

Project Name

Avondale Drive Estate

Document Title

Illustrative Demolition and Phasing Strategy (including Demolition and Construction Method Statement)

Client:

London Borough of Hillingdon

Date:

06 December 2021

Job No:

LBHIL:3570

Introduction	3
Proposed Development	3
Illustrative Demolition and Phasing Strategy.....	4
Phase 1a	5
Phase 1b	6
Phase 2	6
Demolition and Construction Method Statement.....	7
1. Health and Safety	7
1.1. Principal Contractor Requirements.....	7
1.2. Risk Assessment Method Statement	7
1.3. Smoking Policy	8
1.4. Pest Control.....	8
1.5. Asbestos	8
1.6. Risk from Falls	8
1.7. Existing Services	8
1.8. Vehicles to be used on Site	9
1.9. Other Considerations	9
1.10. Public Community Strategy and Complaints Procedure	9
1.11. Complaints	9
2. Elevated Noise Levels.....	10
3. Elevated Vibration Levels.....	11
4. Reporting Measures.....	11
5. Operating Hours.....	11
6. Site Welfare and Site Offices	12
7. Controls to Limit Noise and Vibration.....	12
7.1. Site Preparation, Design and Layout.....	12
7.2. Operations.....	13
7.3. Monitoring	13
7.4. Plant and Equipment.....	13
8. Dust Suppression, Mitigation and Avoidance Measures	14
8.1. Introduction	14
8.2. Construction Regulations.....	15
9. Fuel and Chemical Storage.....	15
10. Fire and Emergency Arrangements.....	16
10.1. Hospital	16
10.2. On-Site Emergency response procedures.....	16
10.3. Fire safety.....	17
11. Traffic Management.....	19

11.1. General..... 19

11.2. Site Access..... 19

11.3. Loading and Unloading of Plant and Materials..... 19

11.4. Storage of Plant and Materials 19

11.5. Boundary Hoarding 20

11.6. Lighting..... 20

11.7. Preventative Measures for Highway Debris (Wheel Washing)..... 20

11.8. Waste Management..... 20

11.9. Pedestrian Access..... 21

11.10. Vehicle Movements and Environmental Considerations..... 21

Introduction

The purpose of this document is to detail the illustrative demolition and phasing strategy for Avondale Drive Estate Development.

The document will set out and explain the illustrative phasing strategy with reference to the Phase plans outlined in the planning submission. The document will detail securing vacant possession of the phases, demolition and remediation works, investigative works required and set out how the construction will be undertaken whilst retaining access to other phases where residential occupiers will remain.

A Demolition and Construction Method Statement is also required by the Local Authority in order to support the Hybrid Planning Application being submitted in relation to the proposed development at Avondale Drive Estate. The second part of this document sets out various statements and methodologies pertaining to this and has been prepared for the purpose of outlining how the proposed development works will avoid, minimise or mitigate effects on the environment and surrounding area.

Proposed Development

The proposals are for a development with description as follows:

“Development in outline (with all matters reserved) for residential floorspace (Class C3) to comprise: demolition of all existing buildings and structures; erection of new buildings; new pedestrian and vehicular accesses; associated amenity space, open space, landscaping; car and cycle parking spaces; plant, refuse storage, servicing area and other works incidental to the proposed development; and

Detailed planning consent for Block A comprising 30 residential units (Class C3); new pedestrian access; associated amenity space and landscaping; cycle parking, refuse storage, and other associated infrastructure.”

The proposals involve the phased demolition of the estate to provide new affordable and private sale homes within a regenerated estate environment. The emerging proposals seek to provide up to 240 residential dwellings, an uplift of 96 units, within residential blocks ranging from 2 storeys to 10 storeys in height, along with improved landscaping and public realm. Existing residents are intended on being rehoused within the proposed units.

This Application is being submitted as a hybrid proposal which seeks permission for development of 240 units overall. It comprises elements in detail (the Detailed First Phase) and in outline (the Outline Area). The detailed element comprises 30 units and the outline component (appearance, landscaping, layout and scale and access reserved) for the development of the remaining 210 units including car and cycle parking and open space.

Illustrative Demolition and Phasing Strategy

The development is proposed to be delivered across multiple phases as shown in the diagram below

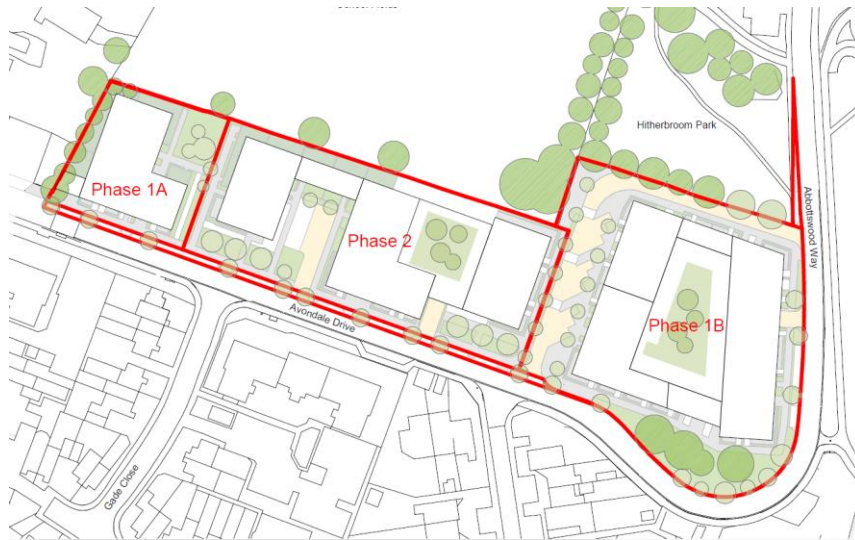


Fig 1: Illustrative Phasing Plan

The table below shows the proposed development timescales.

Proposed Development Phase		Start date	Finish date
Construction of Phase 1a (Block A)		Autumn 2022	Summer 2024
Outline Area	Phase 1b (Blocks E - H)	Spring 2023	Spring 2025
	Phase 2 (Blocks B, C and D)	Spring 2025	Summer 2027

Phase 1a

Vacant position of Phase 1a will be achieved in the summer of 2022 as it is a garages only site and requires no decant of residents. Demolition of the garages including any asbestos surveys and removal will commence almost immediately.

The demolition phases are shown in the diagram below.



Fig 2: Illustrative Demolition Phasing Plan

Subject to further ground investigations there may be remediation works required prior to commencement of foundations.

It is not envisaged that significant service or utilities diversion is required to Phase 1 although this is subject to further consultation with statutory authorities and detailed design. Modifications to the water and drainage infrastructure will be required.

Once construction of Phase 1a begins access to and from the site will be maintained in accordance with the Section 6 of the Construction Logistics Plan noting that vehicular and pedestrian access to the remaining residential occupiers of the estate in the later phases will be maintained throughout.

Phase 1a construction works includes a temporary access road which is detailed in the Construction Logistics Plan.

Phase 1a includes the provision of a substation which will serve Phase 1a and later phases. The completion of the substation will need to be managed so that it is live for the completion of the new dwellings. Some temporary supplies may be required to facilitate this.

Phase 1b

The completion of Phase 1a will enable the decant of the Phase 1b demolition area shown in Fig 2 above which consists primarily of Wellings House and the neighbouring car parking area. Once vacant possession is secured similar enabling works will be required to Phase 1a. This will include removal of any asbestos, disconnection of services, demolition of buildings and potential further ground investigations.

There are 2 No BT Poles within the Phase 1b boundary and will need to be reviewed when detail proposals are developed for this phase. Vodafone also have a fibre cable which runs along Abbottswood Way which appears to be located within the Phase 1b boundary. These will need to be reviewed when detailed proposals are carried out for this phase. It is not envisaged that further significant service or utilities diversion is required to Phase 1b although this is subject to further consultation with statutory authorities and detailed design. Modifications to the water and drainage infrastructure will be required.

Once construction of Phase 1b begins access to and from the site will be maintained in accordance with the Construction Logistics Plan noting that vehicular and pedestrian access to the remaining residential occupiers of the estate in the later phases will be maintained throughout.

Phase 2

The completion of Phase 1b will enable the decant of the Phase 2 demolition area shown in Fig 2 above. This consists primarily of Fitzgerald House, Glenister House and the car parking area between the two blocks. Once vacant possession is secured similar enabling works will be required to previous Phases. This will include removal of any asbestos, disconnection of services, demolition of buildings and potential further ground investigations.

It is not envisaged that any significant service or utilities diversion will be required to Phase 2 although again noted this is subject to further consultation with statutory authorities and detailed design. Modifications to the water and drainage infrastructure will be required.

Once construction of Phase 2 begins access to and from the site will be maintained in accordance with the Construction Logistics Plan noting that vehicular and pedestrian access to the remaining residential occupiers of the estate in the later phases will be maintained throughout.

Demolition and Construction Method Statement

The Demolition and Construction Method Statement sets out various statements and methodologies pertaining to the development and has been prepared for the purpose of outlining how the proposed development works will avoid, minimise or mitigate effects on the environment and surrounding area.

1. Health and Safety

The Principal Contractor will designate the person(s) who will have overall responsibility for Health and Safety on site. A designated person will be on site at all times while operations are taking place, and have the necessary authority to initiate changes to work practices and/or mitigation as appropriate. The Health and Safety Executive (HSE) has issued Health and Safety requirements for all construction projects within the document The Construction (Design and Management) Regulations 2015. Reference will be made to this document prior to and during all construction activities. This Health and Safety note is for pre-construction guidance and is not intended as a detailed Construction Phase Plan.

1.1. Principal Contractor Requirements

The Principal Contractor will ensure that all obligations identified by the Construction (Design & Management) Regulations 2015 and other applicable legislation are complied with. Notably:

- To develop a Construction Phase Health & Safety plan;
- Carry out site inductions to all contractors and operators. These will include both site specific and industry standard rules and regulations;
- Project safety information will be displayed at site access and egress points, as well as site offices and welfare areas. This will include PPE requirements and details of site Health and Safety managers; As required, restricted site access to allow only authorised persons in by use of site security;
- Obtain risk assessments and method statements from all contractors engaged to work on the project, particularly where they may impact on others;
- Maintain the Safety Notice Board and the display of all Statutory Notices;
- Procure the appointment of competent designers or contractors as far as is reasonably practicable through the use of the supply chain management process; Monitor the health and safety performance of persons and companies working on the project;
- Maintain adequate levels of welfare facilities for the work force, including contractors; and
- Encourage an open door policy and blame free safety culture in the reporting of hazards and useful work practices. The statutory requirement of all operatives to look after their own safety and not engage in activities which will put others at risk /cause them harm will be underlined.

1.2. Risk Assessment Method Statement

The Principal Contractor will prepare a Risk Assessment Method Statement (RAMS) prior to commencement of any site works. All personnel who will be on site must be made aware of the RAMS through a formal induction. A copy of the RAMS will be available in the site office for anyone to access and refer to at any moment.

1.3. Smoking Policy

In accordance with current UK legislation, a 'no smoking' policy must be established. Any designated safe open air locations where smoking is allowed will be of a low fire risk design, away from any combustible or flammable materials and provided with metal ashtrays filled with sand. Smoking rules will be brought to the attention of all workers and visitors to the site. Appropriate signs will be displayed, particularly in high-risk or communal areas such as canteens and site access points. Contractors will be advised of the health risk associated with smoking and material will be displayed which encourages giving up smoking.

1.4. Pest Control

As well as being a threat to health and wellbeing, rats, mice and birds can have serious structural and financial impact on buildings such as damaging thermal insulation, electrical wiring, drainage systems and other structural components. The Principal Contractor will produce a method statement on how pest control will be controlled during the construction works.

1.5. Asbestos

Should asbestos be identified on site, appropriate asbestos mitigation measures (i.e. wearing appropriate PPE/RPE, damping down of soils during excavation and stockpiling, and covering open excavations and stockpiled soils with plastic sheeting) will be employed during demolishment, groundworks and construction in order to ensure that workers are not exposed to asbestos fibres.

1.6. Risk from Falls

Falls from height are one of the biggest causes of workplace fatalities and injuries. The most common causes are falls from ladders and through fragile roofs. The Principal Contractor must make sure that the work is properly planned, supervised and carried out by a competent person before any works is undertaken including the use of harnesses should the contractors RAMS specify.

1.7. Existing Services

Any area where live cables are suspected must be fully scanned with a CAT and marked showing their position. A safe digging area from any services located will be established before any excavations are undertaken. When the excavation is taking place regular CAT scanning of the excavation must take place. When near to any services hand digging must take place. All services on site will be treated as live unless they have been confirmed as dead.

1.8. Vehicles to be used on Site

The number of vehicles to be used on site is not currently known, however, given the relatively small area of the site, the number of vehicles on site should be kept to a minimum depending on the requirements of the site at any time. This can be achieved by off-hiring or redeploying of vehicles that will not be in use for an extended period of time. Site vehicles are to be operated by trained operatives only with banksman accompaniment used as appropriate. Only roadworthy vehicles are to be used on public highways. The use of construction vehicles outside the site must be avoided in first instance however, should this be required, the time off site must be kept to a minimum with adequate supervision. It is recommended that tracked machinery should be rubber tracked to avoid the risk of damage to public roads in the event that such vehicles are to be tracked off site for any reason.

1.9. Other Considerations

Materials which detail other aspects of personal health, safety and welfare will be made available to all site personnel. These could include: Mental health awareness and a contact number for Samaritans; Hydration level indication through urine colour; Recommendation to use adequate sun protection (sun cream); and, promoting a positive health and safety culture, including incident reporting. The HSE may attend site at any time and request to see all health and safety documentation, to verify that all safe working practices are being adhered to, and they are entitled to stop all works if their findings are unsatisfactory.

1.10. Public Community Strategy and Complaints Procedure

Liaison with local residents and businesses who may be affected by construction works is essential. The local residents and businesses will be informed of the nature of the works, proposed hours of work and their expected duration.

Communication to local residents and businesses will include publicity, inconvenience letters, including the name and telephone number of a main contact which will also be displayed on the site hoardings. This contact person will be able to give further information to the caller and deal with any complaints or emergencies that may arise at any time.

1.11. Complaints

The Principal Contactor should ensure that a staffed telephone enquiry line is maintained at all times when site works are in progress to deal with enquiries and complaints. The telephone number shall be publicised widely in the local community affected by the works.

Smoking (outside of the designated smoking area), bad language and unnecessary shouting rules should be brought to the attention of all workers and visitors to the site. Appropriate signs should be displayed, particularly in high-risk or communal areas such as canteens and site access points.

Every morning all subcontractors will receive briefing with potential issues related to this mater and every week all subcontractors will receive and sign for tool box talks.

Should noise, vibration and dust complaints arise from the building works, these complaints must be recorded in a complaint's register and made available to the Local Authority, if requested. The complaint register shall provide information on day, time, details of complaint, details of monitoring carried out and any additional mitigation works.

Should complaints be received concerning works, then all works being the cause of complaint must cease, until such time as further agreement to work is negotiated.

All site staff are to be regularly briefed regarding the complaints procedure.

2. Elevated Noise Levels

Any elevated levels of noise identified by the complaints procedure should be mitigated as follows:

- The Site Manager will investigate the source of the noise and carry out a range of checks at the identified source of the elevated levels if it is found to be originating from within the Site. As part of these checks the Site Manager will consider the need for quantitative noise monitoring;
- All noise monitoring should be completed with due regard paid towards the methodology prescribed in British Standard 5228+A1 (2014) (BS5228): 'Code of practice for noise and vibration on construction and open sites – Part 1: Noise'. Noise monitoring locations should be agreed with the Local Planning Authority;
- The results of any monitoring will determine whether construction activities are causing an unacceptable noise impact at the receptor location; and,
- The Site Manager will then ensure that construction activities are being undertaken in accordance with the manufacturer's specifications, to the requirements set out in this Noise and Vibration Management Plan and ensure that any improvements required to minimise the noise levels are made.

To further mitigate the elevated noise levels, the following actions shall also be considered:

- The modification of equipment identified as generating excess noise, or replacement;
- Installation of temporary barriers around the noise generating equipment/processes; and
- Once the improvements identified by the Site Manager have been completed, the manager will commission a further set of monitoring to ensure that the improvements have met the required standard. If the noise rating levels are still not being met then the manager will repeat the request for improvements and subsequent monitoring until the noise limits are achieved.

If operational failings are identified, the re-training of employees will take place to ensure that all employees operate to the required standards.

The Site Manager or Construction Director will ensure a close liaison with the Local Authority throughout all stages of the process following an identified elevated noise level.

3. Elevated Vibration Levels

Any elevated levels of vibration identified by the complaints procedure, either through human perception or measurement, should be mitigated as follows:

- The Site Manager will investigate the source of the vibration and carry out a range of checks at the identified source of the elevated levels if it is found to be originating from within the Site. As part of these checks the Site Manager will consider the need for quantitative vibration monitoring;
- All vibration monitoring should be completed with due regard paid towards the methodology prescribed in British Standards 6472-1:2008 'Guide to evaluation of human exposure to vibration in buildings. Part 1: Vibration sources other than blasting' and 5228+A1 (2014) (BS5228): 'Code of practice for noise and vibration on construction and open sites – Part 2: Vibration'. Vibration monitoring locations should be agreed with the Local Planning Authority and should be as close as possible to the garden/building envelope of the complaints property;
- The results of any monitoring will determine whether construction activities are causing an unacceptable vibration impact at the receptor location. Real-time results will be required in the event of any structural damage criteria being met or exceeded during operations; and
- The Site Manager will then ensure that construction activities are being undertaken in accordance with the manufacturer's specifications, to the requirements set out in this Noise and Vibration Management Plan and ensure that any improvements required to minimise the vibration levels are made.

4. Reporting Measures

In the event of elevated levels of noise being identified, the event will be reported into an appropriate management system by a member of operational staff, i.e. the Construction Director. The completed form should then be distributed for review at operational, management and health and safety meetings.

If any noise or vibration complaints are reported then these will be investigated immediately with the relevant contractor.

Complaints will be reported to the Environmental Protection Team within 24 hours by telephone and/or email, investigated and where appropriate measurements taken and where necessary mitigation methods implemented or work practices modified.

The results of the investigation, along with details of any mitigation methods implemented or work practice that has been modified and how complainants have been kept informed will also be sent to Environmental Protection Team as soon as possible.

All site staff are to be regularly briefed regarding the complaints procedure.

5. Operating Hours

Given the close proximity of residential units to the site, the hours of work should as good practice be restricted to:

- Monday: Friday: 08.00 – 18.00;
- Saturday: 09.00 – 14.00; and
- Sunday and Bank Holidays: No work.

Any noisy operations outside the standard hours cannot be undertaken without prior written approval of the Local Authority. The permitted times of working may be reduced in the case of noisy schedules.

All vehicles and plant arriving at and leaving the site will comply with the same restrictions on hours. The main contractor will be held responsible for ensuring these instructions are given to all drivers, including those delivering site materials.

6. Site Welfare and Site Offices

Welfare facilities and site offices are to be provided for the duration of the construction works. The site welfare will include facilities for dining, heating of food and water, hand wash basins with hot and cold running water and toilet facilities in sufficient quantities to satisfy the complement of site staff in line with CDM regulations 2015.

7. Controls to Limit Noise and Vibration

7.1. Site Preparation, Design and Layout

It is important to consider the impact of the construction site on the local environment. This will include understanding where the nearest sensitive resource or residential receptor is, the general ambient noise level in the area and having an understanding of what the impacts will be, given the duration, scale and type of construction and demolition required.

Where practicable:

- Locate the site access and the material storage away from sensitive receptors (residential dwellings);
- The standard hoarding height of 2.44m (surface density of not less than 7kg/m²) will be increased to break the line of sight to neighbouring residential properties;
- Position site huts to provide additional screening of works;
- Maximise the screening effect of buildings through programming/phasing of works;
- Provide turning space within the site, or create a through road, avoiding the need to reverse and reducing the associated noise from reverse warning systems;
- Delivery routes and vehicle holding areas will be chosen to avoid diverting traffic;
- Establish an electricity supply to the site via liaison with UKPN to a substation identified on site during the initial visits. This will limit the requirement for diesel generators which can have a localised noise and air quality impact; and
- Ensure adequate planning within the project to prevent noise generating from double handling of materials and overlapping of high noise activities.

7.2. Operations

All plant and equipment, including any on hire, is to be checked to ensure it is in good working order and conforms to the standards of the manufacturer. Equipment is to be properly silenced and meet statutory emission standards. Defective items are not to be used.

All large concrete pours are to be started as early as possible, within normal hours, to avoid overruns.

Prior to commencement of works, the site workforce will be fully briefed on the need to keep all noise generated to a minimum. Shouting and raised voices are not permitted other than in cases where warnings of danger must be given. Radios will not be played at a volume that is likely to disturb neighbouring businesses.

The opening and closing of the site access will be minimised through good coordination of deliveries and vehicle movements.

Consideration should be given to excavations close to neighbouring structures including residential properties, roadways and pavements with respect to adverse effects from vibratory plant.

7.3. Monitoring

In order to be proactive and a considerate contractor we would recommend that noise monitoring is undertaken at the start of each new activity as identified in the Method Statement/Works Schedule and during out of hours work (if this has been agreed). The Contractor will maintain a record of these noise monitoring results.

Monitoring locations will be chosen to accurately measure the worst affected locations on/off site and be subject to agreement with the Environmental Protection Team.

Noise and vibration monitoring will be used by the Contractor as a proactive tool to: improve work processes; identify and address issues as they arise; investigate complaints and check compliance with any noise predicted levels.

The effectiveness of all measures will be monitored frequently by the main contractor and reviewed at least weekly.

7.4. Plant and Equipment

Noisy plant or equipment will be sited as far away as is practically possible from sensitive receptors (neighbouring residential properties). The use of barriers such as site huts and acoustic sheds or partitions to deflect noise away from noise sensitive areas are to be employed wherever practicable.

Wherever practicable, all plant and equipment will be powered by mains electricity in preference to locally powered sources such as diesel generators. Hand tools will also be electrically powered rather than petrol or diesel driven.

Vehicles and mechanical plant used for the purpose of the works will be fitted with effective exhaust silencers, maintained in good and efficient working order and operated to minimise noise emissions. The contractor will ensure that all plant complies with the relevant statutory and manufacturers' requirements.

For works consented to occur outside of normal working hours, where practicable, a broad-band reverse warning system will be used on all vehicles and at any time where it is safe to do so, all sirens and alarms will be disengaged.

Machines in intermittent use will be shut down in the intervening periods between works or throttled down to a minimum. Noise emitting equipment that is required to run continuously may have to be housed in suitable enclosures.

Compressors will be "sound reduced" models fitted with properly lined and sealed acoustic covers that will be kept closed whenever the machines are in use.

Equipment which breaks concrete, brickwork or masonry by bending or by bursting will be used in preference to percussive tools as far as practicable.

Pneumatic percussive tools will be fitted with mufflers or silencers of the type recommended by the manufacturers.

During backfilling and ground compaction work, dead rollers will be used in preference to vibrating rollers where practicable in accordance with compaction capabilities.

Where practicable, rotary drills and bursters actuated by hydraulic, chemical or electrical power will be used for excavating hard or extrusive material.

Plant will be maintained in good working condition so that extraneous noise from mechanical vibration, creaking and squeaking is kept to a minimum. Care will be taken when loading or unloading vehicles, dismantling scaffolding or moving materials etc. to reduce impact noise.

The types of equipment are yet to be confirmed however the equipment to be used on site will be detailed within the construction phase plan.

8. Dust Suppression, Mitigation and Avoidance Measures

8.1. Introduction

A development may include all or some of the following phases which have the potential to generate dust:

- Earthworks (albeit minor movement and compaction);
- Construction; and
- Vehicle Movements and Trackout

The Institute of Air Quality Management (IAQM) has produced a document Guidance on the Assessment of Dust, which outlines the risks arising from each of these activities and it is recommended that this guidance and its risk assessment methodology be followed.

Once the risk of dust and air pollution from each of the phases has been assessed, these risks need to be managed and appropriate mitigation measures put in place which may go beyond the general principles outlined in Project Set Up, above.

Consideration should be given to the siting of aggregate stockpiles, based upon such factor as the prevailing winds, proximity of site boundary and proximity of neighbours.

Areas where there is vehicular movement should have a consolidated surface which should be kept in good repair.

The main principles for preventing dust emissions are containment of dust and suppression of dust using water or proprietary suppressants. Suppression techniques should be properly designed, used and maintained, in order to be effective.

Where there is evidence of airborne dust from the building construction activities the site, the principal contractor should make their own inspection and assessment, and where necessary undertake monitoring. Once the source of the emission is known, the correct action should be taken. Activities that cause dust to be produced should not be undertaken during periods of high winds to avoid excessive mobilisation of particulate matter from the site.

Effective preventative maintenance should be employed on all aspects of the construction works including all plant, vehicles, buildings and the equipment concerned with the control of emissions to air.

Important management techniques for effective control of emissions include; proper management, supervision and training for process operations; proper use of equipment; effective preventative maintenance on all plant and equipment concerned with the control of emissions to the air; and it is good practice to ensure that spares are available on site in order to fix breakdowns quickly.

8.2. Construction Regulations

Building construction regulations are legal requirements aimed at achieving good standards for the construction of domestic, commercial and industrial buildings. They are laid down by parliament and are supported by separate documents containing practical and technical guidance on compliance, which are known as 'approved documents'. The local Council website details all of the relevant Construction Regulations which will be relevant to this development.

9. Fuel and Chemical Storage

All fuel and oil will be stored in accordance with the Control of Pollution (Oil Storage) (England) Regulations 2001 and they will be handled in such a way that risk of pollution is minimised, this will include:

- Fuel and oil storage tanks will comply with the Control of Pollution (Oil Storage) (England) regulations 2001, and will be locked when not in use;
- Storage areas will not be located within 10m of the watercourse or highway gully;
- Mobile bowsters will be bunded and will comply with the Control of Pollution (Oil Storage) (England) Regulations 2001 and will be locked when not in use;
- Drums will be stored in bunded areas with a minimum capacity of 25% of the total volume contained within the bund, or 110% of the largest container, whichever is greater;
- Drums will be maintained in good condition, fitted with lids and labelled to indicate the containers;

- Trained operatives only will carry out refuelling of plant and equipment;
- Static combustion engine plant (e.g. compressors, lighting sets) will be integrally bunded or placed on drip trays;
- Plant will be regularly checked for leaks and will be regularly maintained; and
- Spill kits will be provided within close proximity to fuel and oil storage areas and operatives will be trained in their use.

Any fuel and chemicals stored on site are to be stored in well-bunded containers in accordance with the storage instructions outlined by the manufacturer, and labelled with appropriate signage outlining the handling risks and risks to the environment. All fuels and chemicals are to be stored on hardstanding in good condition to prevent leakages which could endanger the surrounding environment, and all containers must be inspected regularly for any potential leakages and any defective containers are to be replaced at the earliest opportunity.

Should any leakages occur, this must be reported and dealt with at the earliest opportunity with efforts made to prevent run off of fuel and chemicals off site. Disposal of waste fuels down public drains are prohibited as this could cause a serious environmental risk to waterways upon exiting of water treatment systems.

10. Fire and Emergency Arrangements

10.1. Hospital

The nearest hospital will be confirmed to all contractors and persons on site and a route plan will be clearly presented to ensure all parties understand the quickest route.

10.2. On-Site Emergency response procedures

10.2.1. Spill Action Check List under fuel storage

Quickly assess the nature and extent of the incident. If there is a fire or spillage which cannot be safely controlled:

- Evacuate the area and call the fire brigade. State the extent of the spill and chemicals involved;
- Only attempt to fight fires if appropriate equipment is available and it is safe to do so and the fire is small enough to safely tackle;
- Undertake a head count to ensure all staff and subcontractors are present and accounted for;
- Maintain a safe distance; Provide information to emergency services regarding the size and nature of material loss;
- Do not attempt lone rescues or rescues that may put you at harm; and
- Notify appropriate personnel as detailed within the RAMS.

If there is no fire and the spill can be safely controlled:

- Carefully assess the incident area for exact hazards present, information from signs displayed, extent of incident, danger from damaged buildings, explosions, gas, leaks etc.;
- Evacuate personnel and form a cordon to prevent persons entering the spill area;
- Prevent the spread of spilt substances using available spill kits;
- Do not attempted lone rescues or rescues that may put you at harm; and
- Notify appropriate authorities and personnel as detailed within the RAMS.

10.3. Fire safety

Each year there are hundreds of fires on construction sites, potentially putting the lives of workers and members of the public at risk. Fire safety in construction is about preventing fires from starting and ensuring people's safety if they do.

The HSE has published a Fire Safety in Construction document (Second edition, published 2010). This document explains how everyone involved in construction projects can comply with their legal duties relating to fire risks. It is aimed at all those with a role for developing and managing construction sites, including clients and designers, and is relevant to all construction projects.

10.3.1. Fire Risk Assessment

Legislation requires a suitable and sufficient fire risk assessment to be carried out by a responsible person (the employer or persons in control).

The Regulatory Reform (Fire Safety) Order 2005 (FSO) places responsibility for compliance on the 'responsible person'. Article 3 defines the responsible person as:

- The employer (for a workplace to any extent under the employer's control); or
- A person who has control of a premises in connection with them carrying out any trade, business or other undertaking (for profit or not); or
- The owner, where the person in control of the premises does not have control in connection with the carrying on by that person of any trade, business or other undertaking.

As with assessments of risk from other hazards, the fire risk assessment will be based on the following approach:

- Step 1 – Identify the hazards;
- Step 2 – Identify people at risk;
- Step 3 – Evaluate, remove, reduce and protect from risk;
- Step 4 – Record, plan, inform, instruct and train; and,
- Step 5 – Review.

10.3.2. Fire Precautions

The Fire Safety in Construction document outlines a number of precautions that will be considered within the fire risk assessment. This will be reviewed and incorporated into the site RAMS.

Emergency signs must be clearly displayed and exit routes must be kept clear;

Once the building has been constructed, fire alarms must be fully functional with routine (weekly) checks and tests by a nominated and competent person;

Sufficient and appropriate firefighting equipment will be available on site to deal with all potential fire hazards presented by the site;

For a typical spread of fire hazards, the following is considered to provide a reasonable level of cover per 200 m² of floor area, with no fewer than two each of (a) and (b)

- (a) One 9 litre water or foam; and,
- (b) One CO₂ extinguisher (at least 1.1 kg).

Once the structure is constructed, emergency escape lighting will be installed to illuminate escape routes, firefighting equipment and emergency signage;

Fire notices will be concise and clearly displayed across the site. Notices will include as a minimum:

- Details of how to raise the alarm (e.g. "Shout 'Fire'");
- Contact number for fire service (day and night);
 - Location of emergency assembly point; and,
- Name of site Fire Safety Coordinator / Fire Warden.

A selection of fire extinguishers complying with BS EN 3 shall be located on the site and shall be red with a coloured band identifying the extinguishing agent (e.g. blue: dry powder, double white: water, single white: foam and black: carbon dioxide)

10.3.3. Legal and Enforcement Responsibilities

Several pieces of legislation govern fire safety for construction sites and construction activities.

The overarching health and safety requirements during construction work, which include fire safety, are provided by the Construction (Design and Management) Regulations 2015.

Other legislation covering fire safety includes:

- The Regulatory Reform (Fire Safety) Order 2005 (FSO) in England and Wales;
- The Dangerous Substances and Explosive Atmospheres Regulations 2002 (DSEAR); and
- Fire Safety (Employee's Capabilities) (England) Regulations 2010. (These Regulations require that employers must take account of an employee's capabilities as regards fire safety in entrusting tasks to them.)

These make detailed requirements for fire safety, which also apply to work incidental to the construction activity, e.g. provision of office and welfare facilities.

11. Traffic Management

11.1. General

Proposed access to and from the site during construction is outlined in the Construction Logistics Plan which forms part of the planning application.

11.2. Site Access

It is expected that all site personnel, visitors and delivery vehicles will adhere to a legal speed limits on approach to the site. Drivers are required to drive in a manner that minimises vehicle noise, emission and to be considerate of other road users.

Make sure that all drivers and pedestrians know and understand the routes and traffic rules on site. Use standard road signs where appropriate. Provide induction training for drivers, workers and visitors and send instructions out to visitors before their visit.

All plant to be used on site will only be operated by suitably trained and qualified personnel (e.g. CPCS card holders).

It is recommended that a pre-works condition survey is undertaken prior to commencement of activities on site. This will allow the contractor to determine the condition of any road ways and kerb sides pre-works. The same survey should be undertaken following the completion for site works so that any damage related to the construction can be replaced. It is recommended that a representative from the

Local Authority is contacted prior to the survey to indicate if they would like to be in attendance.

11.3. Loading and Unloading of Plant and Materials

A vehicle booking system will be utilised on site to control deliveries with the drivers calling in prior to arrival. The booking system allows time slots to be booked ensuring deliveries do not coincide with peak rush hour traffic and, take place between 9:30am to 4:00pm Monday to Friday and 9:00am to 2:00pm on Saturdays. Site work will not be permitted on Sundays, thus there will be no vehicles at the site. It is vital that deliveries occur within the allotted time. If deliveries arrive outside the allocated slot, they will be turned away.

All vehicles loading and unloading at the site are required to be FORS registered and be of rigid frame; no vehicles larger than 3 axles articulated or rigid lorries are allowed. All materials will be on a just in time basis and loaded from the delivery vehicle onto the area it is required.

If site personnel are directing vehicle movement they must be sufficiently trained as a banksman/signaller.

11.4. Storage of Plant and Materials

A good standard of housekeeping is required across the site, particularly within plant and material storage areas.

Flammable materials must be stored away from other materials and protected from accidental ignition as detailed with the fire safety protocols. Deliveries will be planned to keep materials on site to a minimum (just in time protocols). This will aid in keeping the site clear and tidy, alongside increasing the ease of access to construction materials.

Storage of materials is to be kept inside locked containers for increased security. Movement of storage areas, and re-purposing of land throughout the development for use as storage is going to be likely considering the limited space available on site. Consideration will be given to the use of multi stage and/multi-storey temporary offices and stores, for maximum land use efficiency.

11.5. Boundary Hoarding

Full height timber hoarding will be provided to all exposed elevations of the site with lockable access gates and a segregated pedestrian access. Additionally, the fencing will protect the neighbouring properties, and highways from any damage. Any changes in public pedestrian routes will have signage deployed to highlight the new temporary route during the construction phase.

11.6. Lighting

Any artificial lighting provided on the site will be installed in such a way as to minimise light trespass beyond the site boundary or annoyance from glare at nearby sensitive receptors (neighbouring properties). Where appropriate, consideration will be given to light screening and directionality to achieve this. If complaints are received by the Local Planning Authority in relation to light nuisance from the site, immediate action should be taken to avoid any further light issues.

11.7. Preventative Measures for Highway Debris (Wheel Washing)

Prior to construction a submission of the existing condition of the highway will be required, and a commitment is recommended to make good any damages to the highways during construction.

Additionally, if any debris or hazards end up on public highways it should be cleared by a dedicated Site Operative and the use of road sweepers deployed as appropriate. Vehicles arriving on the site should be inspected before to check for debris that could fall on to the road. Considering the nature of the underlying material at the site, provision should be made for a dedicated wheel washing facility. Should this not be feasible at the site, any cleaning will be required to be done by hand, with debris swept up and placed into appropriate waste containers.

Consideration should be made for the regular use of a road sweeper to clean any stains and material from the wheels of site vehicles from public highways and access roads.

11.8. Waste Management

The Principal Contractor should provide a waste management strategy for handling and disposing of construction waste. Rubbish should be removed at frequent intervals and the site kept clean and tidy.

It is recommended that separate waste sections are highlighted within the construction phase health and safety plan and within site inductions detailed to contractors where general waste, recyclables, hazardous wastes and liquids are to be disposed.

Fly-tipping will not be permitted. Loads should only be deposited at authorised tips or into designated barges. Deposition should be in accordance with the requirements of the Environment Agency, the current Environmental Legislation and Special Waste Regulations.

Burning of waste on site is strictly prohibited as this could emit toxic fumes which could pose a danger to off-site receptors (neighbouring private residential gardens and passing members of the public).

11.9. Pedestrian Access

From pre-construction site enabling works through to completion, pedestrian access will be restricted to safe areas protected by proper access control measures. There will be no public access to the site and this will be enforced through adequate full height timber hoarding.

Separate entrances and exits will be in place for pedestrians and vehicles in order to reduce the possibility of road traffic accidents. Firm and level walkways will be in place on the site, with protective barriers ensuring pedestrians keep to the designated route. Clear crossings will be in place when a pedestrian route intersects a plant roadway.

11.10. Vehicle Movements and Environmental Considerations

Transport accounts for 10-20% of construction costs. Construction vehicles contribute to serious road congestion, and construction sites suffer with poor reliability of deliveries.

The Building Research Establishment (BRE) offer guidance on reducing site transport, and thus cutting costs. Financial and productivity benefits of adopting a more efficient approach to transport and logistics include:

- Reduced fuel and delivery costs;
- Increased delivery efficiency and reliability;
- Reduced costs for parking; and,
- Increased profitability.

The Department for Transport (DfT) provides advice and information on staff travel plans and has recently launched industrial sector transport benchmarks.

11.10.1. Public Transport

Site personnel, operatives and visitors will be encouraged to use public transport where practical as the site is close to bus routes. As such it is recommended that where possible, sub-contractors will be sourced locally to reduce commuting distances and times; this also helps to promote a positive local relationship and work-life balance which leads to greater productivity.

11.10.2.Reducing Vehicle Emissions

As far as practicably possible, delivery vehicles and plant operating on site will be operating with low emission engines. Delivery drivers and plant operators will be strongly encouraged to switch off engines during periods where vehicles are not being used (including throughout loading and unloading operations).

11.10.3.Reducing Vehicle Movements

The BRE suggest a number of considerations which are designed to reduce the number of deliveries which are required on site. These are detailed below:

- Start considering transport during design and project planning;
- Schedule works to minimise total project time and thus reduce total number of travel days;
- As far as is reasonable, do not hire and off-hire plant more than once per machine, thus reducing number of deliveries;
- Partnering and supply chain integration - formal or informal arrangements – can lead to multiple deliveries being condensed into one;
- For materials, use local suppliers, share deliveries and arrange with the supplier to send vehicles back full with off-cuts or other waste;
- Site waste will be disposed of as locally as possible;

End of Report		
Prepared by:	Chris Martin BSc (Hons) MSc MRICS	
Date:	6 th December 2021	
Martin Arnold Associates LLP 6-8 Gunnery Terrace T: 020-8317-7557 The Royal Arsenal F: 020-8317-7741 London E: general@martinarnold.co.uk SE18 6SW W: martinarnold.co.uk		