C3) within 3 buildings ranging from 3 to 6 storeys in height, with associated vehicular access from Woodside Avenue, wheelchair parking, landscaping, refuse/recycling, and cycle storage facilities. New stepped access to Parkland Walk from Woodside Avenue.”

This report is written in three key parts, being:

- 1) Construction and Environmental Management Plan;
- 2) Construction Logistics Plan;
- 3) Air Quality and dust Management Plan.

For the purpose of this report in relation to the condition below, this concerns Construction only.

19) Demolition works shall not commence within the development until:

(a) a Demolition Environmental Management Plan (DEMP) has been submitted to and approved in writing by the Local Planning Authority. Development shall not commence (other than demolition)

Until:

(b) a Construction Environmental Management Plan (CEMP) has been submitted to and approved in writing by the Local Planning Authority. The DEMP/CEMP shall include a Construction Logistics Plan (CLP), Air Quality and Dust Management Plan (AQDMP) and details of how demolition/construction works are to be undertaken, as appropriate.

These documents shall also include:

- (i) A construction method statement which identifies the stages and details how works will be undertaken;*
- (ii) Details of working hours, which unless otherwise agreed with the Local Planning Authority shall be limited to 08.00 to 18.00 Monday to Friday and 08.00 to 13.00 on Saturdays;*
- (iii) Details of plant and machinery to be used during demolition/construction works;*
- (iv) Details of an Unexploded Ordnance Survey;*
- (v) Details of the waste management strategy;*
- (vi) Details of community engagement arrangements;*
- (vii) Details of any acoustic hoarding;*
- (viii) A temporary drainage strategy and performance specification to control surface water runoff and Pollution Prevention Plan (in accordance with Environment Agency guidance);*
- (ix) Details of external lighting; and,*
- (x) Details of any other standard environmental management and control measures to be implemented.*

The CLP will be in accordance with Transport for London's Construction Logistics Plan Guidance (July 2017) and shall provide details on:

- (i) Monitoring and joint working arrangements, where appropriate;
- (ii) Site access and car parking arrangements;
- (iii) Delivery booking systems;
- (iv) Agreed routes to/from the Plot;
- (v) Timing of deliveries to and removals from the Plot (to avoid peak times, as agreed with Highways Authority, 07.00 to 9.00 and 16.00 to 18.00, where possible);
- (vi) Travel plans for staff/personnel involved in demolition/construction works to detail the measures to encourage sustainable travel to the Plot during the demolition/construction phase; and
- (vii) Joint arrangements with neighbouring developers for staff parking, Lorry Parking and consolidation of facilities such as concrete batching.

The AQDMP will be in accordance with the Greater London Authority SPG Dust and Emissions Control (2014) and shall include:

- (i) Mitigation measures to manage and minimise demolition/construction dust emissions during works;
- (ii) Details confirming the Plot has been registered at <http://nrmm.london>;
- (iii) Evidence of Non-Road Mobile Machinery (NRMM) and plant (of net power between 37kW and 560 kW) registration shall be available on site in the event of Local Authority Inspection;
- (iv) An inventory of NRMM currently on site and continually updated as necessary (machinery should be regularly serviced, and service logs kept on site, which includes proof of emission limits for equipment for inspection, all plant and machinery to be used during the demolition and construction phases of the development shall meet Stage IIIA of EU Directive 97/68/ EC for both NOx and PM emissions);
- (v) A Dust Risk Assessment for the works; and
- (vi) Lorry Parking, in joint arrangement where appropriate.

The development shall be carried out in accordance with the approved details. Additionally, the site or Contractor Company must be registered with the Considerate Constructors Scheme. Proof of registration must be sent to the Local Planning Authority prior to any works being carried out.

The development shall be carried out in accordance with the approved details.

Reason: To protect local air quality and to provide the framework for understanding and managing construction vehicle activity into and out of the proposed development, encouraging modal shift and reducing overall vehicle numbers. To give the Local Planning Authority and TfL an overview of the expected logistics activity during the construction programme. To protect of the amenity of neighbour properties and to maintain traffic safety. In accordance with Policy DM21 of the Development Management DPD 2017.

Haringey Council have reviewed the initial issue of the CEMP and provided comments (see below). The sections relevant to these comments are also as below. Some comments are also carried over from the associated DEMP:

Transportation Comment	Section / Response
With respect to the arrival and departures of construction related vehicles, there is reference to avoidance of the peak hours (0700 – 0900 and 1600 – 1800) on page 6. It is however very strongly suggested that the period within which vehicles arrivals and departures are restricted to should be changed to between 0930 and 1500, as movements by pedestrians, parents and the like with the adjacent school are likely to happen beyond 0900 and before 1600. As commented in this response with respect to the DEMP, it is very strongly suggested that the period within which vehicles arrivals and departures are restricted to should be changed to between 0930 and 1500, as movements by pedestrians, parents and the like with the adjacent school are likely to happen beyond 0900 and before 1600.	Section 2.3.
In addition to the above, there should be a detailed commentary on how vehicles will be overseen and managed when making manoeuvres into and out of the site to and from the public highway, to ensure a safe approach is taken. This commentary should detail how many accredited and qualified banksmen are utilised and describe how movements will be managed for the different sized vehicles, including management of both vehicles and pedestrians/cyclists using the public highway.	Section 7.0. Figures 7.1- 7.2.
There appears to be no reference to acoustic hoarding. The applicant/contractor will need to arrange and obtain hoarding licences from the highway authority for the site perimeter hoarding	Section 2.09.
Whilst this is not a transportation consideration, there is a drainage survey included in the submission, and reference to all run off will go to existing mains. It is assumed that the contractor/applicant would need to make arrangements with the relevant drainage authority.	Section 2.10.
Again, not a transportation issue but there are details of the lighting arrangements proposed for this part of the construction works.	Section 3.0.
The CEMP logistics plan shows the new crossover requiring to be constructed for construction access. This needs clarification. The demolition phase logistics drawing shows use of the existing access. If the intention is to form the new/relocated access for the construction period (assuming the existing access is retained for demolition access), the applicant will need to agree arrangements with and obtain the consent/approval of the Highway Authority. Construction of a new crossover and reinstatement of the existing crossover will need to be covered by the appropriate agreement under the Highways Act.	Section 2.1.
It isn't clear on the logistics drawing where pedestrian and cycle access will be into the site. For the Demolition phase it is shown indicatively next to the existing crossover.	Figure 6.2 and Section 7.0.

It is also noted that the proposed hoarding line to north side of site appears to be partly over the footway, thus reducing available footway width. Agreement and consent will be required with/from the highway Authority in relation to this and given the location adjacent to St. James Primary school, the applicant will need to request this and provide rationale for the footway reduction. If the Highway Authority is amenable to a reduction a minimum footway width will be required.	Section 2.9.
Swept path plots are included for an articulated truck, showing inbound, manoeuvring and outbound movements. There is only a very minor reference to the use of banksmen to oversee vehicle movements into and out of the site. There should be a detailed commentary on how vehicles will be overseen and managed when making manoeuvres into and out of the site to and from the public highway, to ensure a safe approach is taken. This commentary should detail how many accredited and qualified banksmen are utilised and describe how movements will be managed for the different sized vehicles, including management of both vehicles and pedestrians/cyclists using the public highway.	Section 7.0.
Finally with respect to access, the arrangements for the wheel wash should be clarified and detailed. There is reference on the site logistics plan but no detail of the location or space requirement and how it will be accommodated at the access.	Section 4.0.
There is reference to no on site parking being available for operatives/staff working at the site. The logistics plan details that parking on local roads by workforce and staff will be prohibited. Most of the streets in the locality are not covered by a CPZ so this cannot be enforced or implemented.	Section 7.11.
There is no reference to the set up/use of a travel plan nor the measures to be used to encourage sustainable travel by workers or visitors to the construction site.	Section 7.3.
There should be details provided of the numbers of workers attending site during the build, and the measures that will be employed to promote walking, cycling and public transport. This will need to include details of sufficient cycle parking and associated showers/lockers and the like to encourage this.	Section 7.4.

Furthermore, NRMM have confirmed receipt of registration, and this registration can also be found in the Appendices of this report.

This CEMP has been updated as of the 24th April with respect to comments made by Highways on access arrangements and Haringey Council on drainage arrangements respectively.

2. SITE DETAILS & INFORMATION

2.1 The Site

The existing hardstanding and parking area will be constructed over, with the existing entrance removed, and a new entrance created, slightly east, of the original entrance. Furthermore, works will include:

- Installation of paving, lighting, and landscaping work
- Addition of on street parking spaces
- Substructure and superstructure construction
- Cycle storage facilities
- Public gardens and landscaping areas
- New stepped access to Parkland Walk from Woodside Avenue
- Relocation of existing bins into enclosed refuse stores

The intention with the existing and proposed access points for the work is the use the existing access for the demolition works. The new access point will then be used for the construction works. The new access for the development will be arranged via future application (to be proposed and agreed with highways) to create a crossover through the local authority and will not commence until it is agreed.

The demolition programme is below:

- Site setup and hoarding – 2 weeks
- Asbestos survey report – 1 week and 3 days
- Asbestos removal notice – 1 week
- Asbestos removal – 1 week and 3 days
- Disconnect all live services – 3 weeks
- Demolition 4 -weeks
- Crush demolition waste – 2 days
- Create new access onto site – 3 days

And as such, the new access will be created prior to construction taking place at the end of the demolition phase. This new crossover/access will be done under a future separate highways application which will be discussed with Highways in due course.

As such, the existing access will be used for the demolition phase of the project, this can be seen via figures 6.2 and 7.1 through to 7.2. The existing access that will not be used for construction can be seen on Figure 6.2.

2.2 Existing Site Description

The current site is located at the junction of Muswell Hill Road and Woodside Avenue and is adjacent to St James C of E Primary school. The site is a brick façade care home, and a singular structure, ranging from 6-8m in height, along with adjacent parking and a hardstanding area. Furthermore, the site also services 8 properties behind the site (to the south).

2.3 Working Hours

Haringey permitted construction noise and working hours are as below:

- Monday to Friday 8:00am – 6:00pm;
- Saturday 8:00am – 1:00pm;
- No work on Sundays or Bank Holidays.

Due to the presence of the nearby school, timing of deliveries to and removals from the Plot (to avoid peak times), as agreed with Highways Authority, will be further restricted to **avoid** the times below:

Activities such as waste collection, spoil removal, delivery of materials and concrete delivery will be restricted to the following hours:

- 9.30am to 3pm Monday to Friday
- 8.00am to 1.00pm Saturday

Any alterations to these working hours, or requests to work outside of these hours above, will be made to and agreed upon by appropriate officials at Haringey Council prior to any of these works taking place.

2.4 Plant and Machinery

Various plant and machinery will be utilised on site throughout construction, these will be used for the sole purpose of construction can be seen below via an indicative list:

- Lrigid Vehicles (10m in length – deliveries)
- Articulated Lorries
- Tower Crane
- Mobile Crane

The Articulated Lorry is the vehicle used for the construction Swept Path Analysis (SPA) present in Section 7.

2.5 Construction Method and Protocol

Substructure

The beginning substructure works will consider the topography of the site, specifically in relation to the retaining of the Woodside Avenue with an approximate excavation of 5m below the existing pavement. Currently a Contig Pile wall along this elevation is proposed. This is the safest form of retention, and this method is included in the piling duration. As such excavation will commence as part of the substructure phase.

- Prepare Piling Matt – 3 weeks
- UXO Survey – 2 weeks
- Pile Crane Base – 2 days
- Piling (High & Low Level) – 5 weeks
- Attend Piling Rig – 5 weeks
- Set Up Core – 17 weeks (including lift base, jump core)
- Buildings A Wing 1 – 7 weeks
- Buildings A Wing 2 – 7 weeks

Three distinct buildings will be present on site, and each is represented independently on the construction programme. Building A will have the longest duration of works and building 2 and 3 will occur concurrently. On completion of the piling activity the substructure elements will begin. This will involve excavation and forming the ground beams, all drainage and rising walls and dwarf walls from the foundations to support the ground floor slab. Working through building A initially.

Each wing of the building is treated separately to allow works to progress and to create a sequence of events with which the site can progress.

Post-Substructure

Construction will follow the completion of substructure listed below:

- Superstructure – which includes the construction of the building fabric
- Externals – which include the brickworks installation of windows, architectural metal work etc
- Internals – sequence includes the drylining phases, M&E works and all the trades to decoration
- External Finishes – these works follow on from the completion and removal of the scaffolding where works can be progressed around the building and complete the hardstandings

Superstructure & Externals Work

The superstructure activities will commence with rising elements. Building A is predominantly structural columns with reinforced concrete slabs and the roof structure are a steel frame. The external envelope consists of masonry stone. Scaffolding will be constructed initially; masonry works will then progress to allow the flooring elements to be inserted. Windows and doors will be installed, and works will repeat on all floors until the structure is completed in full.

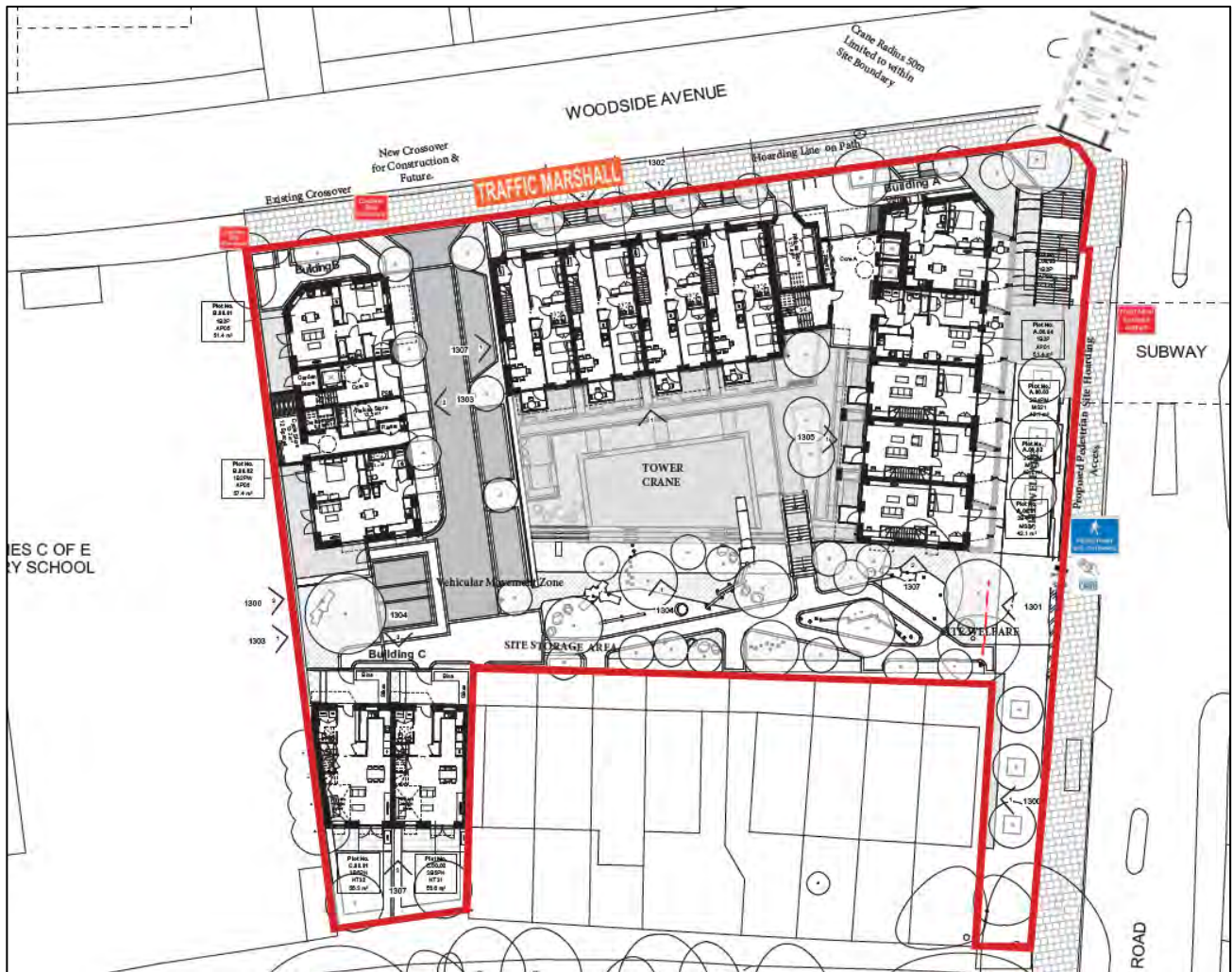


Figure 2.1: Tower Crane Location

Internals

Once each building is sufficiently progressed and wind and watertight the internal works will commence. This will include H/L ventilation, drylining, M&E fixings, ceiling works, tiling, kitchen installations, decorating, carpet & vinyl install, and sparkle clean.

Handover

On successful completion and snagging, the handover procedure will commence, which will include an adequate countdown to handover, allowances for client visits/tours and post-handover resident induction process.

2.6 Unexploded Ordnance Survey

MACC International LTD have undertaken an Unexploded Ordnance Survey (UXO) for Formation. This UXO states:

“The future intention for the land is the construction of new facilities for the school; it has been assumed that Geoenvironmental and Geotechnical investigations will be undertaken prior to general excavations including foundation construction which may include piling.”

It continues to state:

“The desk study has identified a credible UXO threat to intrusive works being undertaken on the site. When viewed from likelihood versus consequence standpoint, the risk levels for the most part are considered to be significant. Consequently, it is considered appropriate to recommend a suitable degree of UXO mitigation to permit the work to proceed in the safest “acceptable” manner.”

The UXO then states the following mitigation recommendations.

General Mitigation Requirements

It is recommended that the following mitigation measures are carried out prior to any work taking place.

Risk Communication & Safety Planning: Stakeholders should be made aware that the risk of encounter is considered to be significant and the possible impact it may have on the project. Additionally, a UXO site safety and emergency procedures plan should be produced.

Safety Training: UXO Safety Induction Training should be provided to everyone working or visiting the site. The training should be commensurate with the individual's responsibilities and duties on site. The training should be provided by a competent individual and delivered as separate module of the Site Safety Induction Course.

Drilling, Pitting & Excavation Mitigation

UXO Safety supervision and monitoring; this should be conducted by a qualified EOD Engineer using a specialist magnetometer to clear the ground ahead of the excavator bucket or drilling bit.

Piling Mitigation

Pre-testing and clearance certification of the pile positions from the surface to the pile depth (3-4m) using a specialist magnetometer system.

2.7 Waste Management Strategy

The Project team will manage the waste on site and record the waste details. Waste Reports will be provided by the Waste Carriers on a monthly basis which will include:

- European Waste Code (EWC)
- Waste description
- Weight in tonnes
- Percentage of waste recycled

The details of waste carrier hired to transport non-hazardous waste and hazardous waste will be included and presented in this document once known. Their associated Waste Management License number and/or Pollution Prevention and Control Permit Number will also be presented here.

Details of the project waste management performance will be reported to the client at project meetings, where required. The SWMP will include targets for re-use, recycling and disposal of waste expressed as percentage. The client waste monthly report will include as a minimum:

- Comparison of waste management targets and actual performance.
- Analysis of waste produced on site per month.

The Project Manager is fully responsible for ensuring compliance with the current waste management legislation. All documents are to be retained for a minimum of 3 years.

In order to comply with current legislation, the Project Manager will:

- Identify the types and quantities of waste that the project will produce.
- Ensure that the recording of waste is updated as necessary, as a minimum monthly, to reference all waste that has been produced at site and removed from site.
- Nominate a member of the team on site as a “waste champion”, e.g. site manager, site supervisor.
- Ensure that the waste management strategy is communicated to everyone working on site.
- Ensure that waste management companies responsible for removing the waste provide copies of their carrier licences and environmental permits.
- Ensure that copies of all relevant hazardous waste consignments notes, and duty of care waste transfer notes are readily available on site for reference and review.

The Waste Hierarchy

Formation recognises that sustainable waste management starts with resource efficiency, using the raw goods purchased wisely. Their waste management incorporates *The Waste Hierarchy* and prioritises all such measures to:

- Minimise the generation of waste and target Zero Waste to Landfill.
- Increase the use of recycled and recovered materials.
- Reuse materials on site, wherever possible.
- Segregate non-hazardous waste for recycling, wherever possible.
- Segregate hazardous waste.
- Ensure the waste collected on site is efficiently managed to enable recycling, recovery or the best disposal option.

In order to manage waste effectively on-site, Formation will also:

- Implement just in time delivery
- Ensure that materials delivered to site are not damaged or unusable.
- Reduce the amount of packaging, wherever possible.
- Ensure that waste is handled and stored correctly.

Segregation on site

Where possible, the Project team will segregate non-hazardous waste material into separate waste streams. When segregating waste, the Project Team will

- Use appropriate containers.
- Label containers clearly using appropriate signage.
- Allocate designated areas for container in suitable locations.
- Empty containers regularly to prevent lack of space and possible contamination.
- Monitor waste containers to ensure that contamination of segregated waste does not occur.
- Train site personnel via toolbox talks and the site induction programme.
- Enforce the segregation scheme using appropriate personnel, waste champion.

2.8 Community Engagement Arrangements

Prior to any major works on site, Formation will undertake a letter drop to nearby residents. This letter drop will contain all construction and works information. Furthermore, this will include Formation details (contact, phone number, email, titles, and names), and any other information pertaining to the relevant scope of the works including hours of work.

2.9 Hoarding

The following will be completed prior to the commencement of works on site:

- Obtain appropriate hoarding licences.
- Site will be setup and hoarding erected.
- All relevant services will be disconnected.
- Site to arrange mains power connection in advance of site works with no diesel generator use on site
- Materials will be stockpiled for processing and removed from site.

Hoarding will be constructed in accordance with the terms of the Temporary Structure License to be obtained by Formation. Hoarding will be erected and dismantled in a safe manner in conjunction with the current legislation (Section 172 of the Highways Act 1980 and Chapter 8 of the Traffic Signs Manual under the New Roads and Street Works Act 1991) and Health and Safety Executive guidelines.

The hoarding used on site will be acoustic hoarding, the contractor will ensure that the above licenses are arranged with the highway authority.

All site boundaries will be totally enclosed by clean, safe, and well-maintained hoardings. These hoardings will be designed to allow the displaying of relevant signage and notice boards to ensure good communication with the neighbouring residents and local businesses. 110v bulkhead lights will be installed as part of the hoardings to ensure footpaths, signage and notice boards are well lit. A 2.4m high solid painted timber hoarding and gates will be erected around the site as appropriate. The hoardings will, on completion of the works to an appropriate degree, be dismantled.

A Site Safety Notice Board will be located in a prominent position and will be regularly updated. Hoarding and H&S notice boards will be clearly erected with the relevant information displayed.

The proposed hoarding line to the north of the site along Woodside Avenue will not be over the footway, and it will not impact footway widths. This will not restrict the width due to the adjacent school and associated concerns with this. All future adaptations of the hoarding line will be agreed with the highway authority. This hoarding will only be installed once in agreement, and given consent, from the highway authority. Once this consent is acquired a minimum footway width will be introduced.

2.10 Drainage on Site

There is limited water present on site. Furthermore, there is limited water expected to be on site, or as a result from demolition operations. Any excess water will drain to mains. The principal contractor will make arrangements with the relative drainage authority on this basis.

Wheel wash facilities will be used on site and can be seen on Figure 6.2. Formation will ensure that there will be no run off of arisings/water back to Highway drainage.

With respect to the drainage assets to be retained/protected during the demolition and construction works, protection and abandoning of existing assets is being addressed by a separate Thames Water application which is currently in progress as of the issue of this report. The drainage layouts for the lower ground and below ground levels can be found in the appendices of this report. These layouts display the retained and protected drainage assets.

The site is underlain by the London Clay formation and as such the requirement for significant dewatering is unlikely. Because of these ground conditions an event of a fuel/hydraulic fluid spillage poses a minimal risk of vertical or lateral migration of contaminants. As the London Clay formation is an unproductive aquifer the risks to controlled ground waters are unlikely to be significant. This is, however, subject to standard controls (GPP 22 – Dealing with Spills – although not formal English guidance, it is used as best practice from Scotland, Wales, and Northern Ireland) seen below:

- Follow refuelling protocol at all times
- Use suitable containers to store fuel/oil and store these away from sensitive receptors
- Create a dedicated area for any solvents, chemicals in accordance with COSHH data sheets
- Bulk fuel storage should be integrally bunded or kept within a bunded area
- Use drip trays/plant nappies for plant/machinery
- Implement and follow procedures for storage, use, delivery, inspection and monitoring of pollution substances.

As noted above, the London Clays geology of the site will mean there is unlikely to be any significant requirement for groundwater control. Drainage inlets and points of connection into the public sewer through the site will be identified and protection measures will be put in place to ensure no uncontrolled or untreated discharges will enter the public sewer system. These inlets have been identified based on the CCTV survey. These will be sealed off to avoid uncontrolled entry.

Thames Water will be contacted to arrange the trade effluent license, and to agree on the treatment system required (if any). This will include agreeing to determinants such as Ph, TSS, PAH.

Formation will be conscious of drainage layouts with respect to Parkland Walk to ensure no run-off in this area will occur. Runoff into Parkland Walk will be avoided by having temporary levels fall away from this area and control any excess water with pumping. Thames Water will be consulted on works around their sewer. Currently this is not foreseen as an issue as the sewer is deep.

3. EXTERNAL LIGHTING

Lighting

Lighting will be sited to minimise visual intrusion and light spillage / pollution at nearby residential units, in so far as is consistent with the site safety requirements.

Formation will comply with the Institute of Lighting Engineers document 'Guidance notes on reduction of light pollution' (2000) to a degree that is practicable.

Adequate security shall be implemented to prevent unauthorised entry or exit from the site. Site gates will be closed and locked when there is no site activity, whilst accesses will be manned during work periods.

Hoarding Lighting

Lighting will be present on this hoarding line. Lighting will be spaced out along the hoarding line to ensure that it is visible to nearby pedestrians, cyclists, and any other nearby residents

Outdoor space (hoarding) (Light scene 1)

Summary

Results

	Symbol	Calculated	Target	Check	Index
Working plane	$E_{\text{perpendicular}}$	5.01 lx	≥ 5.00 lx	✓	WP2
	g_1	0.00	-	-	WP2
Consumption values	Consumption	2800 kWh/a	max. 22700 kWh/a	✓	
Room	Lighting power density	0.50 W/m ²	-	-	
		9.92 W/m ² /100 lx	-	-	

Utilisation profile: General circulation areas at outdoor workplaces, Walkways exclusively for pedestrians

Luminaire list

pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
28	SG	70219864 15445	Tanto 1100 White Twilight 430lm 3000K Ra>80 On/Off	11.5 W	430 lm	37.4 lm/W

Figure 3.1: External Lighting Specification

4. ENVIRONMENTAL MANAGEMENT PRACTICES & CONTROL MEASURES

Formation will undertake the following monitoring activities to ensure the environmental issues and related standards noted above are followed on site:

- Carry out monitoring in order to demonstrate compliance with occupational exposure standards for their employees as detailed in the COSHH Regulations 2002, as amended. Copies of the monitoring results will be made available to the LBH the Health and Safety Executive (HSE) upon request.
- Formation will undertake Asbestos R&D and UXO surveys before works can take place.
- Formation will establish the site perimeter and prepare the grubbing out of all existing hardstanding. An R&D asbestos survey will be undertaken by Formation prior to any works commencing.
- Time for the above works (including if further works will be required) have been allotted into the existing construction programme.

Dust

- Carry out visual dust monitoring daily at pre-determined air quality monitoring locations, to manage the generation of dust. If elevated levels of dust are measured during groundwork and construction periods of the development, site activity will be halted, and any issue resolved or sufficiently mitigated
- A committed wheel washing area will be established near the site entrance and can be seen on Figure 6.2.

This wheel washing system will be the Glanaco 2-Metre Wheelwash System (<https://www.glanaco.com/2-metre-wheel-washer/>). This unit is compact and will cater for the volume of vehicles egressing from the site. The unit recycles water and is commonly used by construction companies within the UK.

Vibration

- Where construction activities are considered to give rise to significant levels of vibration, monitoring will be carried out by a suitable qualified individual appointed by the principal contractor. Vibration measurement will be conducted in accordance with Clause 9 of BS5228: 2009 Part 2, to a schedule to be agreed with the LBH.

Water

- Control limits will be set in accordance with discharge consents to foul sewers or controlled waters. Contractors discharging liquids will ensure that appropriate monitoring is undertaken to demonstrate compliance with all applicable consent limits.

Site Inspection

- Site manager will undertake routine monitoring of storage and working areas to ensure safety measures are in place and the correct safety procedures are maintained.
- The provisions and requirements will be subject to regular inspection and recording by the site manager in a manner and at a frequency to be agreed with the LBH and/or the Contractor.

Furthermore, Formation's Environmental Policy is read as below.

"Formation Design & Build Ltd recognizes that their operational activities have environmental implications and as such, respects our duty to conduct operational activities in the best possible environmental manner. Our goal is to protect the environment during a project and to provide a building that will keep protecting it long after the project is complete.

Formation Design & Build Ltd applies the waste management hierarchy when producing waste, making all such arrangements on our premises to:

- Minimise the generation of waste and achieve Zero Waste to Landfill.*
- Increasing the use of recycled and recovered materials.*
- Promote reusing, recycling, and recovering of materials.*
- Ensure waste carriers selected manage waste correctly to enable recovery or disposal without harming the environment.*

Our management system is maintained in accordance with the requirements of ISO 14001.

Our commitment is to:

- Prevent environmental pollution.*
- Comply with applicable legal and other requirements that relate to our business.*
- Identify opportunities to improve our environmental performance and guarantee continuous improvement.*
- Set a framework for establishing and monitoring our environmental objectives.*
- Assess the environmental impacts of our operational activities.*
- Select construction methods to minimise the use of natural resources and promote the procurement of sustainable materials.*
- Work with clients, suppliers, subcontractors, regulators, professional bodies and the community at large to raise the environmental standards of the projects in which we play a part.*
- Communicate and display this policy to all members of staff and our stakeholders.*
- Periodically review our policies, processes and working practices to determine their suitability and effectiveness.*

The implementation and monitoring of this policy, together with raising general awareness to our employees is the responsibility of Company Directors and management. The success of this policy rests with the commitment of all employees to ensure our environmental management procedures are effectively carried out."

5. CLP INTRODUCTION

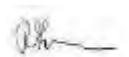
Development name:	Cranwood
Landowner:	Haringey Council
Site address:	Cranwood, 100 Woodside Avenue
Site postcode:	N10 3JA
Existing site use:	Residential
Summary of works:	<i>"Demolition of existing building and redevelopment of site to provide 41 new homes (Use Class C3) within 3 buildings ranging from 3 to 6 storeys in height, with associated vehicular access from Woodside Avenue, wheelchair parking, landscaping, refuse/recycling and cycle storage facilities. New stepped access to Parkland Walk from Woodside Avenue."</i>

Construction Logistics Manager:	Aidan McHugh
Phone number:	07445214592
Email:	Aidan.mchugh@formationgroupplc.com

CLP Produced by:

Name	Signature	Date
Ed Coate		18/10/2022
CLP Accreditation Number:		00385
CLP Accreditation date:		10/12/2020

CLP reviewed by:

Name	Signature	Date
Carl Thrower		18/10/2022
CLP Accreditation Number:		00384
CLP Accreditation date:		10/12/2020

5.1 Development Proposal

The outline of the proposed development consists of:

- Demolition of existing care home
- Site Clearance and Site Set-up
- Removal of existing entrance
- Creation of new entrance
- Erection of 41 new homes
- Creation of amenity spaces
- Provision of car parking spaces
- Provision of secure cycle parking and facilities
- Establishment of refuse and recycling storage
- Associated works, including hard and soft landscaping boundary treatment

5.1 Local Policy

There is no specific *Code of Construction Practice* document published by Haringey Council.

5.2 CLP Structure

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6. VEHICLE ROUTING AND ACCESS

The expected volume and type of construction traffic will not lead to the requirement for diversion or restrictions of traffic on the public highway. Vehicle routes have been chosen to:

- Maximise lengths along dual carriageways and motorways
- Avoid roads with width/height restrictions
- Avoid nearby community considerations (schools, hospitals, town centres)
- Avoid popular bus routes
- Avoid popular cycle routes

6.1 Regional Routes

Regional routes are concerned with vehicles that would originate from outside of London. All vehicles from outside of London will use the M25 onto other major junctions to approach the local area to site. Vehicles from Northern / Western origins will:

- Connect to the A10 or A406 by major national routes.
- Continue on the A406.
- Turn left onto the A1.
- Turn left onto Great North Road.
- Take right onto Woodside Avenue.
- Arrive at site.

Vehicles from Southern / Eastern origins will approach the site by the following:

- Connect to the A406 and/or A1 via the M25 or M1,
- Connect to the A10 or A406 by major national routes (above).
- Continue on the A406.
- Turn left onto the A1.
- Turn left onto Great North Road.
- Take right onto Woodside Avenue.
- Arrive at site.

When egressing, it is advised that vehicles turn left to utilise nearby A-Roads. This road will lead vehicles back onto Great North Road, which connects to the A1.

The site will not have private car parking for operatives.

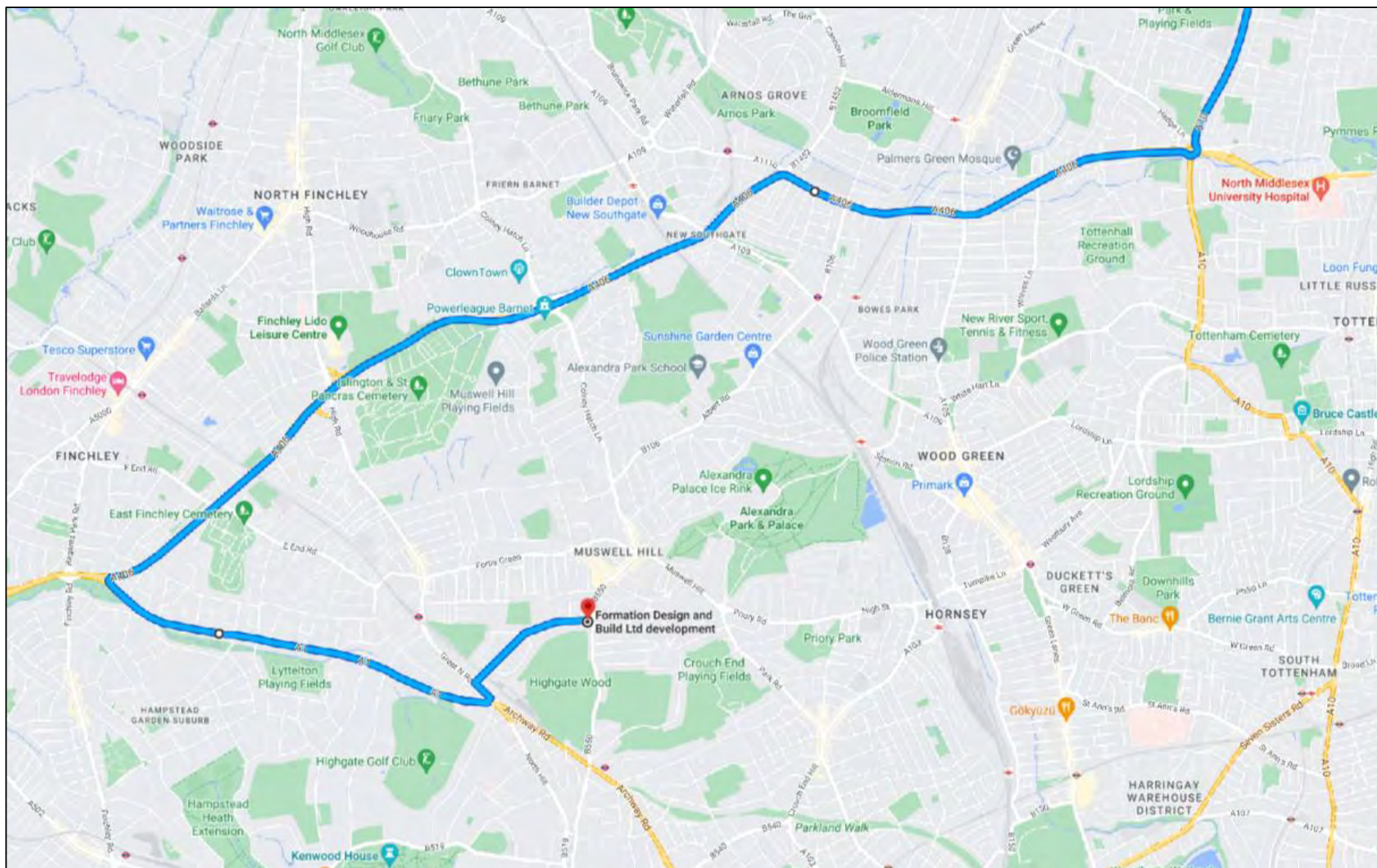


Figure 6.1(a): Regional Route (North and East)

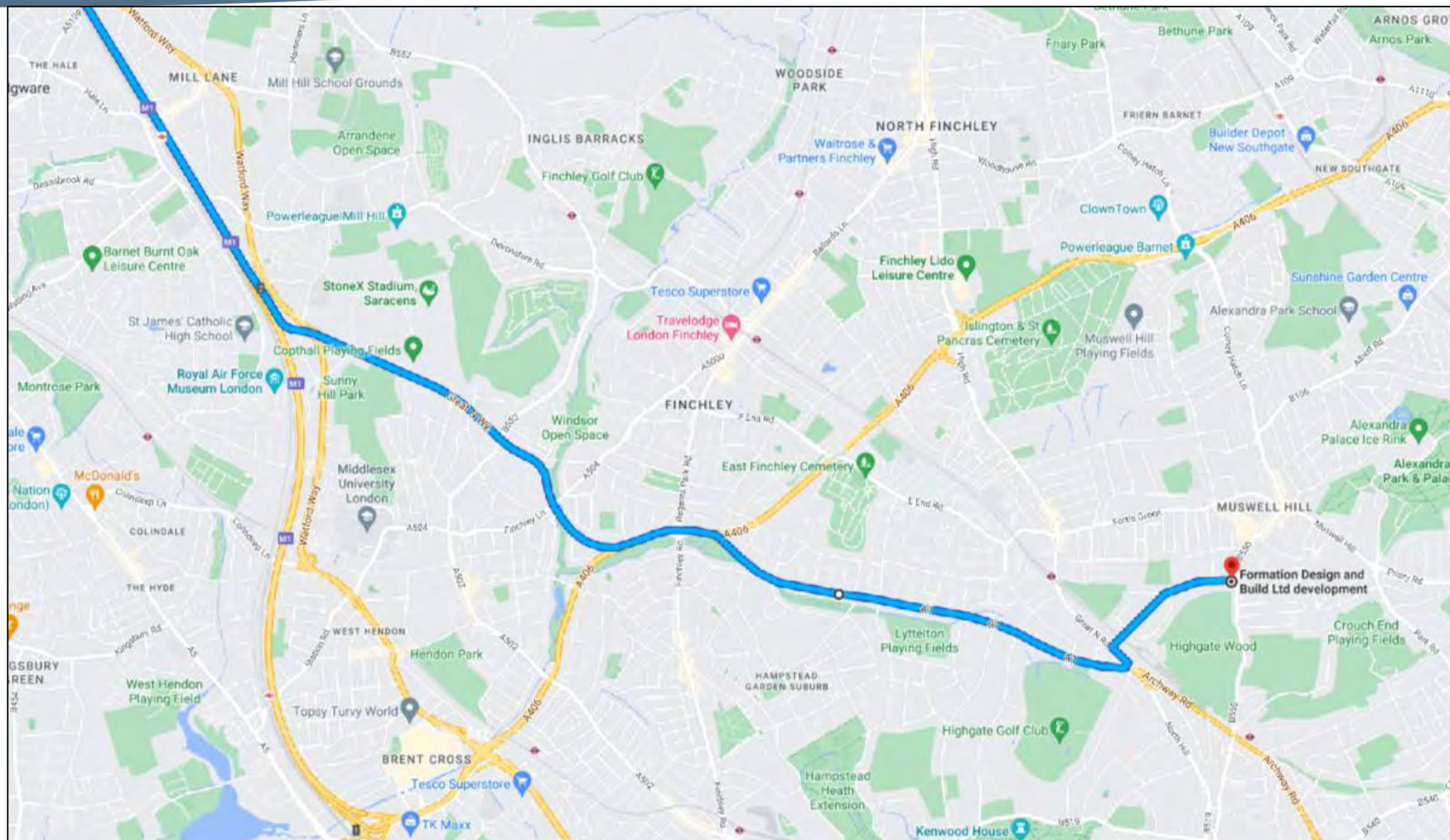


Figure 6.1(b): Regional Route (South and West)

6.2 Site Layout

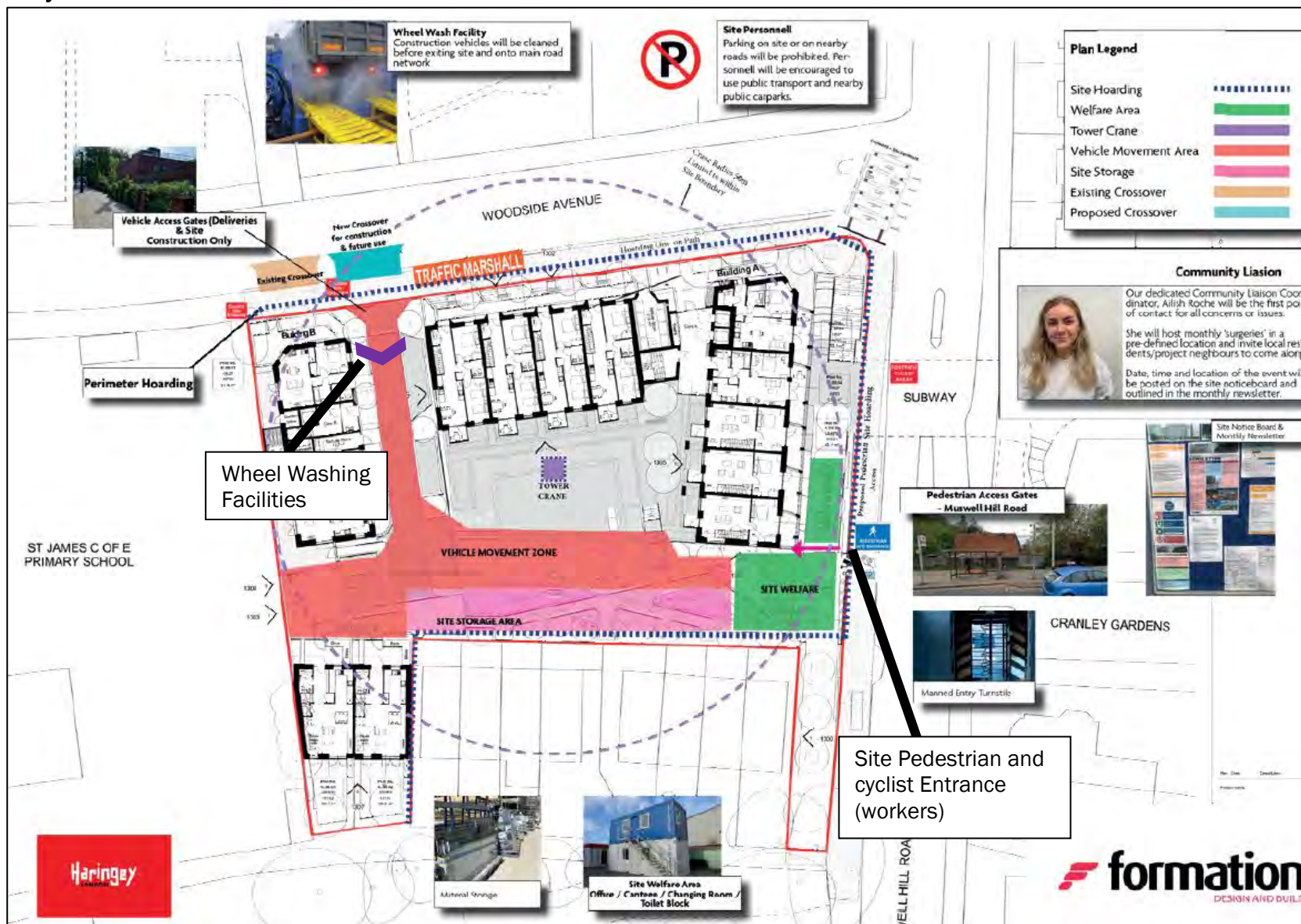


Figure 6.2: Site Map with Access Points (Construction)

7. SWEPT PATH ANALYSIS (CONSTRUCTION)

For the purposes of construction, an articulate lorry (deliveries) has been projected on the local road layout. This vehicle has been shown to be able to turn onto site (right), turn inside site via a slight three-point turn, then egressing heading left.

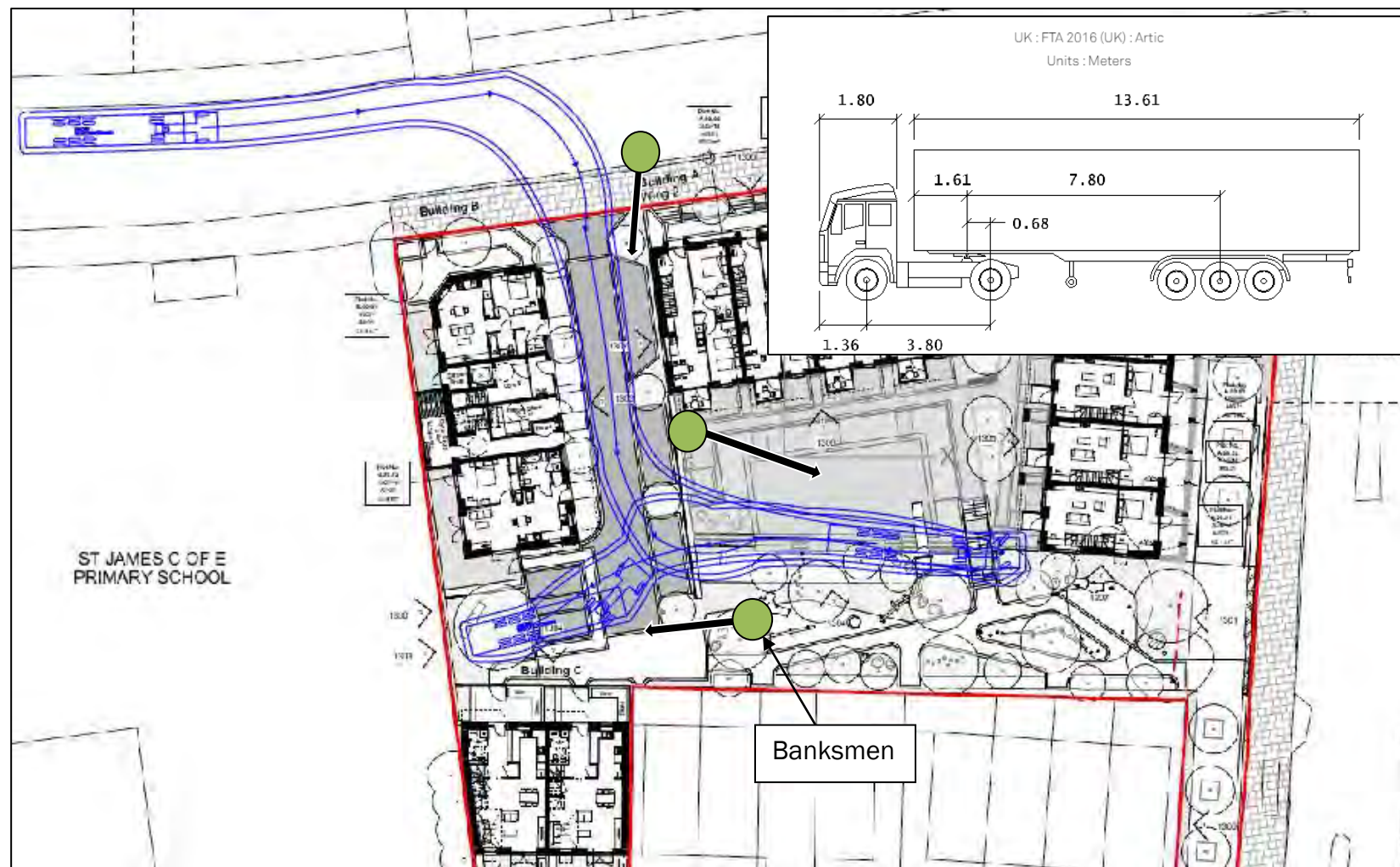


Figure 7.1(a): Construction Vehicle Access

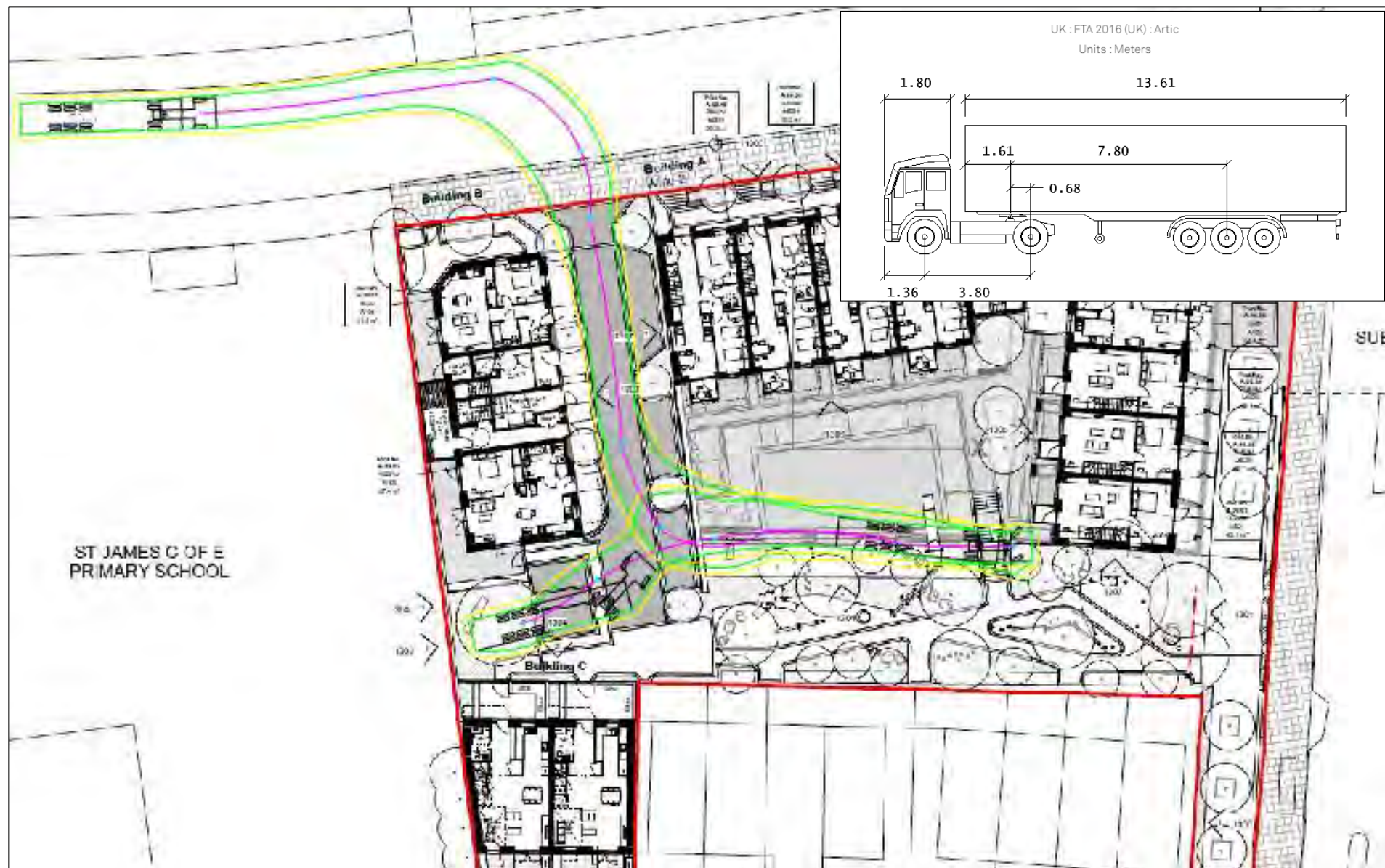


Figure 7.1(b): Construction Vehicle Access



Figure 7.2(a): Construction Vehicle Egress



Figure 7.2(b): Construction Vehicle Egress

As seen above from Section 7, specifically figures 7.1 to 7.2, articulated trucks will be required during construction. These trucks will be required to undertake manoeuvres inside site for the purposes of leaving site in forward gear and turning left to ensure a consistent logistics route. This logistics route has also been chosen for other specific reasons such as avoiding ecological considerations, as well as maximising distance as far as reasonable on A-Roads, this is to reduce time on residential roads around the area as this can cause unnecessary pressure on nearby residents. Furthermore, the vehicle entrance is not the same entrance/location as the worker entrance, thus minimising conflict even more.

Vehicles will pull into site in forward gear, and then slight left inside site, keeping inside the demarcated loading and vehicle movement area (see Figure 6.2). These larger vehicles will then reverse to the western perimeter of the site, inside the site's area, to ensure they can then swing left out of site without hindrance. This specific movement can be seen on Figure 7.1a and b.

As vehicles will be entering a site that requires this type of manoeuvre in a specifically demarcated area of site, 3 suitably qualified and dedicated banksmen will be present to ensure they:

- Do not impede on other demarcated zones
- Are conscious of nearby workers and worker activity
- Reverse correctly into the demarcated area
- Pull into site correctly and do not impede on the public path where they are not inclined to
- Manoeuvre carefully and slowly
- Pull out onto the public highway safely, by ensuring safety and providing awareness to nearby pedestrians, cyclists, and cars

Similar to the demolition vehicle regime, there will be 3 banksmen present on site during manoeuvres and vehicle entry. These banksmen will be specifically located so that all angles of the three-point turn will be covered. Once vehicles are finished loading, 3 banksmen will still be required.

During entry, these 3 banksmen can be seen on Figure 7.1a. During egress, these 3 banksmen can be seen on Figure 7.2a. These banksmen's potential movements during access and egress can also be seen on these Figures as they will not remain stationary during vehicle movement.

Due to site constraints, smaller vehicles such as vans and vehicles of 10m or less length or less such as conventional LRIGID and SRIGID lorries will follow similar manoeuvres as above, and as such these banksmen will still be required. These vehicles will pose less of a risk as their turning circles are smaller than articulated lorries shown in the figures above.

Banksmen in general will be responsible for the oversight and safety of nearby pedestrians, cyclists, and vehicles as these construction vehicles enter and exit the public road.

Furthermore, articulated movements will not be required post-occupation of any of the units on-site, including those on the side of the footway where there is a slight overrun.

7.1 Local Access Including Highway, Public Transport, Cycling, Walking and Waterways

7.1.1 Highways, Carriageways and Footways

Within the Borough of Haringey, there are multiple red routes, these are:

- Seven Sisters Road N4 (A503)
- Archway Road N6 (A1)
- Great Cambridge Road N18 (A10)
- Roundway N17 (A10)
- Bruce Grove N17 (A10)
- Tottenham High Road N17/N15 (A10)
- Tottenham Hale Gyratory
- Monument Way & Broad Lane N15

Red routes will be used for vehicles travelling to and from site, operatives will be made aware of the significance of red routes. Signs and road markings along all red routes within London provide operatives with the information they need to ensure they follow red route rules.

Operatives will be made aware of the fact that there are multiple parking restrictions that apply to vehicles on the roads nearby to the site. These include:

- Controlled Parking Zone (St Luke's – Mon – Fri – 11:00 – 13:00)
- Controlled Parking Zone (Fortis Green – Mon – Fri – 11:00 – 13:00)

However, the above CPZs do not entirely cover many of the streets in the local area. While the parking of operatives in these non-CPZ areas can therefore not be enforced, operatives will be widely discouraged to park on these roads as to not saturate residential parking.

7.1.2 Railway/Underground

No railway or underground lines will be impacted by the development.

The nearest station to the new development is Highgate Underground station. This is 0.8 miles south-east (16-minute walk) of the development and is serviced by the Northern Line.

7.1.3 Bus Routes

The Table below displays the bus routes that are within 400m of the site.

Bus Stop	Service	Destination	Distance from Site (metres)
Woodside Avenue	43	London Bridge	<100 metres
	134	Warren Street	
Cranley Gardens	43	London Bridge	<100 metres
	134	Warren Street	

Where possible, the routes for operatives and vehicles identified within this report have been chosen to avoid major bus local routes.

There are no bus stops immediately local (along Woodside Avenue) to the site's area and therefore no further consideration to bus stops (such as relocation or temporary stops) will be required because of development.

7.1.4 Cycling

The nearest cycle route to the site is route LCN (as well as a local route at the Grove that connects to this). Local routes (found at <https://www.opencyclemap.org/>) are not very prevalent around the site as these are largely ubiquitous east of the site by South Tottenham and Stamford Hill with local roads and not largely within the site's area. National Cycle Network 1 will be avoided by construction traffic routing. Local routes will be avoided where feasible but due to their extent this will not always be possible.

7.2 Community Considerations

7.2.1 Local Policy

There is no specific *Code of Construction Practice* document published by Haringey Council.

7.2.2 Nearby Notable Locations

The nearest community considerations to the development is the adjacent school.

The Construction Logistics Manager will share information about the construction programme and any disruptive activities with the local community and will collate and report any issues or concerns.

7.3 Encouraging Sustainable Travel

While it will be difficult to encourage sustainable transport options as listed above, Formation will ensure that ample cycle parking will be present in the demarcated welfare areas seen on Figure 6.2. There is sufficient space also on site such that should extra cycle parking be required that this can be accommodated for.

Workers will also be provided with lockers on site within the cabins and welfare areas to ensure that workers with tools will be able to store their tools on site in a secure manner. This will reduce SOV trips in the long-term as workers will no longer be required to use private transport to bring tools and/or equipment to site.

Showers will also be present to ensure that any workers walking and/or cycling to the site will be able to change clothes or use these facilities when entering or leaving the site. Based on the below table, space for 50 cycles will be made available.

7.4 Estimated Worker Numbers

Activity	Staff	No. of Deliveries	Number of Vehicles on Site at One Time
Site setup and demolition	32	4 per day	1
Basement excavation and piling	48	5 per day	1
Sub-structure	54	6 per day	1
Super-structure	58	5 per day	1
Cladding	60	4 per day	1
Fit-out, testing and commissioning	75	4 per day	1

8. ESTIMATED VEHICLE MOVEMENTS

8.1 Construction Vehicles

Table 8.1: Estimated Construction Vehicles – Monthly and Daily

Construction phase	Period of stage	No. of trips (monthly)	Peak no. of trips (daily)
Site setup and demolition	Q3 2022 - Q4 2022	50	3
Piling	Q4 2022 - Q1 2023	50	3
Sub-structure	Q1 2023 - Q2 2023	50	3
Super-structure	Q2 2023 - Q1 2024	50	3
Cladding	Q1 2024 - Q2 2024	50	3
Fit-out, testing and commissioning	Q1 2024 - Q3 2024	50	3
Peak period of construction	Q1 2023 - Q1 2023	80	4

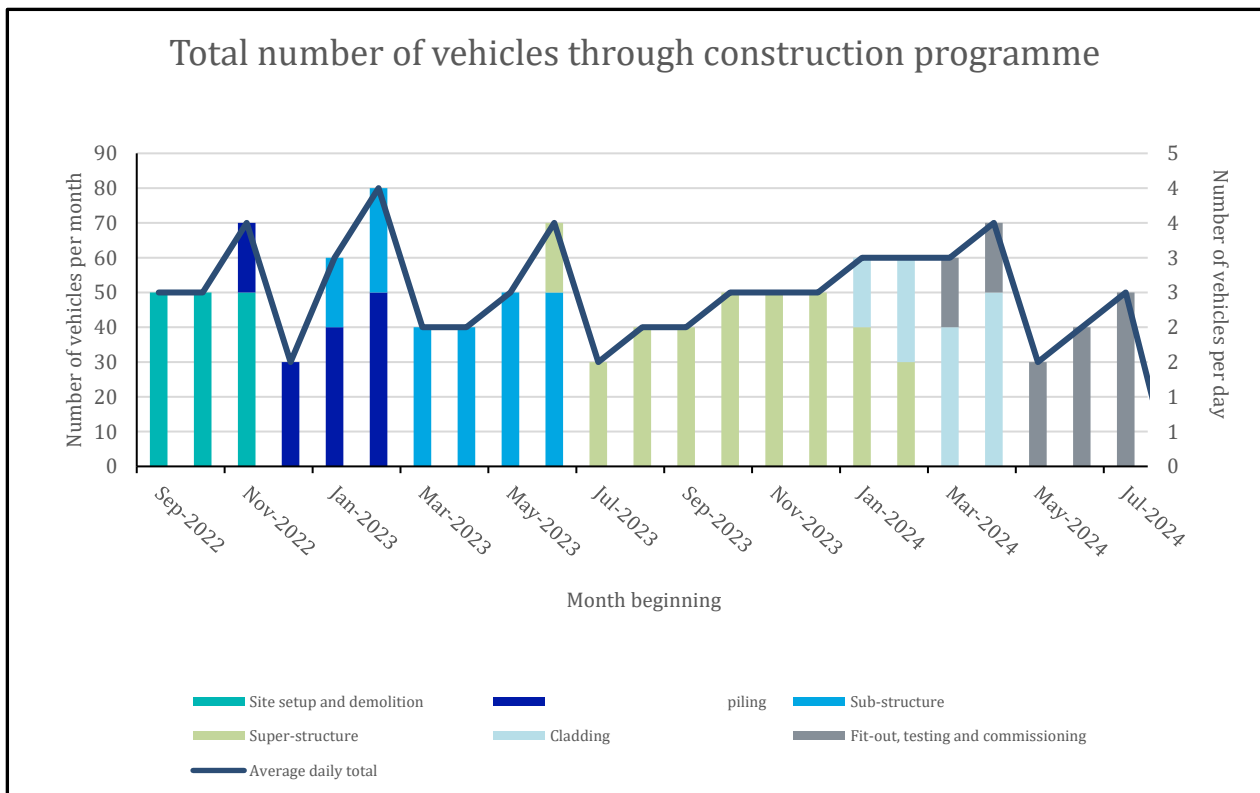


Figure 8.1: Estimated Construction Vehicles – Monthly and Daily

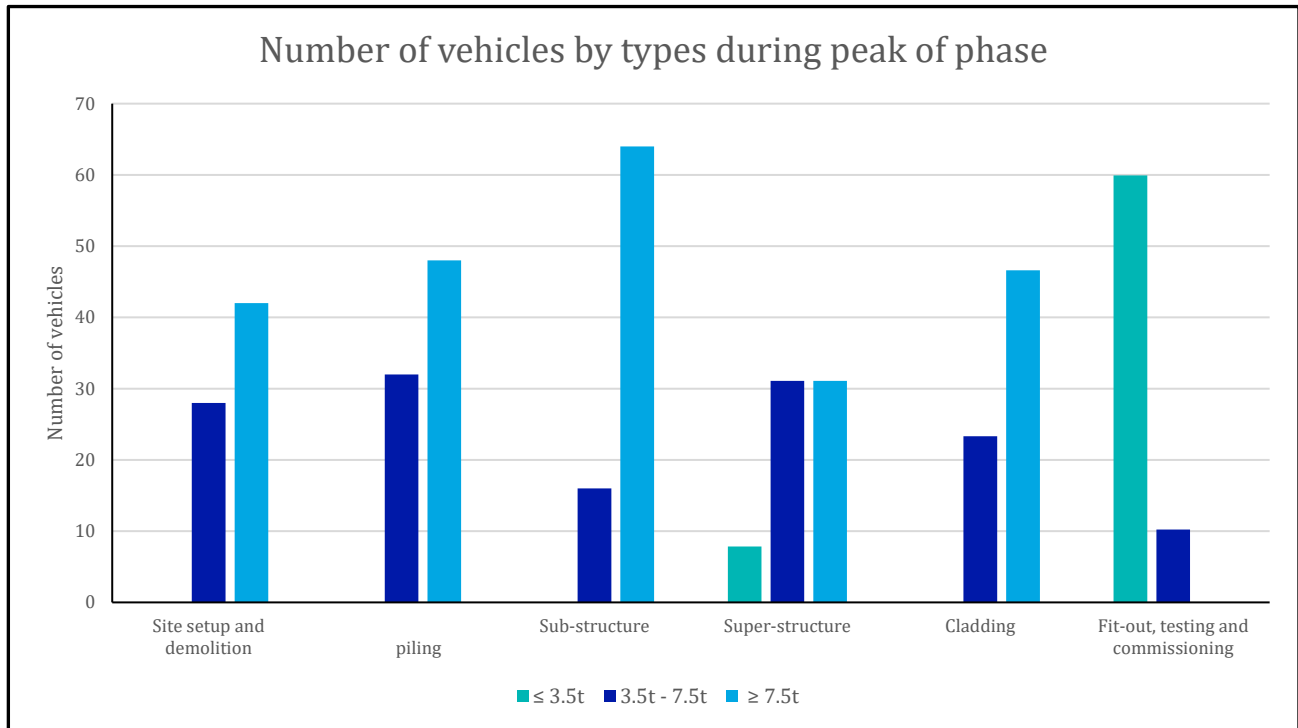


Figure 8.2: Estimated Construction Vehicles – Monthly and Daily

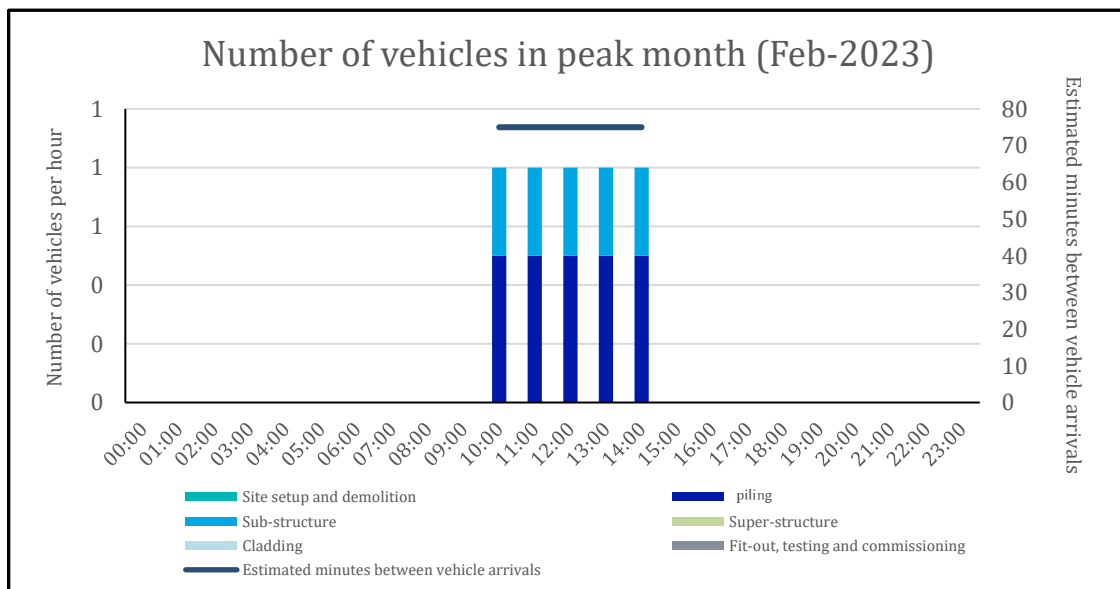


Figure 8.3: Hourly Arrival Profile of Vehicles During Peak

9. IMPLEMENTING, MONITORING AND UPDATING

9.1 CLP Co-ordinator

This document will be monitored and managed by the site management team from the Main Contractor – Formation, at the development.

The CLP will be communicated to all operatives and visitors to the site during the Site Induction. Delivery drivers will be issued with a copy of the site-specific driver's handbook at the point of booking. A handbook is an effective way to ensure that all contractors are aware of their obligations. This handbook will include:

- Safety toolbox talk – setting out how and when these will take place, including frequency and duration and an outline of topics to be included. These should be environmental, and safety orientated.
- Anti-idling toolbox talk – setting out how and when these will happen for all drivers, including frequency and duration.
- Vehicle routing and delivery scheduling system – an explanation to contractors of the routing and delivery system in use, contractors' access and their requirement to utilise the schedule deliveries system.
- Driver training – an outline of how and when this will happen during the contract, and the company that will carry out the training.
- Safety and environmental standards

Gate checks will be carried out on all arrivals to ensure that the correct paperwork has been completed and the driver has utilised the routes laid out in the driver's handbook.

Unless there is capacity to accommodate within the specified loading area, unplanned deliveries will be turned away immediately and advised to return to the site at a prearranged delivery time. Unplanned deliveries will not be permitted to wait at any location on the local highway network within the vicinity of the site.

Hauliers will be required to contact the site daily and indicate their delivery schedule for the following day. The proposed deliveries will be checked against the weekly delivery schedule. This will be overseen by the site management team to ensure that no two construction HGV deliveries occur simultaneously at the site, thereby ensuring that there is always space at the site to accommodate the necessary plant and deliveries.

Hauliers will be provided with a Drivers' handbook. This will ensure that drivers are aware of their obligations. This handbook will contain the essentials relating to the environment and safety. This handbook will include:

- Authorised timings and associated restrictions
- Site working hours
- Local vehicle constraints (LRIGID and SRIGID vehicle sizing and manoeuvres)
- Booking and scheduling information – including a policy to stagger deliveries will be employed to avoid vehicles queuing or waiting on the local highway network within the vicinity of the Site. Anti-idling policies will be in place.
- Authorised routes to and from the site, and which major road networks to use.
- Site maps, including loading areas, site entry and exit points, and the scaffold considerations.
- Vulnerable road user safety information (traffic marshal locations, healthy and safety guidance).

Sufficient time will be given between deliveries to allow for any delays as a result of the delivery vehicles getting stuck in traffic or the loading / unloading taking longer than expected and to avoid any vehicles waiting on the surrounding highway network.

The site management team from the contractor, will nominate a responsible employee to collect information on breaches of the procedures contained within this document and complaints from suppliers and the general public. They will manage the response to any complaints or suggestions received and discuss with upper management where appropriate.

The contractor will provide a dedicated telephone number to allow the public to contact the site management team. Information on this facility shall be prominently displayed on site hoardings.

Reporting

Contractors will report on any requirements as part of this CLP, this will include any update to information, or any works that would be considered managed or directed by this CLP.

This reporting will occur every two weeks throughout the duration of the construction programme, the output of this reporting will be under the discretion of the contractor.

The contractor will be responsible for managing and monitoring this reporting. Records will be kept of this reporting, by the contractor, to ensure that any works relating to the CLP are registered. Any deviation or serious defects relating to works with respect to this CLP may result in a 'stop work' order.

10. AIR QUALITY AND DUST RISK

The following sections have been written to address the final element of Condition 11 for the associated development. This section of this report will otherwise be known as an Air Quality and Dust Risk Assessment (AQDRA) and/or Dust Management Plan (DMP). This section of this report has been written specifically to address the control measures and outcomes (dust and air quality) focusing on construction.

This specific condition wording can be seen within section 1 of this report.

Construction activities have the potential to cause dust nuisance and health impacts if appropriate mitigation measures are not applied. The GLA has released Supplementary Planning Guidance on the Control of Dust and Emissions from Construction (GLA, 2014). The SPG outlines a risk assessment approach for construction dust assessments and helps determine the mitigation measures that will need to be applied. This report describes the potential risk of dust impacts associated with construction activities required as part of the proposed development.

To ensure that this document remains relevant, adequate and effective as the works progress, the Dust Management Plan will be reviewed and updated as necessary:

- Every 3 months (minimum).
- As instructed by Project Manager.
- Following any changes to the scope of the works that have had an impact on environmental requirements.

11. POLLUTION AND DUST CONTROL MEASURES

An inventory and timetable of all dust and PM₁₀ generating activities are described in Table 13.1 below:

Table 11.1: Dust and Emissions Generating Activities

Phase of Works	Activities Generating Dust	Level of Risk
Earthworks	<u>Earthworks</u> Excavation, Haulage, Tipping, Stockpiling. Levelling the site and landscaping.	<u>Earthworks</u> Medium Risk
	<u>Trackout</u> Site traffic movement onto Seaford Road and onto surrounding roads, including all deliveries and earth movements / removal. Trackout length (<50m).	<u>Trackout</u> Low Risk
Construction	<u>Construction</u> External cladding and rendering Stockpiling and storage of materials. Concrete placing during the creation of the ground floor slab.	<u>Construction</u> Medium Risk
	<u>Trackout</u> Site traffic movement onto Cranwood from Woodside Avenue	<u>Trackout</u> Low Risk

11.1 General Activities

There are numerous activities on development projects that if unmitigated can give rise to elevated levels of dust. This can be the movement and placing of granular materials and the excavation of foundations, poor stockpile management, site traffic movements, etc.

Dusty emissions escaping the work area may cause nuisance through, for example, surface soiling, loss of visibility due to deposition and effects on local people. Since it is difficult to suppress dust once it is airborne it is preferable, where possible, to prevent dust from being generated in the first place.

11.2 Mitigation Measures and Management Controls

The GLA SPG Dust and Emissions Control, and Institute of Air Quality Management (IAQM) guidance, will be adhered to throughout the construction works on-site. The measures adopted will be consistent with this Guidance and proportionate to the risk of dust nuisance in individual cases and will therefore, be more stringent where construction activities are closer to sensitive receptors.

Contractors will implement all necessary management and Best Practicable Means (BPM) to reduce levels of dust emissions from the Site both internally (*in situ*) and externally (off-site). Site specific control measures extend beyond those required for a negligible dusty site but will be implemented as a minimum in order to reduce the likelihood of dust nuisance from dusty operations from construction, earthworks, on-road and off-road emissions, and these will include the measures outlined below in Table 11.2

Table 11.2: Site specific control measures

	Mitigation measure – Specific to Earthworks	Implemented on site
1	Only remove secure covers in small areas during work and not all at once.	✓

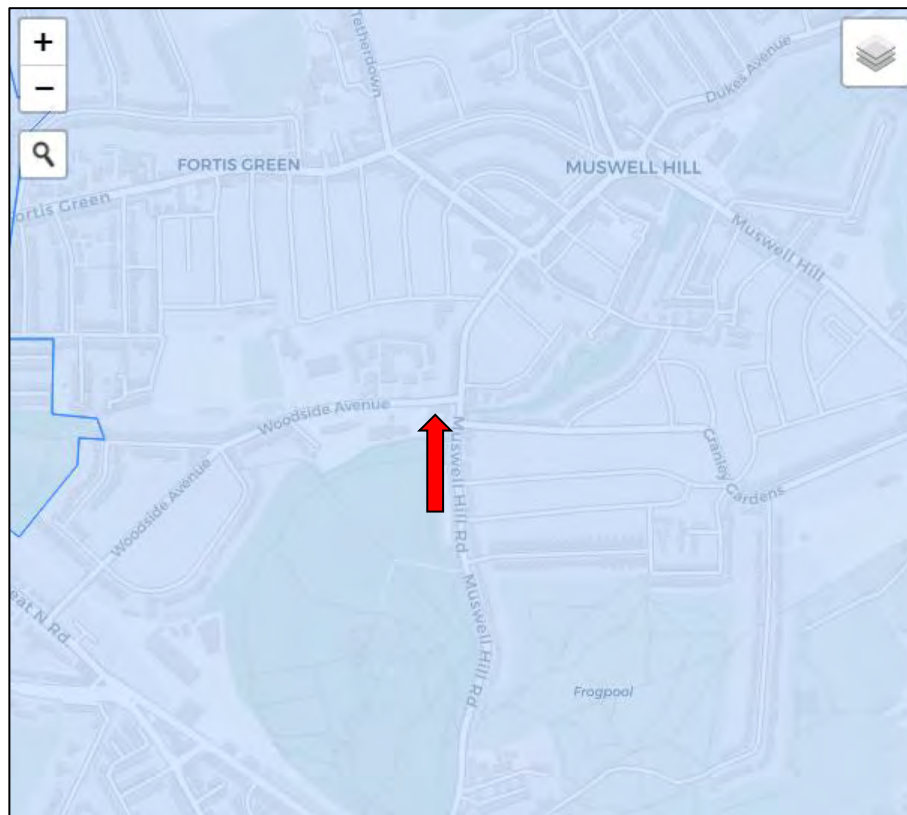
	Mitigation measure – Specific to Construction	Implemented on site
1	Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place	✓
2	Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.	✓
3	For smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust.	✓

** For other measures please see associated DEMP.*

12. NRMM AND NRMM REGISTRATION

Formation will ensure all on-road vehicles will comply with the requirements of the London Low Emission Zone. The use of Ultra-Low Emission Vehicles (ULEV) (e.g. Euro VI (HGV), Electric, Hybrid (Electric-Petrol)) will be prioritised and Formation will work with suppliers that can provide Euro VI vehicles, and preferably electric or hybrid vehicles.

Due to the location of the site, highlighted below, emissions from non-road mobile machinery (NRMM) with net power between 37kW and 560kW used on site will meet the Stage IIIB of the EU Directive 97/68/EC and its subsequent amendments as a minimum. This will apply to both variable and constant speed engines for both NOx and PM.



All eligible NRMM will meet the standards above unless it can be demonstrated that the machinery is not available or that a comprehensive retrofit to meet both PM and NOx emission standards is not feasible. The full exemption and retrofit procedure document for NRMM can be found here - https://www.london.gov.uk/sites/default/files/nrmm_lev_exemption_and_retrofit_policy_-_covid-19_update_final_0.pdf

The details of all proposed NRMM to be used on the site for the construction phases of the development will be registered on the NRMM register (<https://nrmm.london/user/register>). Formation will keep an inventory of NRMM currently on site and upload this to the NRMM platform.

A NRMM compliance log (including inventory) will be created, updated, and maintained by Formation. This will be issued to Haringey Council on request (Local Authority Inspection) via e-mail and will be also online utilising the NRMM portal found at: <http://nrmm.london> as mentioned above.

Formation will engage with their supply chain and subcontractors to identify areas where emissions could be reduced for on-site machinery or vehicles entering site. **NRMM have confirmed receipt of registration, and this registration can also be found in the Appendices of this report.**

13. DUST RISK ASSESSMENT

The following Dust Risk Assessment has been carried out in accordance with the Mayor of London SPG 'The Control of Dust and Emissions during Construction July 2014 and the Institute of Air Quality Management (IAQM) Guidance on the assessment of dust from construction (January 2014), to allow for the classification of the risk of dust impacts from the site. This will then allow mitigation measures appropriate with that risk to be identified and implemented on site.

This Dust Risk Assessment focuses on Earthworks, Construction, and Trackout only for Cranwood.

The construction dust risk assessment considers the potential for dust soiling (nuisance) and PM₁₀ (human health) impacts within 350 m of the site boundary; or within 50 m of roads used by construction vehicles. Receptors that may be affected by the generation of dust and vehicle emissions because of the construction works can include but are not limited to:

- Local residents in the immediate surrounding area
- Construction workers;
- Visual amenity; and
- External surfaces and materials (through surface soiling).

Worksites are classified into one of three tiers according to dust risk and are assessed based on site activities and the sensitivity of nearby receptors. The Dust Emission Magnitude (DEM) is based on the scale of the anticipated works and the site will be classified as defined by the IAQM and the London SPG.

The sensitivity of the area considers several factors. These sensitivities are determined using GLA Tables. These are defined by:

- The specific sensitivities of receptors in the area;
- The proximity and number of those receptors;
- In the case of PM₁₀, the local background concentration
- Site specific factors, i.e. whether there are natural shelters such as trees, to reduce the risk of wind-blown dust.

13.1 Dust Soiling

Descriptors	Result
Density	10-100
Distance from Source	< 20 m
Receptor Sensitivity	High
Overall Risk Classification	High

Site specific factors:

- Users can reasonably expect an enjoyment of a high level of amenity (primarily adjacent school and nearby residential properties);
- the appearance, aesthetics or value of their property would be diminished by soiling;
- The people or property would reasonably be expected to be present continuously, or at least regularly for extended periods as part of the normal pattern of use of the land (dwellings primarily).

13.2 Human Health

Descriptors	Result
Density	10-100
Distance from Source	< 20 m
Receptor Sensitivity	High
PM10 Annual Average	Less than 24
Overall Risk Classification	Low

PM10 annual classification:

In the case of the 24-hour objectives, a relevant location would be one where individuals may be exposed for eight hours or more in a day (e.g. residential properties, Schools)

The predicted baseline 2020 PM₁₀ annual mean concentration for the 1km grid square that covers the site is 16.98 µg/m³ (DEFRA UK-AIR GIS Tool). This gives an indication of the annual mean concentrations at receptors in the vicinity of the development site. Therefore, using GLA guidance, the area surrounding the onsite works is of 'Low' sensitivity to human health effects.

13.3 Ecological Effects

Descriptors	Result
Distance from Source	<50 m
Receptor Sensitivity	High
Overall Risk Classification	Medium

The SPG's guidance to assess the impacts of demolition on ecological receptors has been followed. The guidance suggests that where a receptor is located within 350m of a site boundary it should be considered. If a receptor is within 50m then it should be assessed for risk impact.

There are two designations within 350m of the site boundary, and one within 50m. These considerations are Parkland Walk (LNR) which is within 50m of the site, and Queen's Wood (LNR) which is within 350m of the site. Both of these designations are seen to the east/south-east of the development.

Therefore, risk classification of the ecological considerations has taken place. This can be seen categorised above as medium. This categorisation, and the subsequent risk table (9.1) has been produced using the GLA's SPG on Dust Emissions.

This risk has been categorised as medium as the receptor sensitivity can be considered high due to its designation as an LNR, but it is not within 20m of the site.

Access and egress routes, as well as general construction routes, have been selected to not interfere or be within 20m of these ecological considerations.

13.4 Other Factors

The following additional factors have been considered when determining the sensitivity of the area.

- Any history of dust generating activities in the area;
- The likelihood of concurrent dust generating activities on nearby sites;
- The season during which the work will take place;
- Duration of the potential impact, as a receptor, may become more sensitive over time.
- Locations with a local designation where features may be affected by dust deposition.

Activity	Dust Emission Magnitude
Earthworks	MEDIUM
Construction	MEDIUM
Trackout	SMALL

Dust Soiling Sensitivity	Human Health Sensitivity	Ecological Sensitivity
High	Low	Medium

Therefore, the following section outlines these combined sensitivities and magnitudes.

Table 13.1: Summary of Risk of Impacts Without Mitigation

Potential Impact	Dust Risk		
	Earthworks	Construction	Track-out
Dust Soiling	Medium risk	Medium risk	Low Risk
Human Health	Low Risk	Low Risk	Low Risk
Ecological	Medium Risk	Medium Risk	Low Risk

The site manager will ensure that site personnel always follow best practice to control and limit emissions of gaseous and particulate pollutants into the atmosphere from construction activities, including from vehicles and plant.

These measures as seen above (The relevant dust-controlled measures for medium risk contained within Appendix 7 of the Mayors SPG) are allocated according to the construction stage and site risk.

The measures will be implemented on site in full and will result in the impact of dust emissions during construction of the development being negligible. Both desirable and highly recommended control measures as part of Appendix 7 of the Mayors SPG are highlighted below and will be adhered to by the site.

13.1 PM10 Compliant Site Monitoring Procedures and Protocols

While PM10 and Dust Emissions will be monitored throughout the 6-week demolition period, these same monitors will also be in place up until the end of the first fix stage during the construction period. This will be done using the same real time automatic monitors. Two *Airly* PM10 monitors will be installed in accordance with IAQM Guidance. They will be installed at a minimum of 1m above the site hoarding on the site boundaries at the proposed locations indicated by the red marks on Figure 9.1.

The PM10 monitors will be located along the transect of the prevailing wind (south – south westerly) and close to sensitive receptors. One of these PM10 monitoring locations shall also have an anemometer (wind speed and direction sensor) to monitor the on-site wind conditions.

Within 7 days of the installation of the two PM10 monitors on site the internet-based log-in details to enable access to the real-time PM10 monitoring data shall be issued to Haringey Council by e-mail. These log-in details, and the platform used by the *Airly* monitors to store and present the data, will be available to the pollution team for on-going assessment where it is required for both the demolition and construction phases.

Real-time PM10 monitoring locations may also be subject to change due to mitigating circumstances such as changes to sensitive receptors and access issues. Any amended particulate (PM10) monitoring locations will be submitted to Haringey Council for written agreement prior to this change.



Figure 9.1: Dust Monitoring Locations

APPENDIX 1: Pro-Forma Complaint and PM10 trigger alert Notification Form

Reference Number:		Date:		Time:	
Monitoring Location					
Level of dust emission					

Complaint Notification (Yes/No)					
Date:		Time:		Received by :	
Complainants Name:					
Telephone Number:					
Address:					
Weather Details :					
Description of complaint / incident:					
Investigative action taken:					

Details of best practice mitigation in place:			
Remedial action taken:			
Preventative measures implemented to prevent further complaints/incidents/exceedance:			
Is the complaint considered	Justified	Unsubstantiated	Unfounded
Signed:			
Print name:			
Position:			
Date:			

[illegible]

APPENDIX 3: Weekly Inspection Checklist

Week Commencing:								
Inspected Items	Frequency	Mon	Tue	Wed	Thu	Fri	Sat	Sun
<i>Person completing the checklist</i>	<i>Initials</i>							
Dust being controlled correctly by personnel	Daily							
Visual inspection of mud/debris on haul routes	Daily							
Visual inspection of dust soiling on local streets, cars and window sills	Daily							
Visual observation of dust generation from demolition	Daily							
Wind direction	Daily							
Wind speed	Daily							
Weather forecast	Daily							

Appendix 4



Cranwood

Haringey, N10 3JA, Greater London

Planning app. #: HGY/2021/2727

Start/End: 17 Oct 2022 - 21 Oct 2024

Registered: 17 Oct 2022



Contacts

Direct Site Contact

Aidan McHugh

Aidan.McHugh@formationgroupplc.com

Site Administrator



Ian Wheeler ian@formationgroupplc.com

Invitations

[+ Invite a user](#)

Machinery

[+ Add](#)

Kind Regards,

Ian Wheeler
Design Manager



Mobile : +44(0) 7908024854

Email : ian@formationgroupplc.com

From: nrmm@london.gov.uk <nrmm@london.gov.uk>

Sent: 17 October 2022 17:15

To: Ian Wheeler | Formation Design & Build <ian@formationgroupplc.com>

Subject: NRMM - Registration of site - \$Site.name

***** Security notice: This message originated from outside the organisation using the email address nrmm@london.gov.uk *****

Dear Ian

Thank you for registering Cranwood. The site is within Greater London

The current emissions requirement on your site is:

All machinery on your site must meet EU Emission Stage IIIB. Because EU Emissions Stages IIIB and IV have not been defined for constant speed engines, this means that all constant speed machinery will effectively be required to meet EU Emission Stage V.

The emissions standards apply to all machinery with an engine power between 37 kW and 560 kW. Please add all in-scope NRMM to the site record as it arrives on your site. You can also use the site to record equipment that does not fall within these power bands. This will assist the enforcement officers to identify machines that they do not need to inspect in detail when they visit the site.

As the site administrator you are expected to ensure that all machinery used over the course of the development is correctly logged, including any retro-fits or other machinery that requires an exemption to operate. You are also expected to ensure that non-compliant machinery, or machinery that has been refused an exemption, is removed promptly. Failure to comply with the NRMM Low Emission Zone can result in formal enforcement action against the site.

Please login to:

Add machinery

Invite machinery administrators to your site

Invite sub-contractors to your site Invite a new site administrator to your site (You should only normally do this if you are handing the site over to a new manager, or to a new company who are taking over a later stage of the development. Please note that if you invite a new site administrator to the site, they will be able to view all existing and previous machinery records for the site.

Machinery administrators can add machinery to the site and view/edit all machinery at that site but will not be able to edit the site details or manage other site users.

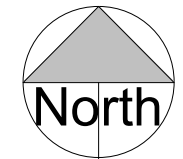
Sub-contractors can add machinery to the site and view/edit their own machinery at that site but will not be able to view/edit machinery added by other site users, edit the site details or manage other site users.

Kind Regards

The NRMM Team

Appendix 5





DO NOT SCALE FROM THIS DRAWING. USE FIGURED DIMENSIONS IN ALL CASES. VERIFY DIMENSIONS ON SITE AND REPORT ANY DISCREPANCIES TO THE DESIGNERS IMMEDIATELY. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE DESIGNER'S SPECIFICATION.
© THIS DRAWING IS COPYRIGHTED AND MAY ONLY BE REPRODUCED WITH THE DESIGNER'S PERMISSION.

1. ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL RELEVANT SPECIFICATIONS, BILLS OF QUANTITIES, ARCHITECTURAL SERVICES AND ENGINEERING DRAWINGS.
2. ANY DISCREPANCIES BETWEEN THESE DOCUMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
3. ALL DIMENSIONS ARE IN MILLIMETRES, UNLESS NOTED OTHERWISE. TBC ON SITE.
4. ALL LEVELS ARE IN METRES RELATED TO ORDNANCE DATUM. TBC ON SITE.
5. DRAWINGS ARE NOT TO BE SCALED.
6. ALL TEMPORARY WORKS TO CONTRACTORS DETAILS.
7. CONTRACTOR TO APPROVE ALL SET OUT INFORMATION PRIOR TO CONSTRUCTION.

GENERAL DRAINAGE NOTES:

1. ALL NEW DRAINAGE TO BE INSTALLED IN ACCORDANCE WITH BS EN 12201.
2. INLET LIDS UP EXISTING DRAINAGE WHERE APPLICABLE TO BE CONFIRMED BEFORE WORKS COMMENCE.
3. ALLOW FOR CARRYING OUT CCTV SURVEY AFTER WORKS ARE COMPLETE TO VERIFY DRAINAGE SYSTEM CARRY OUT A TEST ON ALL NEW SETTERS ACCESS CHAMBERS/MANHOLES.
4. ANY DISCREPANCIES TO BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
5. REFER TO DRAWING D&S-201 FOR TYPICAL MANHOLE DETAILS.
6. ALL FOUL WATER PIPES TO BE 150mm DIAMETER AT ALL FALLS UNLESS OTHERWISE STATED.
7. ALL SURFACE WATER PIPES TO BE 100mm DIAMETER AT ALL FALLS UNLESS OTHERWISE STATED.
8. ALL PIPES TO HAVE RODDING EYES AND INFORMATION WATER TANKS/CONDUITS DRAINING.
9. FORMWORK DRAINAGE LAYOUTS AND INFORMATION WATER TANKS/CONDUITS DRAINING.
10. ALL MANHOLES TO BE 1000mm DIAMETER INTERNAL PRECAST BRICK UNLESS OTHERWISE STATED.
11. ALL INSPECTION CHAMBERS TO BE 800mm DIAMETER INTERNAL WITH 200mm CONCRETE SURROUND.
12. ALL DRAINAGE TO BE UP TO ACCEPTABLE STANDARDS.
13. EXTERNAL ACCORDING TO ARCHITECT LANDSCAPE ARCHITECT DETAILS.
14. ALL GULLIES TO BE TRAPPED.
15. ALL PIPES THAT CROSS OVER EXISTING ROAD OR ROADSIDE JUNCTIONS AND PIPES TO BE ELEVATED WITH CAPS ALTERNATIVELY STEEL PIPES CAN BE USED WHERE OTHER DETAILS ARE NOT AVAILABLE.
16. ALL SWAMP LOCATIONS TO BE DETERMINED BY THE ARCHITECT.
17. ALL EXISTING MANHOLES TO BE REMOVED AND REPLACED WITH NEW MANHOLES.
18. MULTIPLE CULVERTS FROM ROAD TO REDUCE RISK OF LOCALISED FLOODING ACCESS TOTAL TOWARDS OUTLET.

DRAINAGE LEGEND

- BOUNDARY LINE
- EXISTING FOUL WATER SEWER
- EXISTING SURFACE WATER SEWER
- PROPOSED SURFACE WATER PIPE
- PROPOSED FOUL WATER PIPE
- PROPOSED PERFORATED PIPE
- PROPOSED FILTER DRAIN
- PROPOSED PUMPED SURFACE WATER SEWER
- EXISTING SEWER TO BE ABANDONED & REMOVED & DIVERTED
- EXISTING SEWER TO BE ABANDONED & REMOVED & DIVERTED
- THAMES WATER SURFACE/FOUL WATER SEWER MANHOLES
- PROPOSED 1200mm DIA. FOUL SURFACE WATER MANHOLES ACCESS COVER TO BE IDENTICAL WITH DOUBLE SEALED RECESSED MANHOLE COVER
- PROPOSED 1200mm DIA. FOUL SURFACE INSPECTION CHAMBERS ACCESS COVER TO BE IDENTICAL WITH DOUBLE SEALED RECESSED MANHOLE COVER
- FOUL SURFACE WATER PUMPING STATIONS
- ACO CHANNEL TO LANDSCAPE ARCHITECTS DETAILS
- PROPOSED DETENTION BASIN FOR EMERGENCY STORAGE (9m³ WITH DEPTH 0.4m)
- PROPOSED BIOTRETMENT AREA
- PROPOSED PERVIOUS PAVEMENT WITH SUB-BASE ATTENUATION OF 250mm WITH DEPTH 0.25m (VOLUME 25m³)
- AREA TO DRAIN AS IS, ASSUMED TO BE TO HIGHWAY/LAND (PAVED/UNPAVED)
- PROPOSED NON RETURN VALVE
- RG --- PROPOSED ROAD GULLY
- RWP --- RAIN WATER PIPE
- SVP --- SOIL VENT PIPE
- RE --- RODDING EYE
- BD --- BACKDROP MANHOLE
- AJ --- ARMSTRONGS JOINT

DRAINAGE NOTES:

1. ALL SWMPs AND SVPs TO ARCHITECTS/ENGINEER LAYOUT.
2. REFER TO ARCHITECTS/ENGINEER DRAWINGS FOR LOCATIONS.
3. ALL COVER & INVERT LEVELS TO BE CONFIRMED ON SITE.
4. ALL BELOW GROUND DRAINAGE IS SUBJECT TO CONFIRMATION OF INTERNAL SVP AND RWP LOCATIONS BY MICE CONSULTANT.
5. ALL EXISTING DRAINAGE THAT IS TO REMAIN IS TO BE CCTV SURVEYED TO ENSURE IT IS FIT FOR PURPOSE.
6. ANY PIPES PASSING THROUGH FOUNDATIONS TO HAVE RODDING JOINTS.
7. ALL EXTERNAL DRAINAGE AND GULLIES TO LANDSCAPE ARCHITECTS DETAILS AND SPECIFICATION.
8. ALL ARMSTRONGS JOINT CONNECTIONS TO MAIN SEWER TO HAVE BACKDROPS AS REQUIRED.

MANHOLE NOTES:

1. RODDING PIPES: NOMINAL LENGTH 600mm.
2. BE USED AT ENTRY POINT TO MANHOLES.
3. ALL MANHOLES AND ACCESS POINTS ON SEWERS TO BE IN ACCORDANCE WITH BS EN 12201:2017.
4. ALL BENCHING TO BE CONSTRUCTED IN ACCORDANCE WITH BS EN 12201:2017.
5. ALL MANHOLE COVERS AND FRAMES TO COMPLY WITH BS EN 124:2015 AND HAVE THIRD PARTY CERTIFICATIONS AVAILABLE ON REQUEST.
6. ALL MANHOLE COVERS AND FRAMES TO BE CLASS 4 AND ON ALL TRAFFIC AREAS UNLESS OTHERWISE STATED.
7. ALL MANHOLE COVERS AND FRAMES SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.
8. WALL THICKNESS Varies WITH MANHOLE DEPTH. CONFIRM WITH ENGINEER FOR WALL THICKNESS.
9. CHAMBER WALLS COVER LAB. INLAND SLAB FOR P.C.C. CHAMBERS WHERE REQUESTED SHALL BE CONSTRUCTED IN PRECAST CONCRETE TO BS 91:2014.
10. MANHOLES CONSTRUCTED FROM ENGINEERING BRICK WILL BE CONSIDERED AS AN ACCEPTABLE ALTERNATIVE SUBJECT TO APPROVAL. MANHOLES AND INSPECTION CHAMBERS TO COMPLY WITH MINIMUM DIMENSIONAL REQUIREMENTS OF TABLE M&T & TABLE M&T BS EN 12201:2017 AND APPROVED DOCUMENT H OF THE BUILDING REGULATIONS.

- DESIGN NOTES**
1. SUBS DESIGN BASED ON 1 IN 100 YR STORM + 30%.
 2. DRAIN POINTS AND LOCATIONS TO BE CONFIRMED BY ARCHITECT.
 3. CONTRACTOR TO ESTABLISH LOCATIONS OF ALL EXISTING SERVICES PRIOR TO COMMENCING.
 4. EXISTING TREES TO BE PROTECTED WHERE EXCAVATIONS RUN CLOSE.
 5. APPROVAL TO BE GAINED FROM TWO FOR CONNECTIONS TO SEWERS AND DISCHARGE RATES.

NOTE:
ALL FOUL AND SURFACE WATER CONNECTIONS SUBJECT TO APPROVALS FROM THAMES WATER

STORM WATER MANHOLE SCHEDULE

MH REF	Cover Ld. (m)	Invert Ld. (m)	Load Class	Manhole Depth (m)	Internal MH DIA (m)	Easting (To Centre)(m)	Northing (To Centre)(m)
SW01	92.400	91.950	A15	0.450	0.450	528432.314	189176.813
SW02	92.400	91.774	A15	0.626	0.450	528420.867	189172.440
SW03	92.400	90.763	A15	1.637	0.600	528412.713	189171.447
SW04	91.300	90.700	D400	0.600	0.450	528406.908	189168.532
SW05	91.300	89.684	D400	1.616	1.000	528410.085	189144.124
SW06	91.300	90.800	D400	0.500	0.450	528392.870	189168.601
SW07	91.300	90.697	C250	0.603	0.450	528403.172	189169.507
SW08	91.300	90.637	D400	0.663	0.450	528406.662	189145.772
SW09	91.350	90.600	B125	0.750	0.450	528396.275	189120.210
SW10	91.350	90.476	B125	0.874	0.450	528401.382	189132.165
SW11	91.350	90.600	B125	0.750	0.450	528407.403	189120.034
SW12	91.350	90.478	B125	0.872	0.450	528407.542	189132.161
SW13	91.300	89.400	C250	1.900	0.450	528406.476	189135.662
SW14	90.335	89.635	B125	0.700	0.450	528415.715	189143.524
SW15	90.634	89.684	B125	0.950	0.450	528454.302	189143.648
SW16	90.731	87.616	B125	3.116	1.000	528442.026	189144.553
SW17	88.850	87.525	B125	1.325	0.600	528435.238	189150.472
SW18	88.850	87.450	B125	1.400	0.600	528434.385	189156.716
SW19	88.100	87.560	B125	1.540	0.600	528438.057	189162.747
SW20	88.850	87.405	B125	1.445	0.600	528417.632	189154.415
SW21	88.100	87.833	B125	0.267	0.450	528432.117	189153.525
SW22	88.700	87.790	B125	0.910	0.450	528419.665	189152.225
SW23	91.300	89.900	D400	1.400	0.600	528408.226	189153.136
SW24	91.370	89.703	D400	1.667	0.600	528405.711	189170.455
SW A	91.300	87.480	C250	3.820	1.200	528394.161	189151.484
SW B	91.300	87.436	C250	3.864	1.200	528392.914	189160.203
SW C	91.300	87.393	C250	3.907	1.200	528391.537	189168.548
SW D	91.300	83.675	C250	7.625	1.200	528394.497	189170.492
SWP1	89.100	87.100	C250	---	---	528415.127	189154.088

MH REF	Cover Ld. (m)	Invert Ld. (m)	Load Class	Manhole Depth (m)	Internal MH DIA (m)	Easting (To Centre)(m)	Northing (To Centre)(m)
FW01	89.100	87.475	A15	1.625	0.600	528441.691	189149.901
FW02	89.100	87.425	A15	1.675	0.600	528440.073	189155.082
FW03	89.100	87.470	A15	1.630	0.600	528442.411	189159.451
FW04	89.100	87.365	A15	1.735	0.600	528436.155	189155.082
FW05	89.100	83.300	A15	5.800	1.200	528438.172	189160.474
FW06	89.100	87.320	A15	1.780	0.600	528434.918	189159.518
FW07	89.100	87.380	A15	1.720	0.600	528429.070	189158.715
FW08	89.100	87.440	A15	1.660	0.600	528423.163	189157.913
FW09	89.100	87.500	A15	1.600	0.600	528417.255	189157.110
FW10	91.300	86.500	D400	2.800	1.000	528406.610	189155.665
FW11	91.300	86.970	D400	4.330	0.600	528405.463	189163.833
FW12	91.300	90.020	D400	1.280	0.600	528404.759	189166.641
FW13	92.400	91.550	A15	0.850	0.450	528449.638	189176.819
FW14	92.400	91.508	A15	0.892	0.450	528446.478	189176.255
FW15	92.400	91.404	A15	0.996	0.450	528435.080	189176.841
FW16	92.400	91.280	A15	1.120	0.450	528422.780	189173.169
FW17	92.400	90.090	D400	2.310	1.000	528411.138	189171.803
FW18	91.350	90.145	A15	1.205	0.450	528401.282	189132.384
FW19	91.300	90.000	D400	1.300	1.000	528408.257	189144.117
FW20	91.300	89.938	A15	1.362	0.600	528407.414	189150.318
FW21	91.350	90.120	D400	1.230	0.450	528406.532	189132.161

BELOW GROUND DRAINAGE LAYOUT

SCALE 1:100

DESIGN NOTES
1. SUDS DESIGN BASED ON 1 IN 100 YR STORM + 30%.
2. DRAIN POINTS AND LOCATIONS TO BE CONFIRMED BY ARCHITECT.
3. CONTRACTOR TO ESTABLISH LOCATIONS OF ALL EXISTING SERVICES PRIOR TO COMMENCING.
4. EXISTING TREES TO BE PROTECTED WHERE EXCAVATIONS RUN CLOSE.
5. APPROVAL TO BE GAINED FROM TFW FOR CONNECTIONS TO SEWERS AND DISCHARGE RATES.

NOTE:
ALL FOUL AND SURFACE WATER CONNECTIONS
SUBJECT TO APPROVALS FROM THAMES WATER

STORM WATER MANHOLE SCHEDULE									
MH REF	Cover LVL (m)	Invert LVL (m)	Load Class	Manhole Depth (m)	Internal MH DIA (m)	Easting (To Centre)(m)	Northing (To Centre)(m)		
SW01	92.400	91.960	A15	0.450	0.450	528436.314	189174.813		
SW02	92.400	91.774	A15	0.626	0.450	528420.867	189172.440		
SW03	92.400	90.763	A15	1.637	0.600	528412.713	189171.447		
SW04	91.300	90.700	D400	0.600	0.450	528406.908	189168.932		
SW05	91.300	89.664	D400	1.636	1.000	528410.095	189164.124		
SW06	91.300	90.800	D400	0.500	0.450	528392.810	189168.601		
SW07	91.300	90.697	C250	0.603	0.450	528403.172	189169.507		
SW08	91.300	90.637	D400	0.663	0.450	528406.662	189145.772		
SW09	91.350	90.600	B125	0.750	0.450	528396.275	189120.210		
SW10	91.350	90.476	B125	0.874	0.450	528401.382	189132.465		
SW11	91.350	90.600	B125	0.750	0.450	528407.403	189120.034		
SW12	91.350	90.478	B125	0.872	0.450	528407.542	189132.161		
SW13	91.300	90.400	C250	0.900	0.450	528406.476	189135.662		
SW14	90.325	89.635	B125	0.700	0.450	528416.715	189143.624		
SW15	90.634	89.684	B125	0.950	0.450	528454.302	189143.648		
SW16	90.731	87.616	B125	3.115	1.000	528442.006	189144.553		
SW17	88.850	87.525	B125	1.325	0.600	528435.238	189150.472		
SW18	88.850	87.490	B125	1.360	0.600	528434.385	189156.716		
SW19	89.100	87.560	B125	1.540	0.600	528438.057	189162.747		
SW20	88.850	87.405	B125	1.445	0.600	528417.632	189154.415		
SW21	88.700	87.833	B125	0.867	0.450	528432.117	189153.925		
SW22	88.700	87.799	B125	0.901	0.450	528416.665	189152.225		
SW23	91.300	89.900	D400	1.400	0.600	528408.226	189153.136		
SW24	91.370	89.703	D400	1.667	0.600	528406.711	189170.455		
SW A	91.300	87.480	C250	3.820	1.200	528394.161	189151.484		
SW B	91.300	87.435	C250	3.864	1.200	528392.914	189160.203		
SW C	91.300	87.393	C250	3.907	1.200	528391.537	189168.448		
SW D	91.300	83.675	C250	7.625	1.200	528394.497	189170.492		
SWP1	89.100	87.100	C250			528415.127	189154.088		

FOUL WATER SCHEDULE									
MH REF	Cover LVL (m)	Invert LVL (m)	Load Class	Manhole Depth (m)	Internal MH DIA (m)	Easting (To Centre)(m)	Northing (To Centre)(m)		
FW01	89.100	87.475	A15	1.625	0.600	528441.691	189149.901		
FW02	89.100	87.425	A15	1.675	0.600	528442.073	189155.082		
FW03	89.100	87.470	A15	1.630	0.600	528442.411	189159.451		
FW04	89.100	87.365	A15	1.735	0.600	528436.155	189155.082		
FW05	89.100	83.300	A15	5.800	1.200	528438.172	189160.474		
FW06	89.100	87.320	A15	1.780	0.600	528434.978	189159.518		
FW07	89.100	87.380	A15	1.720	0.600	528429.070	189158.715		
FW08	89.100	87.440	A15	1.660	0.600	528423.163	189157.913		
FW09	89.100	87.500	A15	1.600	0.600	528417.255	189157.110		
FW10	91.300	88.500	D400	2.800	1.000	528406.610	189155.665		
FW11	91.300	89.910	D400	1.300	0.600	528405.463	189163.833		
FW12	91.300	90.020	D400	1.280	0.600	528404.759	189166.641		
FW13	92.400	91.550	A15	0.850	0.450	528449.638	189176.819		
FW14	92.400	91.508	A15	0.892	0.450	528445.478	189176.255		
FW15	92.400	91.404	A15	0.996	0.450	528435.090	189174.841		
FW16	92.400	91.280	A15	1.120	0.450	528422.780	189173.169		
FW17	92.400	90.090	D400	2.310	1.000	528411.138	189171.803		
FW18	91.350	90.145	A15	1.205	0.450	528400.282	189132.384		
FW19	91.300	90.000	D400	1.300	1.000	528406.267	189144.117		
FW20	91.300	89.938	A15	1.362	0.600	528407.414	189150.318		
FW21	91.350	90.120	D400	1.230	0.450	528406.532	189132.161		

LOWER GROUND DRAINAGE LAYOUT
SCALE 1:100

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3. ALL DIMENSIONS ARE IN MILLIMETRES, UNLESS NOTED OTHERWISE. TBC ON SITE.
4. ALL LEVELS ARE IN METRES RELATED TO ORDNANCE DATUM. TBC ON SITE.
5. DRAWINGS ARE NOT TO BE SCALED.
6. ALL TEMPORARY WORKS TO CONTRACTORS DETAILS.
7. CONTRACTOR TO APPROVE ALL SET OUT INFORMATION PRIOR TO CONSTRUCTION.

- GENERAL DRAINAGE NOTES:
1. ALL NEW DRAINAGE TO BE INSTALLED IN ACCORDANCE WITH BS EN 12201.
 2. INVERT LEVELS OF EXISTING DRAINAGE (WHERE APPLICABLE) TO BE CONFIRMED BEFORE WORKS COMMENCE.
 3. ALLOW FOR CARRYING OUT CCTV SURVEY AFTER WORKS ARE COMPLETE TO VERIFY DRAINAGE SYSTEM CARRY OUT A TEST ON ALL NEW LINES.
 4. ANY DISCREPANCIES TO BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
 5. REFER TO DRAWING D401-261 FOR TYPICAL MANHOLE DETAILS.
 6. ALL FOUL WATER PIPES TO BE 150mm DIAMETER AT ALL FALLS UNLESS OTHERWISE STATED.
 7. ALL SURFACE WATER PIPES TO BE 100mm DIAMETER AT ALL FALLS UNLESS OTHERWISE STATED.
 8. ALL PIPES TO HAVE RODDING EYES & BACKCROPS.
 9. MINIMUM COVER TO TOP OF ALL PIPES & MANHOLES TO BE 0.3m UNLESS OTHERWISE STATED.
 10. FOR FURTHER DRAINAGE LAYOUTS AND INFORMATION WATER TOWER CONSULTANTS DRAWINGS.
 11. INTERNAL BELOW GROUND DRAINAGE TO BE PVC UPE PIPE AND FITTINGS.
 12. ALL MANHOLES TO BE 1000mm DIAMETER (INTERNAL) PRECAST BRICK UNLESS OTHERWISE STATED.
 13. ALL INSPECTION CHAMBERS TO BE 800mm DIAMETER (INTERNAL) WITH 200mm CONCRETE BASE.
 14. ALL DRAINAGE TO BE UP TO 100mm DIAMETER.
 15. EXTERNAL DRAINAGE TO BE 100mm DIAMETER (LANDSCAPE ARCHITECT DETAILS).
 16. ALL GULLIES TO BE TYPICAL.
 17. ALL PIPES NOT TO CROSS ROAD OR CAPS TO HAVE ROOF JOISTS AT ENDS AND PIPES TO BE ELEVATED WITHIN CAPS. ALTERNATIVELY STEEL PIPES CAN BE USED WITHIN ROAD CAPS.
 18. ALL SWAMP LOCATIONS TO BE DETERMINED BY THE ARCHITECT.
 19. ALL EXISTING AND PROPOSED DRAINAGE TO BE IN ACCORDANCE WITH TECHNICAL GUIDANCE DOCUMENT 1.
 20. MULTIPLE OUTLETS FROM ACD TO REDUCE RISK OF LOCALISED FLOODING ACCESS TO ALL TOWNERS OUTLETS.

DRAINAGE LEGEND

- BOUNDARY LINE
- EXISTING FOUL WATER SEWER
- EXISTING SURFACE WATER SEWER
- PROPOSED SURFACE WATER PIPE
- PROPOSED FOUL WATER PIPE
- PROPOSED PERFORATED PIPE
- PROPOSED FILTER DRAIN
- PROPOSED PUMPED SURFACE WATER SEWER
- EXISTING SEWER TO BE ABANDONED & REMOVED & DIVERTED
- EXISTING SEWER TO BE ABANDONED & REMOVED & DIVERTED
- THAMES WATER SURFACE/FOUL WATER MANHOLES ACCESS COVER TO BE IDENTIFIED WITH DOUBLE SEALED RECESSED MANHOLE COVER
- PROPOSED 1200mm DIA FOUL SURFACE INSPECTION CHAMBERS ACCESS COVER TO BE IDENTIFIED WITH DOUBLE SEALED RECESSED MANHOLE COVER
- FOUL SURFACE WATER PUMPING STATIONS
- ACD CHANNEL TO LANDSCAPE ARCHITECTS DETAILS
- PROPOSED DETENTION BASIN FOR EMERGENCY STORAGE (90m³ WITH DEPTH 0.4m)
- PROPOSED BIORETENTION AREA
- PROPOSED PERVIOUS PAVEMENT WITH SUB-BASE ATTENUATION OF 280m³ WITH DEPTH 0.35m (VOLUME 280m³)
- AREA TO DRAIN AS IS, ASSUMED TO BE TO HIGHWAY LAND (PAVED AND GRAVEL)
- PROPOSED NON RETURN VALVE
- RG --- PROPOSED ROAD GULLY
- RWP --- RAIN WATER PIPE
- SVP --- SOIL VENT PIPE
- RE --- RODDING EYE
- BD --- BACKCROP MANHOLE
- AJ --- ARMSTRONGS JOINT

- DRAINAGE NOTES:
1. ALL ENRPS AND SVPS TO ARCHITECTS/ENGINEER LAYOUT.
 2. REFER TO ARCHITECTS/ENGINEER DRAWINGS FOR LOCATIONS.
 3. ALL COVER & INVERT LEVELS TO BE CONFIRMED ON SITE.
 4. ALL BELOW GROUND DRAINAGE IS SUBJECT TO CONFIRMATION OF INTERNAL SVP AND RWP LOCATIONS BY MICE CONSULTANT.
 5. ALL EXISTING DRAINAGE THAT IS TO REMAIN IS TO BE CCTV SURVEYED TO ENSURE IT IS FIT FOR PURPOSE.
 6. ANY PIPES PASSING THROUGH FOUNDATIONS TO HAVE RODDING JOINTS.
 7. ALL EXTERNAL DRAINAGE AND GULLIES TO LANDSCAPE ARCHITECTS DETAILS AND SPECIFICATION.
 8. ALL ARMSTRONGS JOINT CONNECTIONS TO MAIN SEWER TO HAVE BACKCROPS AS REQUIRED.

- MANHOLE NOTES:
1. RODDING PIPES: NOMINAL LENGTH 600mm.
 2. ALL MANHOLES AND ACCESS POINTS ON SEWERS TO BE IN ACCORDANCE WITH BS EN 12201.
 3. ALL BENCHING TO BE CONSTRUCTED IN ACCORDANCE WITH BS EN 12201.
 4. ALL MANHOLE COVERS AND FRAMES TO COMPLY WITH BS EN 124-2015 AND HAVE THIRD PARTY CERTIFICATIONS AVAILABLE ON REQUEST.
 5. ALL MANHOLE COVERS AND FRAMES TO BE CLASS 4 AND ON ALL TRAFFIC AREAS UNLESS OTHERWISE STATED.
 6. ALL MANHOLE COVERS AND FRAMES SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.
 7. WALL THICKNESS VARYING WITH MANHOLE DEPTH. CONFIRM WITH ENGINEER FOR WALL THICKNESS.
 8. CHAMBER WALLS CONCRETE ON MANHOLE SLAB FOR P.C.C. CHAMBERS WHERE REQUESTED SHALL BE CONSTRUCTED IN PRECAST CONCRETE TO BS EN 124-2015.
 9. MANHOLES CONSTRUCTED FROM ENGINEERING BRICK WILL BE CONSIDERED AS AN ACCEPTABLE ALTERNATIVE SUBJECT TO APPROVAL. MANHOLES AND INSPECTION CHAMBERS TO COMPLY WITH MINIMUM DIMENSIONAL REQUIREMENTS OF TABLE M41 & TABLE M42 BS EN 12201 AND APPROVED DOCUMENT 11 OF THE BUILDING REGULATIONS.

REV	DATE	DESCRIPTION	BY	APP
P02	24.04.23	Preliminary Layout For Design Team Review	VH	RS
P01	10.02.23	Preliminary Layout For Design Team Review	VH	RS

Cranwood House

Lower Ground Drainage Layout

CLIENT: Formation D&B Ltd

TITLE: Lower Ground Drainage Layout

ENGINEERING AND ENVIRONMENTAL CONSULTANTS

CORE | TRAIL | LONDON | LINCOLN

DRAWN: VH CHECKED: DH APPROVED: RJ

PROJECT NUMBER: 23453 DATE: 02/02/23 SCALE: B4 L: 1:100

STATUS: FOR INFORMATION S2

DRAWING NUMBER: CRA-MWP-ZZ-LG-DR-S-2100 REV: P02