

Prepared by Bridgehead Consultancy Limited
On behalf of Latimer Developments Limited

Construction Management Plan

Boddingtons Brewery Manchester M3



**Boddingtons
Brewery
Manchester M3**
Construction
Management Plan

Version 4 | 30 November 2021

This report has taken into consideration
the particular instructions and requirements
of our client.

It is not intended for and should not be relied
upon by any third party and no responsibility
is undertaken to any third party.

Job number 1104

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1 Introduction

The purpose of the Construction Management Plan is to establish the overall delivery and site control to minimise impacts during the construction of Boddingtons Brewery.

This report has been prepared to support an application for full planning permission for the proposed construction of the project. This is an initial plan and has been prepared in advance of the appointment of the Main Contractor.

This document has been developed following the engagement with all stakeholders regarding the proposed development of the site. The purpose of this document is to outline the principles of the construction methodology and construction logistics for the proposed site works and is subject to refinement as the project evolves and the Main Contractor is appointed on the development.

This report details the proposed outline programme and key activities for the construction works with potential significant environmental impacts associated with these activities being identified and, where necessary, proposals for mitigation are outlined in consideration to the requirements of Manchester City Council.

The development will likely procure a single Main Contractor for the entire construction works with the appointed Main Contractor supervising and overseeing all works. The Main Contractor, when appointed, will use this report as a basis for further preparation of its own working site activity which will be submitted at a later date.

2 The Site

The site is located to the North of Victoria Railway station and the Manchester Arena on the inner ring road on New Bridge Street. Comprising of 1.24 acres of brownfield, it is currently being used as a surface car park and was formerly part of the former Boddingtons Brewery. The surface car park is enclosed by secured fencing with a gated entrance off Great Ducie Street.

Beyond the immediate boundaries to the North is the 7 storey Travelodge, the West is the proposed boulevard and the Brewery Gardens scheme (consented and awaiting site start). To the east is a mixed low rise industrial use building subject to potential redevelopment. The scheme is well located with all the required infrastructure readily available.

The project consists of the construction of circa 445 residential units with associated ancillary accommodation, within four blocks ranging from 10 to 24 storeys. In addition, there is to be retail/commercial units at ground floor level. The residential accommodation comprises of a mix of one, two and three bedroom dwellings and is mainly set around hard landscaping and access roads.

The site sits in an emerging location in Manchester city centre, within 500m walk to Victoria station and 650m walk to the top of Deansgate. The area is currently dominated by low rise business sheds, however, a plan for the wider area has been adopted by Manchester City Council.

Adjacent to the site, a new college is currently being built by LTE Group in association with Manchester City Council which will enhance the area's character and demographics.

3 Outline Programme

The outline timescales for delivering the development after planning are estimated as follows:

Estimated start on site: July 2022

Estimated piling construction period: October 2022 to May 2023

Estimated superstructure construction period: June 2023 to July 2025

Estimated completion date: August 2025

4 Site Establishment

4.1 Site Hoarding

An early activity will be to protect and enclose the site before construction activity commences. A solid hoarding will be employed to the whole perimeter of the site boundary and maintained at all times. Site hoarding will be 2.5m high, painted and made of solid outdoor grade plywood. Where the hoarding is set into the road, temporary vertical concrete barriers will be installed at the base of the hoarding for added protection. Concrete blocks will also be deployed where the highway meets the pitlane.

The site hoarding line will include low level lighting where the hoarding line fronts the public highway. This lighting will only be illuminated in the dark autumn nights and overnight.

Signage will be displayed on the hoarding for health and safety purposes, Considerate Constructors Scheme signage and a point of contact for the neighbouring residents.

Figure 2: Construction Logistics Model (Option 1)



4.2 Welfare & Accommodation

It is fundamentally important to provide a safe and comfortable environment for all sites workers, therefore, site establishment and welfare accommodation will be installed to provide a high quality and secure site.

Typical site accommodation will include:

- Main Contractor management offices and meeting rooms;
- Welfare facilities including canteen, drying/changing rooms as well as toilet and shower facilities;
- Security office;
- Sub-contractor facilities.

There are 3 potential locations for the welfare and accommodation placement:

Option 1: Outside site boundary (double stacked on top of the gantry and parallel to A56 Great Ducie Street).

Option 2: Within the site boundary (at the location of the proposed cycle stores).

Option 3: Within the site boundary (parallel to the hoarding to the North of the site).



Figure 3: Welfare & Accommodation Plan

Note:

Option 1 requires site workers to access and egress using stairs running parallel to the College land.
Option 3 requires the cycles stores to be constructed at the latter part of the programme.

4.3 Parking for the site

There will be no parking provided for construction worker vehicles on the site nor will there be any off-site provision. Parking will not be allowed on the site and all contractors and sub-contractors will be advised through their contract documentation that no parking is available and that all personnel should use sustainable transportation.

5 Hours of Site Working

The working hours for construction activities will be in line with requirements of the Control of Pollution Act 1974 Part III and the site will operate in accordance with the following Manchester City Council guidance:

- Monday – Friday 7.30am – 6pm
- Saturday: 8.30am – 2pm
- Sunday/Bank Holidays: No work

The workforce may arrive on site 30 minutes prior to work commencing but there is to be no working outside of these times (unless changed by prior agreement with Manchester City Council).

Noise is to be kept to a minimum in the first hour and site operations on a Saturday should be avoided where possible.

6 Construction Logistics

6.1 Considerations

As the site is located in a busy area of central Manchester, it is important to consider how the site will be serviced and the impact of construction logistics on the surrounding area. Construction logistics planning is both considered at a macro and micro level.

Construction logistics planning allow project and design management teams to understand how their proposed project design will be impacted by site and vehicle movements.

Within construction logistics planning, access and egress routes are determined to offer the least congested solution for vehicles, cyclists and pedestrians to the site and surrounding area.

Site activity must avoid any unnecessary disruption to the local community and ensure the safe and efficient operation of the construction phase of the project. Planning of the construction logistics process ensures site operations are effectively planned, managed and monitored to keep the project site moving safely without compromising productivity.

The traditional backbone of construction logistics has always been delivery & traffic management, waste management, material distribution, welfare provision, site security and safety.

6.2 Construction Logistics Plans

6.2.1 Construction Logistics Plan (1)

All vehicles delivering or collecting from the site are to approach and leave site via the A56 Great Ducie Street. All vehicles are to exit right towards the M60 and avoid the A6042 (South).

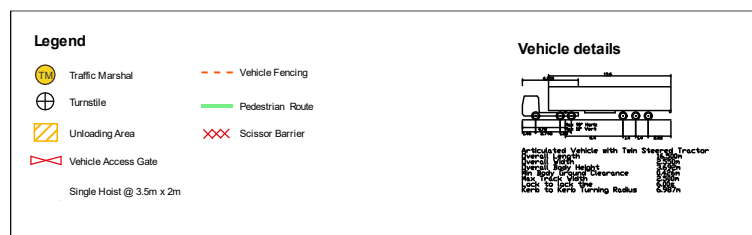
Pit lanes will be required for deliveries, lay down of materials and concrete deliveries into the site demise. This will require deliveries to be unloaded and be marshalled back onto A56 Great Ducie Street by the construction logistics team.

Temporary loading bay 3/vehicle holding zone to be removed when not in use. The South-East boundary is to be cornered off to allow for a sweep path into the site area via the North-East vehicle entrance gate.

During phase 2 of the construction of Manchester College, access over the private road will be managed by a 3rd party company offering traffic management whilst the two projects operate simultaneously.



Figure 4: Construction Logistics Plan (1)



6.2.2 Construction Logistics Plan Alternative (2a)

All vehicles delivering or collecting from the site are to approach and leave site via the A56 Great Ducie Street. All vehicles are to exit right towards the M60 and avoid the A6042 (South).

Pit lanes will be required for deliveries, lay down of materials and concrete deliveries into the site demise. This will require deliveries to be unloaded & be marshalled back onto A56 Great Ducie Street by the construction logistics team.

Manchester City Council would need to suspend parking bay spaces along Francis Street for the duration of project. The South-East boundary is to be cornered off to allow for a sweep path into the site area via the North-East vehicle entrance gate.

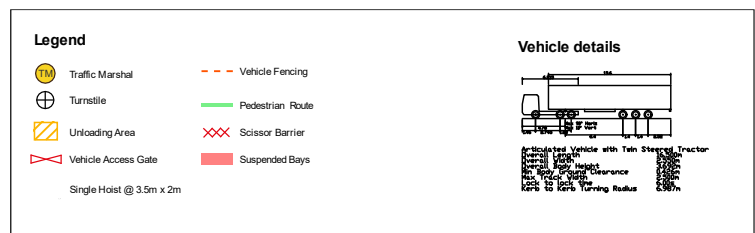
During phase 2 of the construction of Manchester College, access over the private road will be managed by a 3rd party company offering traffic management whilst the two projects operate simultaneously.



Figure 5: Construction Logistics Plan (2a)

Note:

Option 2a is to be implemented if the land to the North can be secured.



6.2.3 Construction Logistics Plan Alternative (2b)

All vehicles delivering or collecting from the site are to approach and leave site via the A56 Great Ducie Street. All vehicles are to exit right towards the M60 and avoid the A6042 (South).

Pit lanes will be required for deliveries, lay down of materials and concrete deliveries into the site demise. This will require deliveries to be unloaded & be marshalled back onto A56 Great Ducie Street by the construction logistics team.

Manchester City Council would need to suspend parking bay spaces along Francis Street and Briddon Street for the duration of project. The South-East boundary is to be cornered off to allow for a sweep path into the site area via the North-East vehicle entrance gate. During phase 2 of the construction of Manchester College, access over the private road will be managed by a 3rd party company offering traffic management whilst the two projects operate simultaneously.

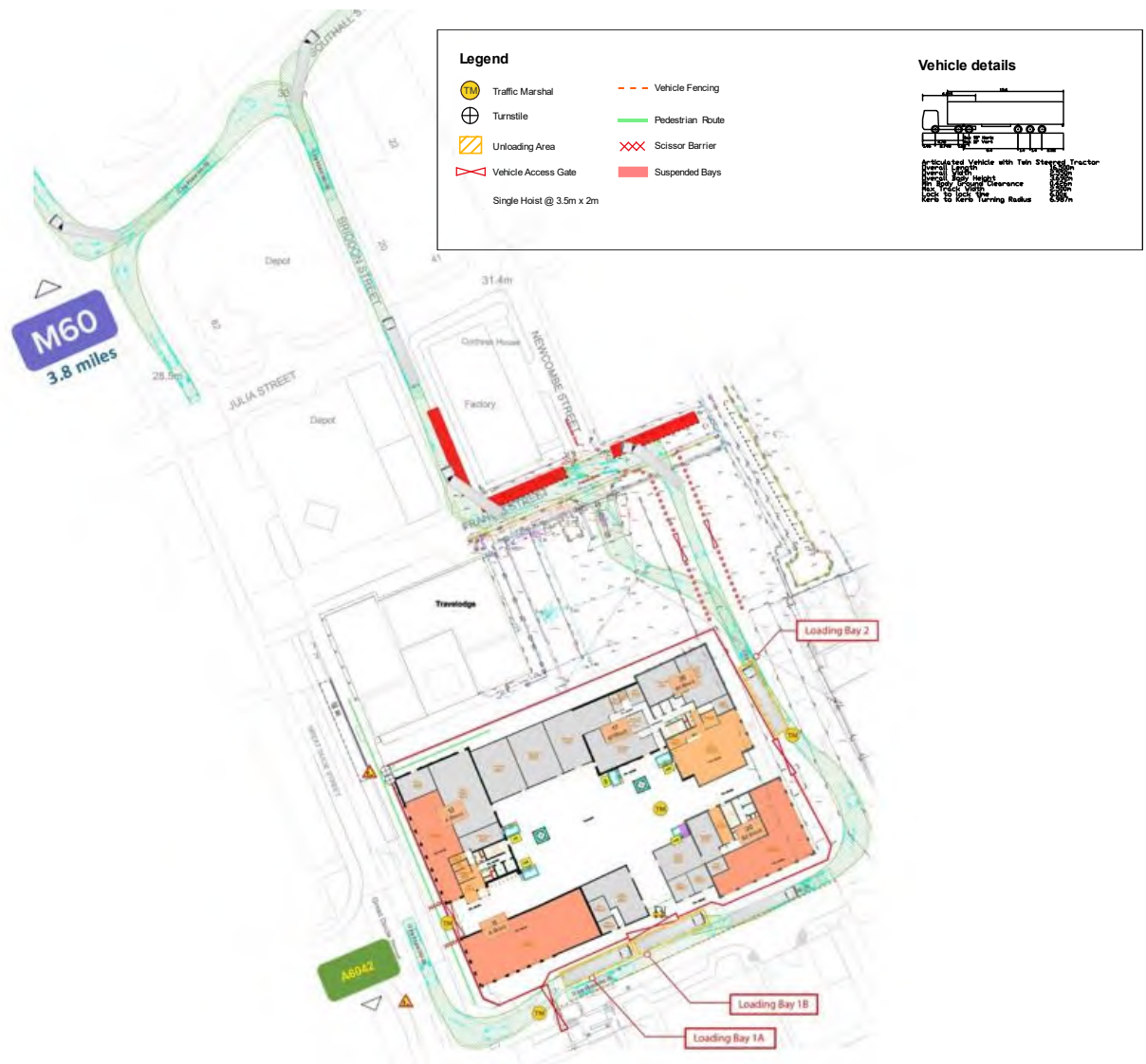


Figure 6: Construction Logistics Plan (2b)

Note:

Option 2b is to be implemented if the land to the North can be secured.

6.3 Construction Logistics & Cyclist Safety (CLOCS)

The standard for construction logistics; managing work related road risk (WRRR) is the result of collaboration between construction clients, logistic operators and industry associations.

The document draws together emerging practices from a number of individual standards, policies and codes of practice into one common WRRR standard. This common standard is implemented by developers and can be adhered to in a consistent way by fleet operators.

The standard aims to ensure that construction companies follow effective practice in the management of their operations, vehicles, drivers and construction sites.

Each requirement has been developed to reduce the risk of a collision between heavy goods vehicles in the construction sector and vulnerable road users such as cyclists and pedestrians.

The standard sets the detailed minimum requirements to create a consistent baseline but is written in a way that encourages road safety to be managed ever more rigorously as new best practice emerges.

The CLOCS standard is a key step to demonstrate the commitment of construction logistics industry organisations to improve road safety throughout the supply chain.

The contractor will be required to operate both the Fleet Operator Recognition Scheme (FORS) and Construction Logistics and Cyclist Safety (CLOCS) safety schemes whilst working on site.

6.4 Vehicle Site Access

We have proposed access of a one-way route from A56 Great Ducie Street into the private road on the College land to allow for articulated vehicle deliveries.

All deliveries to site should be undertaken through an electronic Delivery Management System (DMS), managed by the construction logistics team, with all deliveries allocated to a specific time slot.

Failure to adhere to the time slot may result in a sub-contractor's delivery being denied entry as there will be no allotted vehicle holding zones on the public street to allow access to the site.

The delivery management process and system is integrated into the traffic management planning and operation to ensure the two work proactively together to reduce the impact of vehicle congestion. They will also be co-ordinated with crane and hoist movement on site.

This provides the safest and most sustainable working solution of segregation to the workforce from material deliveries. All movement and unloading of both contractors, over the private road will be managed by a 3rd party traffic management company.

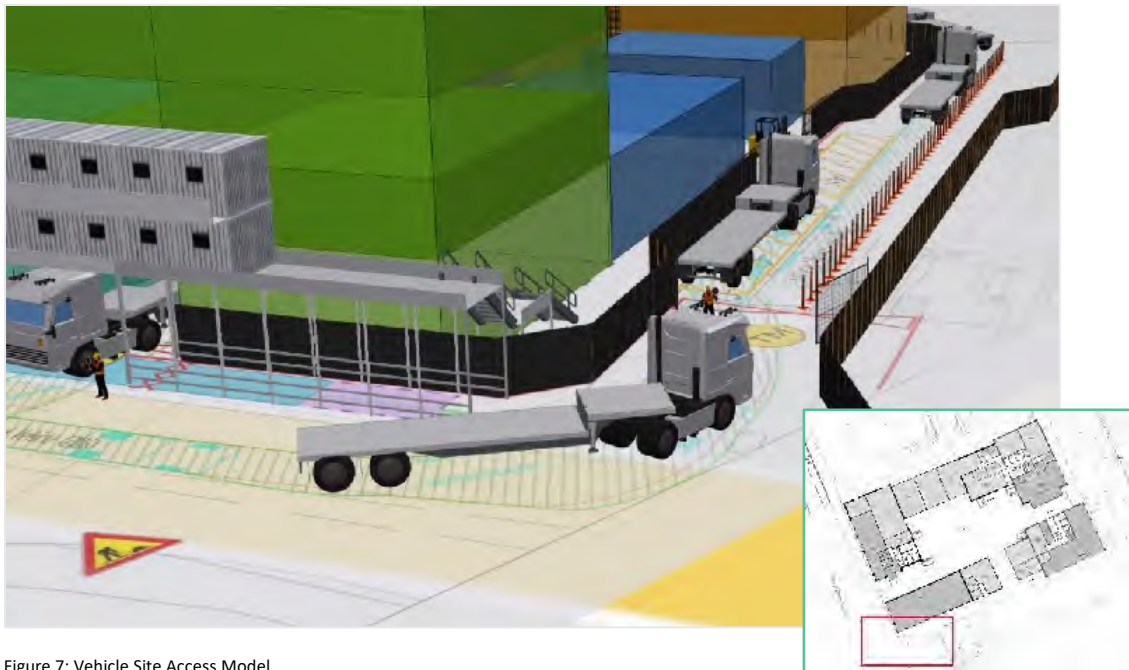


Figure 7: Vehicle Site Access Model

6.5 Pit Lane Delivery Areas

Due to the limited area available within the site footprint the proposed use of pit lanes, to enable the delivery of materials, will be required on the new private road.

The private road is currently being used to support the construction of the Manchester College City Centre Campus. To avoid congestion (to both projects and neighbouring stakeholders) we have consulted with the neighbouring projects contractor to agree access and usage of the new private road.

This will ensure we have sufficient access and use of the disabled parking bays for the proposed pit lane delivery areas that will service the site.

Traffic management will manage all site related traffic and take responsibility for supervising and directing all vehicle and pedestrian movement in and around the site.

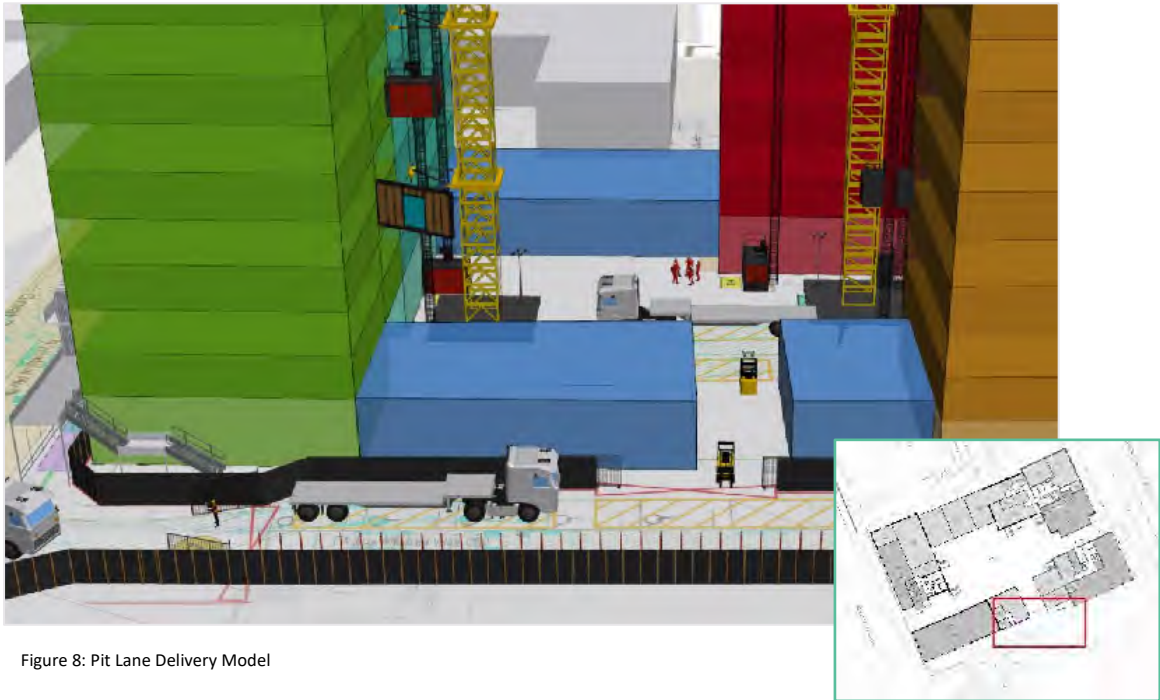


Figure 8: Pit Lane Delivery Model

6.6 Traffic Management

A traffic management approach is key to construction logistics and will be crucial to the success of the Boddingtons Brewery site.

The primary responsibility of the traffic management team is to ensure safe and sustainable flow and movement of construction traffic on, off and around the site.

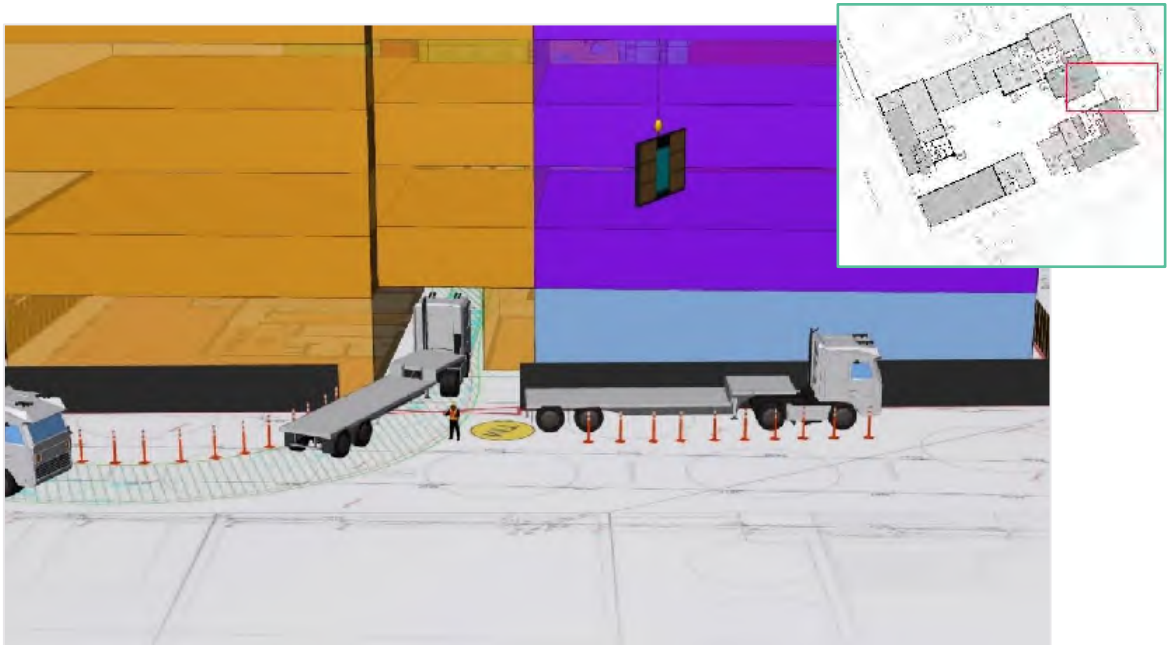


Figure 9: Traffic Management Model

The commitment to the CLOCS industry standard not only ensures that all fleet services will be compliant with the FORS silver standard (as a minimum) but also means the construction logistics team are dedicated to ensuring that the construction traffic is safely managed, protecting sites and local communities from collisions and pollution.

There will be safe demarcation routes for the workforce throughout the site, with the traffic management team ensuring all vehicles are safely banked away from the site to protect all stakeholders.

6.7 Vehicle Site Egress

The success of the Boddingtons Brewery site will rely on the management of site egress, ensuring construction vehicles do not impact the traffic flow on A56 Great Ducie Street.

The hoarding line is to be installed at the back of the pavement so the footpath can still be used, from the new private road running parallel to A56 Great Ducie Street. Effective traffic management and retractable barriers are to be used to ensure safe egress of construction traffic from site.

Upon consultation with Manchester City Council regarding use of A56 Great Ducie Street, the proposed construction logistics plans do not require pit lanes on the public road and will also ensure the existing bus lanes will remain operational. For access and egress, there is segregation between both pedestrian and vehicle traffic with turnstile access located on the North-West corner of the site.

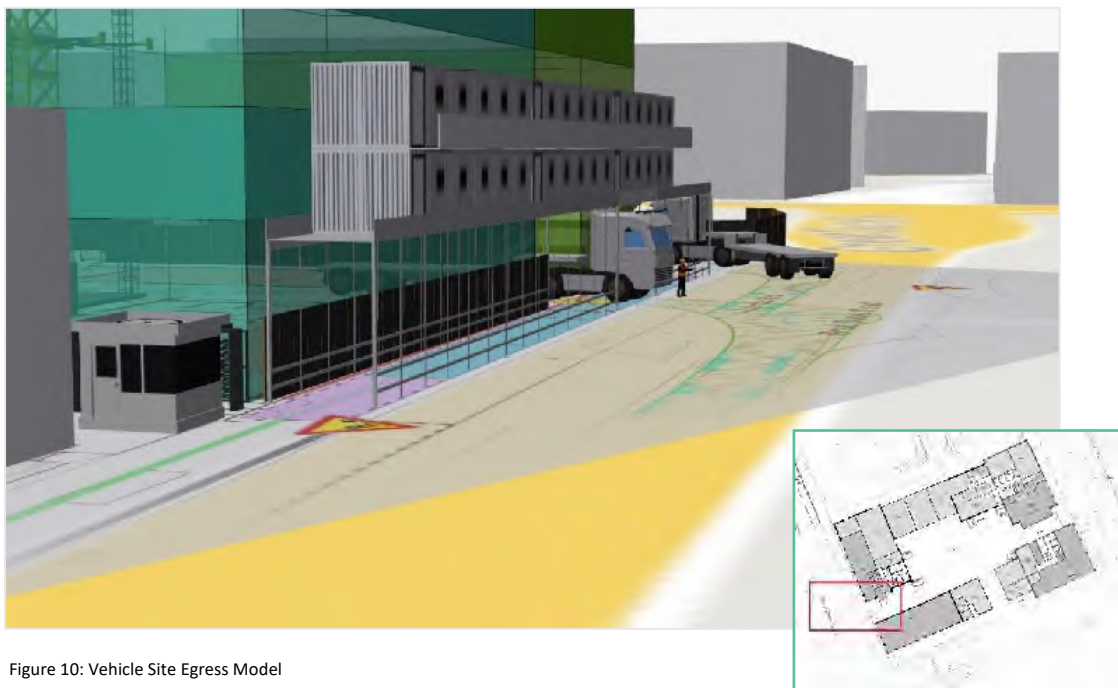


Figure 10: Vehicle Site Egress Model

6.8 Hoists, Lifts & Cranes

External hoisting positions will be required for use during the construction of Boddingtons Brewery. As a general principle, all deliveries to site will be off-loaded within the site boundary. All cranes will be suitably sized and coordinate with the oversailing licences by the appointed Main Contractor to ensure that there will be no height clashes with the existing adjacent buildings.

Due to the requirement of multiple cranes within a tight area, the crane strategy should be considered carefully by the appointed Main Contractor.

The key issues are:

- Collisions of cranes at height;
- Over sailing of adjacent properties;
- Over sailing of public highways (and infrastructure routes).

Furthermore, hoists can often operate inefficiently (with half loads going up to the floors). Through central delivery management, there is unbiased movement of materials. Deliveries go to the relevant location on the same day regardless of time of arrival (ready for use the next day). All hoist checks are to be done correctly and any faults found must be logged and reported to the Main Contractor to alleviate any the time lost.

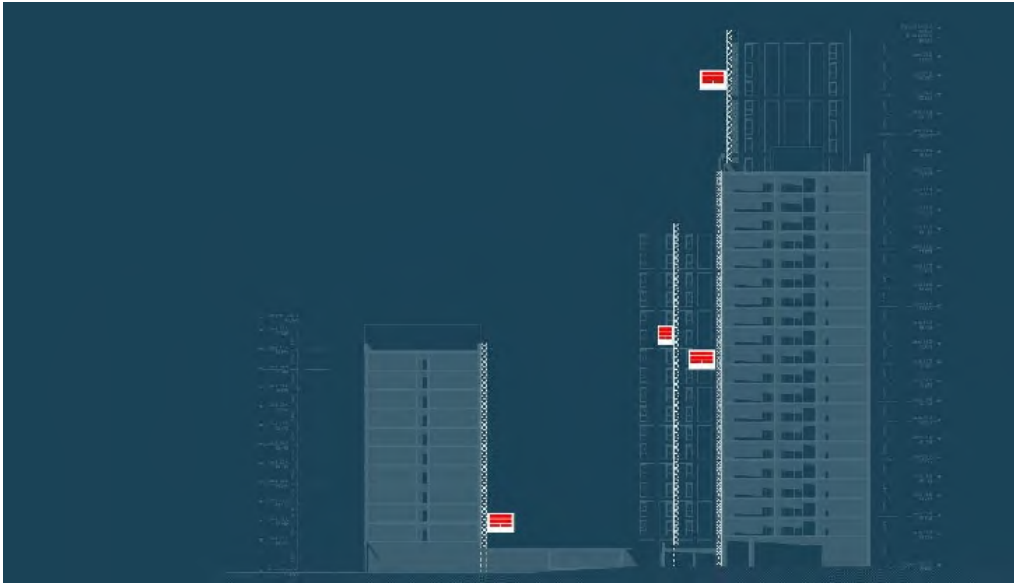


Figure 11: South-East Elevation

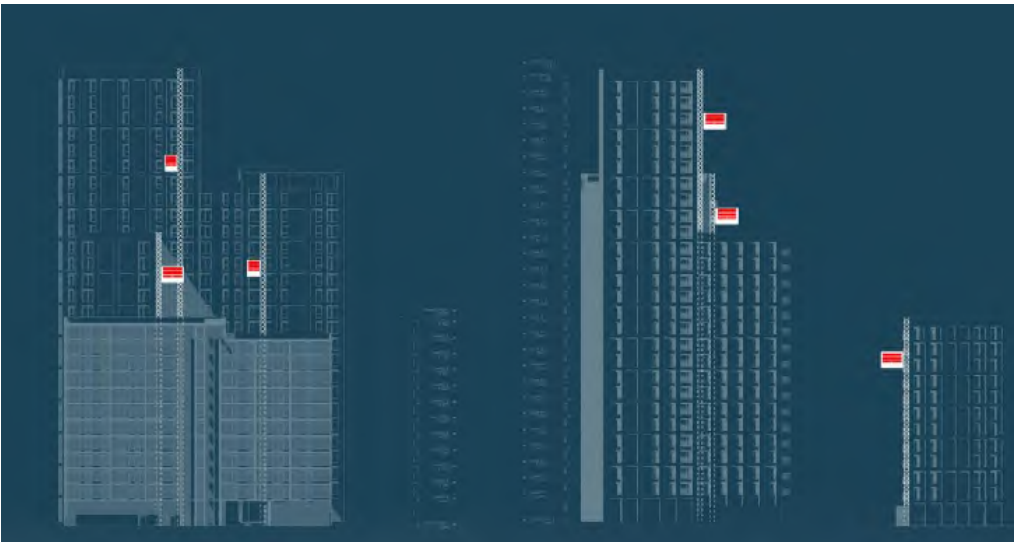


Figure 12: South-West Elevation

Figure 13: North-West Elevation

6.9 Delivery Route

All deliveries to site will be undertaken through an electronic delivery management system, managed by the construction logistics team, with all deliveries allocated a specific time slot. Typically, failure to adhere to the time slot may result in a sub-contractor's deliver being denied access to the site. There will be no waiting on the street for access to the site.

Construction vehicle traffic will be directed away from Manchester city centre and would be required to take the following route:



Figure 14: Traffic Management Plan

6.10 Delivery Management

Managing site deliveries is critical to the logistical planning and movement of a construction site with poorly managed deliveries causing significant project delay and disruption. All material deliveries will be planned to be off loaded and taken directly to the floor level where the materials are required or to be pre-assigned to lay down areas.

Effective and efficient delivery and material management will also promote safe operative movement around the site and allow for easier transportation of materials within the site by the sub-contractors.

A web-based delivery management system will be used to manage and control all collections and deliveries from the site.

A Delivery Manager will supervise all vertical deliveries, with the construction logistics team taking over all material distribution from delivery to the floor plate.

The access gates are to be manned and an operative will control pedestrian flow while the vehicle is being directed into the site. The gates will be designed as not to encroach on the footpath, highway or into the site. A similar process will be adopted for vehicles exiting site.

Operatives will ensure suitable pedestrian and vehicle segregation using extendable gates (or similar) on either side of the pedestrian walkway. This will ensure pedestrians do not cross vehicular paths, as well as ensuring they do not gain access to the site. The same arrangement will be provided at the exit gate from the site.

The Main Contractor will manage a Just-in-Time delivery policy for all site materials and deliveries.

6.11 Loading & Unloading

Materials must be pre-loaded in a manner that will ease off-loading and onward site handing e.g. palletised goods, pre-slung reinforcing and mesh, stillages or crates for flat panels and glass must clearly identify lifting/handling arrangements, with panels, glass sheets individually secured to stillage/crates where possible to prevent any load shedding during panel/glass removal. All such stillages must be stored on firm and level ground.

Suitable arrangements must be in place to provide access to vehicle loads where required e.g. for Banksmen (slingers/signallers) to eliminate persons needing to access the rear of vehicle and therefore minimise the risk of falling.

Loading & Unloading bays must have (as a minimum requirement):

- No unloading to take place at other locations;
- Concrete hard standing or equivalent;
- Road markings and clearly defined zone;
- Scissor type extendable metal barrier;
- Clear signage displaying 'permit to work area -lifting operations taking place';
- Connected crowd barrier controlling access/egress;
- Banksman – only Banksman and FL driver permitted to enter zone;
- Permit – white board named access rights and TC delivery;
- FL 360 degrees camera and 'zone' camera at suitable location.

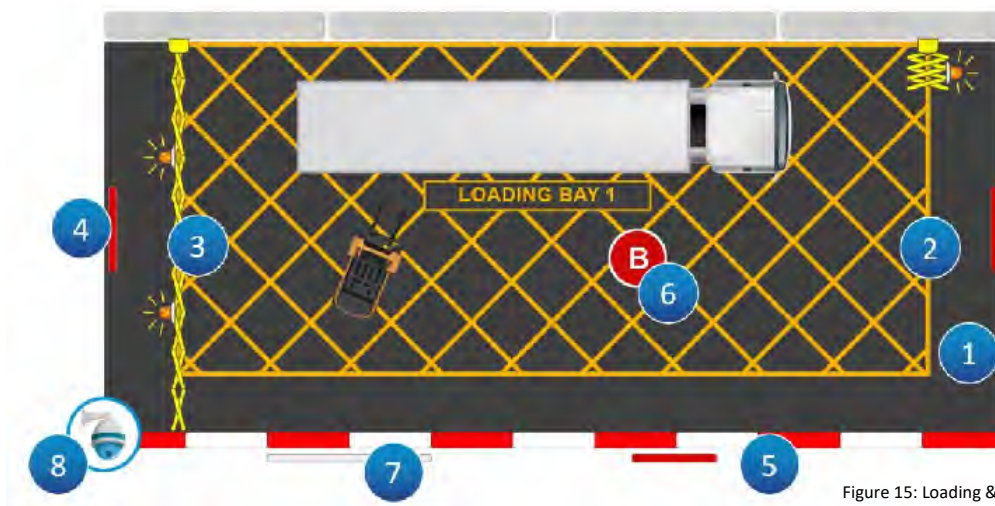


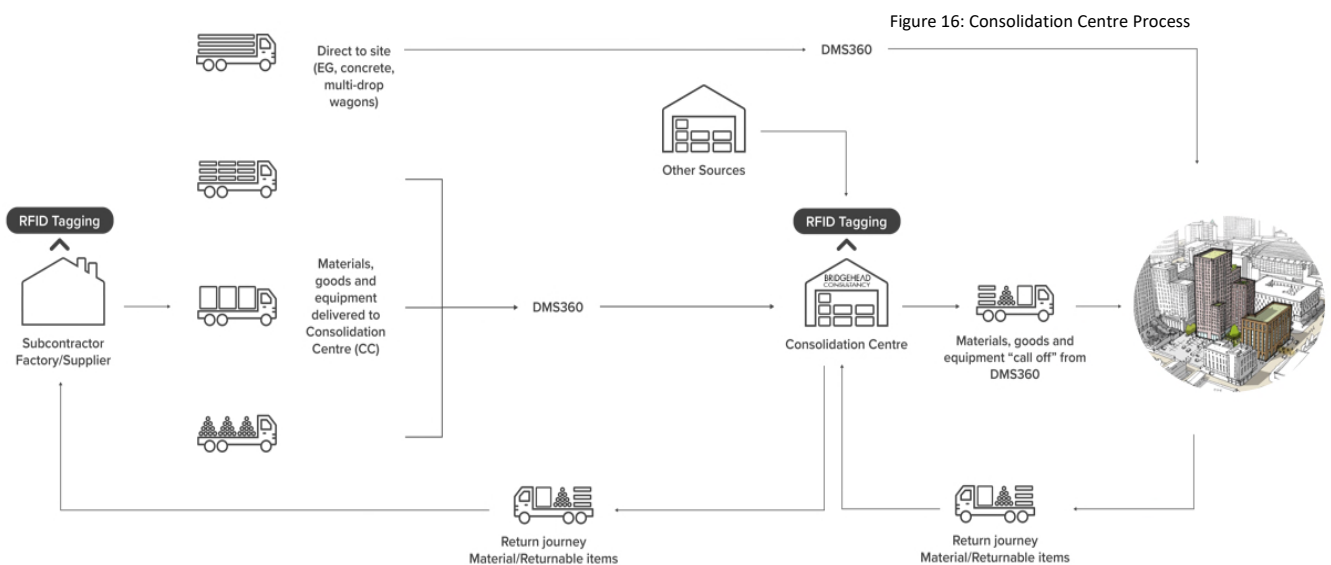
Figure 15: Loading & Unloading Bay

6.12 Consolidation Centres

Fragmented material supply chains as well as environmental and quality consideration have forced the construction industry to consider how it can evolve to ensure equipment and materials are delivered; Just-In-Time, on suitable vehicles and in the right quantities and condition.

The consideration and use of Consolidation Centres have become a popular solution to the aforementioned problems associated with material supplier chains.

The process for managing delivery and consolidation centres is based upon extensive planning and programming to ensure optimum efficiency in delivery and productivity promotion, whilst minimising traffic impact around site.



6.13 Public Path and Road Closure/Access

Full road closures are to be avoided throughout the works, with the primary proposals to only include parking bay suspension and pavement closures.

The current Project Development Programme proposes that public path closures (in purple) will be required to allow for the project foundation, ground floor, first floor and scaffolding to be erected.

The current timeframe for this stage is approximately 6 months, commencing October 2020 until end of March 2023. This timeframe is indicative and is subject to the Main Contractor's submission of the Project Construction Programme.

Public paths will then be reopened with public and project protection measures in place and they will include:

- Gantry and cladding
- Barriers at vehicle egress sites
- Placement of Traffic Marshalls to manage safety of pedestrians and vehicle movement
- Security CCTV



Figure 17: Pedestrian Path Closure

7 Waste Management

Control of waste material on site is a key factor in the successful outcome of a project and BREEAM requirements. The Main Contractor will agree and implement a Site Waste Management Plan (SWMP) at the commencement of the works. The strategy should be based around locating waste vessels in central locations.

Wheelie bins will be utilised to remove waste from the various work locations. Site operatives would then deposit the waste materials into the wheelie bins or larger items directly into the skips. The construction logistics team would then be responsible for co-ordinating the removal of the full wheelie bins and empty them in the correct allocated skips, with full bins being replaced with empty ones on removal.

Furthermore, the skips will be continuously replaced regularly to ensure space for waste material is always available.

Through the production of a sustainable procurement strategy, the Main Contractor will set targets for responsible sourcing of materials. This will use product certification such as FSC, ISO 14001, BES 6001 etc and will encourage products to be selected based on Environmental Product Declarations where possible.

The Main Contractor must have 100% chain of custody certification on timber products (i.e. FSC and PEFC) and will develop a black list of products/materials that are either harmful or come from unsustainable sources. The Main Contractor will also reduce the amount of waste to landfill through increased recycling and reuse of materials.

The BRE Smartwaste tool will be introduced to measure and benchmark the impacts of the site (CO2 emissions, energy use, water use, transport to and from site and pollution).

Sub-contractors are to actively investigate measures to reduce the level of CO2 created as a result of their activities.

This will include interrogating the supply chain to identify opportunities to eliminate part-loads and gain full visibility of the supply chain to ensure that the correct materials are being manufactured in line with the developing programme for delivery site in a truly Just-In-Time basis.

Delivery miles to site, fuel type, vehicle type and size will be recorded for all vehicles attending the site.

8 Site Security

The site security for the project will be in operation from the outset. The traffic management plan is to be integrated with the site security plan to enable effective access and egress to the project, thus minimising disruption to local traffic, businesses and stakeholders.

Paying specific attention to access and egress touch points, working with a Security Industry Authority (SIA) approved security contractor, the Main Contractor will deploy static site guarding and mobile patrol services to act as a deterrent to non-authorised personnel and carry out checks to those entering the project on a daily basis.

Combining physical checks with biometric, facial recognition and access control systems, the Main Contractor will be able to give a true account of who is on and off site at any time.

Physical security barriers are to be installed to provide a deterrent to unauthorised access to site with Closed Circuit Television (CCTV) to be installed at intervals of no more than 20m apart.

The internal and external boundaries of the site will be patrolled regularly in line with the approved risk and threat assessment with clear site security signage displayed around the external perimeter of the project.

The security team will liaise with the local police Safer Neighbourhoods Team (SNT) to share intelligence and ensure mutual understanding of any threats. This will include but not be limited to creating and agreeing a stakeholder escalation and reporting protocol.



9 Operative Travel

It is anticipated that the majority of construction workers will travel to the site by public transport and personnel will be given detailed information on travel options.

10 Vehicular Histogram Analysis

In the early stages of the project there will be a variety of vehicles, plant and equipment requiring access to the site. Some of the vehicles will access the site on a regular turnover basis and some on a one-off or infrequent basis.

SUMMARY OF VEHICLE TYPE, USE AND DISTRIBUTION		
Vehicle Type	Use	Distribution
Rigid Heavy Goods Vehicle	Excavated material Removal	Strategic road network to motorway
Small Articulated Vehicle	Plant, steel bar, bricks and cladding panels	Strategic road network to motorway
Specialized Articulated HGV	Tower crane erection & dismantle, Mechanical & electrical Plant, facade panels, Roofing materials	Strategic road network to motorway
Specialised Equipment Low loader	Occasional Delivery of Plant	Strategic road network to motorway
Vans	Plant service, materials, other Suppliers. Existing tenants deliveries	Distributed to local and strategic network
Cars	Occasional deliveries, Couriers etc.	Distributed to local and strategic road network

Figure 20: Vehicular Histogram Analysis

Figure 21: Summary of Vehicles

11 Potential Impacts During Construction

A review has been undertaken of the potential source of adverse impacts, which can be associated with carrying out construction works. The results of this are presented in the table below:

POTENTIAL IMPACTS AND HEADLINE MITIGATION MEASURES DURING DE-CONSTRUCTION AND CONSTRUCTION		
Issue	Potential Impacts	Mitigation
Noise	Increased road noise levels from vehicles. Increased noise levels from plant during excavation, piling and general construction works (e.g. from the use of air compressors and diamond cutters).	Defined working hours, baffles to certain plant, local acoustic screening. Vehicle routing. Beepers, radios etc. to be silenced. Engines turned off and all measures outlined in the considerate constructors scheme.
Vibration	Increased vibration levels from vehicles. Increased vibration levels from plant during de-construction, piling and general construction works. Defined working hours. Selection of appropriate plant and work procedures.	Phased deliveries to minimize numbers of vehicles attending site. Vehicle routing. Engines to be switched off when vehicles are idle or on site
Dust / Air Quality	Windblown dust from ground surfaces, stockpiles, vehicles, work faces and cutting and grinding of materials. Exhaust emissions from lorries and plant delivering and removing materials including dust and particulates.	Cover all open backed vehicles, 'water down' de-construction activities; switch off vehicle engines when parked. Regular and controlled monitoring of air quality, including agreement and implementation of trigger and action levels
Waste	Waste generation and its disposal.	Instigate Site Waste Management Plan and re-cycling program.
Water	Increased sediment loadings to storm water system. Potentially contaminated storm-water runoff.	Do not allow direct discharge of water into sewerage collection system.
Traffic	Traffic congestion caused by site traffic. Local traffic diversions will be required for tower crane erection and dismantle and mobile crane lifts. Increased vehicle movements mainly consisting of Heavy Goods Vehicles (HGVs). Nominal levels of transfer of mud and material from vehicles onto the public highway. Disruption from abnormal or hazardous loads. Exhaust emissions.	Phased deliveries to minimise numbers of vehicles attending site, switch off vehicle engines when parked, minimise abnormal loads. Vehicle routing.

Storage of fuels and construction materials	Accidental spills, discharges to drains/storm-water systems. Contamination to ground.	All fuel tanks etc. to be bunded, no discharge allowed into the sewerage collection system.
Pedestrian access	Restrictions on pedestrian access to walkways, footpaths and roads.	Erect protective gantries / Pedestrian tunnels over footways.
Hazardous and contaminated materials	Exposure of the workforce to deleterious / hazardous materials and contaminated land, mobilization of any source contaminants and creation of pathway from source to groundwater receptor.	Site investigation reports to indicate if any contaminated fill is present. COSHH assessments and careful implementation of associated working method statements to ensure that no hazardous materials find a path to groundwater source.
Ecology	Water / mud run off into the drains.	Do not allow direct discharge of water into sewerage collection system, utilize interceptors where necessary.
Energy usage	Indirect impacts associated with energy consumption such as CO2 emissions, depletion of natural resources, air pollution etc.	Site environmental plan to implement.
Views	Views impacted and/ or impeded from construction equipment, particularly Cranes.	Tower crane to be positioned to have minimal impact upon adjacent views

12. Safety, Health, Environmental & Quality

The management of safety, health, environmental & quality is a crucial element to all UK construction sites. Construction sites are high-risk areas which can present life threatening situations if not properly managed.

The site will be managed in line with the Construction (Design and Management) Regulations 2015, and all associated legislation, including environmental responsibilities placed on the duty holders. The duty of care owed to those directly involved, and those indirectly affected by the project, will be recognised and managed in line with regulatory guidance, and industry best practice.

One of the aims of this plan is to facilitate the safe and timely completion of the project, while ensuring that clear lines of communication are always available to those with an interest in the project, and those in the local community looking for reassurances for their own interests.

The health, safety and well-being of all individuals associated with the appointed Main Contractor, supply chain and stakeholders is an integral part of the site operation. To

safely and efficiently manage the site, the following areas will be required as part of the site establishment:

- Clear health and safety information and signage in the offices and worksites, holding regular toolbox and site talks as well as issuing internal communications via email and notice boards.
- Before any member of the team enters the site, whether one of the appointed Main Contractor's own workers or part of the supply chain, they must have undertaken the relevant induction training, hold the correct qualifications and are equipped with the correct PPE.
- Due to the scope of the site, there is going to be a consistent need to ensure clear walkway and access between the buildings and well marked safe access and egress across the site.
- Health and safety are a mandatory aspect of all site operations, focused on ensuring the safety, well-being and protection of the workforce at all times.

12.1 Fire Precautions

All fire precautions will be taken and fire checks will be made at the end of each working day, before personnel leave the site. Fire points will be set up within easy reach of the work areas, storage points and hot works locations. Throughout the works, 'hot works permits' will be required as standard for all hot works. The process will be managed by the appointed Main Contractor.

12.2 Fire Alarm

Each building will be temporarily fire alarmed back to separate security monitoring areas. The appointed Main Contractor will agree fire communication, evacuation strategies, drills for both themselves and relevant third parties.

12.3 Emergency Evacuation Procedure

Contact names and phone numbers will be made available in case of out of hours emergencies relating to the site. This information will be drawn up and prominently displayed on site by the appointed Main Contractor.

The site offices will also have their own plans drawn up with site evacuation routes clearly marked on site (inclusive of fire extinguisher points) and practice drills being carried out regularly.

12.4 Fuel Management

All fuel will be stored in bunded tanks away from any surface water drains or gullies. Emergency spill kits will be suitably available on site.

12.5 Unexploded Ordnance Survey

The four key areas that have been assessed are all considered to be low or very low risk, as summarised below:

- WWI Aerial Delivered Ordnance – Very low risk.
- WWII Aerial Delivered Ordnance – Low risk.
- Former Military Use & Alliance Ordnance – Low risk.
- Aircraft Crash Site – Very low risk.

The Main Contractor will produce an emergency plan detailing actions to be taken if a UXO is discovered. Any person working in the ground (site investigation surveyors, piling contractors, ground contractors or similar) are to undertake a UXO briefing as part of the initial site induction and for regular completed toolbox talks.

12.6 Flood Risk & Surface Water Drainage

The flood risk & surface water report has found the site is at low risk of flooding from most sources. The surface water drainage strategy for the new development site will be to discharge surface water discharge into Great Ducie Street.

Attenuation has been proposed in the form of geocellular storage (subject to detailed design). The new surface water networks will be designed in line with current British Standard and Sewers for Adoption Guidance up to the 100-year storm return period including an allowance for climate change.

Beyond the 30-year criterion out of chamber flooding may occur and flood water will be directed away from the building to the external areas, where it will then be directed back into the drainage network as pipe water levels recede.

12.7 Considerate Constructors Scheme

The appointed Main Contractor, sub-contractors and consultants will be required to enrol and comply with all the requirements of the considerate constructor's scheme, which is administered by the Construction Industry Board.

This voluntary code of practice seeks to:

- Minimize any disturbance or negative impact (in terms of noise, dirty and inconvenience) sometimes caused by construction sites to the immediate neighborhood;
- Eradicate offensive behavior and language from sites.
- Recognize and reward the contractor's commitment to raising standard of site management, safety and environmental awareness beyond statutory duties.

Principally, the requirement will be for all stakeholders to pay their employees the Real Living Wage as defined by the Living Wage Foundation. There will also be a requirement that all apprentices are to be paid the adult minimum wage rather than the under 25 value (same wage for the same job regardless of age).

Contractors must also provide safe sites to work on and live near to. Therefore, the requirement is to operate to high standards of Health & Safety and set targets for significant reductions of AIIR (accident injury incident rates).

12.8 Wheel Wash Management

The site has designated loading area that will also serve as wheel wash areas for vehicles leaving the confines of the site.

A road sweeping machine will be periodically employed as required to either brush clean the roads around the site or in periods of dry weather wet down the highway to control the dust.

All ground or surface water run-off will be strictly controlled in line with environmental legislation and best practice to prevent pollution of drains and watercourses.

12.9 Dust Suppression

Some activities have the potential to create large amounts of dust. During these activities the following dust suppression methods can be utilised:

- The use of filters to remove particulars from the air. This method is particularly useful in small and enclosed spaces. It is not to be used outdoors or in large areas.
- Dust extraction can be used to remove dust from the air into a central receptacle i.e a vacuum. This is particularly useful for specific tasks such as cutting or drilling.
- Water based dust suppression will be used for large scale dust suppression. The dampening down of material before, during and after breaking, cutting or disturbing. The use of a garden hose, pressurized water canisters or water misting cannons.

When reasonably possible working methods can be enacted to prevent the create of dust altogether. Some activities such as demolition to use dust suppression at all times during works. Dust suppression methods will be in line with the principles and recommendations of the 'Control of Dust and Emissions from Construction and Demolition – Supplementary Planning Guidance *July 2014 London Plan 2011)' and the 'Control of Dust from Construction and Demolition Activities'.

A road-sweeping machine will be periodically deployed as required to either brush clean the roads around the site or (in periods of dry weather) wet down the highway to control the dust

Dust suppression will be controlled at the working face and will be carted away area by a fine water supply. The quantity of water emitted by the sprays will be regulated and controlled to prevent any flooding at the ground water level.

12.10 Noise Pollution

Unless specified otherwise works will be in accordance with the standards set out in B.S 5228:2008 Code of Practice of Noise Control on Construction and Open Sites with all

reasonable steps taken to minimise any noise disruption to adjacent businesses and residential properties.

Operatives working in noisy areas will be monitored to ensure they are wearing the necessary protective equipment and that they are not exceeding their permitted exposure periods.

Where it is necessary to carry out noisy activities, these will be identified well in advance by the Main Contractor and the timing agreed prior to commencement. Particularly noisy activities such as piling will commence after 9am.

Several methods are to be taken to mitigate noise levels and the nuisance caused including.

- The use of acoustic barriers. These are best suited to noise coming from a particular area and can be fixed to fence panels to surround the noisy works. They are most effective when they are as close to the noise creation as reasonably possible.
- The use of electricity from the incoming main, avoiding the use of generators on site.
- The banning of radios and other speakers for non-construction related activity.
- The use of modern plant and machinery.
- Pneumatic tools used only when a reasonable alternative is not available and fitted with mufflers or silences when reasonable possible.

All plant and equipment to be used for the works will be properly maintained, silenced where appropriate to prevent excessive noise and switched off when not in use and where practical.

12.11 Vibration Suppression

To mitigate vibration absorbed by operatives (HAVS) all tools will be checked for their HAVS rating and used in accordance to the HSE recommendations on safe working time using the Ready Reckoner.

Should the tools have vibration reduction options, these must be used at all times.

To prevent ground vibrations (which could compromise structure), continuous ground vibration monitoring is to be installed with any construction activity deemed to create high levels of vibration.