

Project Land S. East Side of A12, Old Ipswich Rd, Ardleigh CO7				Job Ref. 23.036
Section Construction Method Statement (CMS)				Sheet no. 1
Calc. by MA	Date 30/11/2023	Chk'd by FM	Date 30/11/2023	Doc No. REP-ST-23036-00

Land S. East Side of A12, Old Ipswich Rd, Ardleigh CO7 Construction Method Statement (CMS)

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Rev	Date	Comment
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1.0 Introduction

Beta Design Consultants has been commissioned by HT Industrial Ltd to produce this Construction Method Statement to help discharge of condition 14 (Full construction method statement/strategy), identifying specific best practice standards and procedures for the demolition of existing structures consisting of 4 buildings of various sizes and the construction of a new contemporary warehouse with a B8 use class circa 22,000 sqft with associated yard space, parking and ancillary refuse and cycle storage at Old Ipswich Road, South East of the A12 in Colchester. Compliance with this document will be obligatory for the Contractor, when appointed, and it is offered in response to Condition 14 of Planning Permission reference: 23/30086/PREAPP.

These standards and procedures will ensure that the interests of local residents, businesses and the public are given special attention by the Contractor during the works duration. This report identifies how the critical demolition & construction activities will be undertaken, and specifically covers the proposed methodology and logistics. Further information covering the environmental, public health and safety aspects of the proposed development can be found in the associated Construction Environmental Management Plan

This document details:

- Construction scope, methods and sequence
- Delivery arrangements and loading and unloading of vehicles;
- Storage of Plant and Materials;
- Hoardings and scaffolding;
- Wheel washing;
- Control of dust and dirt during construction;
- Noise and vibration;
- Air Quality; and
- Waste management and recycling.

There is a large body of environmental and safety requirements relevant to construction projects, in the form of primary legislation (Acts of Parliament), secondary legislation (Statutory Instruments, including Regulations and Orders) and statutory guidance and Codes of Practice. The Contractor will be responsible for identifying new legislation and regulations, and complying with all prevailing legislation at the time of construction including any requirements under Health and Safety legislation.

By submitting this document, the developer undertakes to comply with its requirements by appointing a competent contractor who will have fully reviewed this document and endorsed it. The developer shall also appoint a project manager who will ensure that the contractor adheres to the measures proposed in this report during the various execution stages.

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2.0 Site Address

The existing site comprises four buildings of various sizes located on Old Ipswich Road, South East of the A12 in Colchester. It is surrounded by fields and a hard-standing area, mainly used as industrial units.

2.1 Site Location Plan

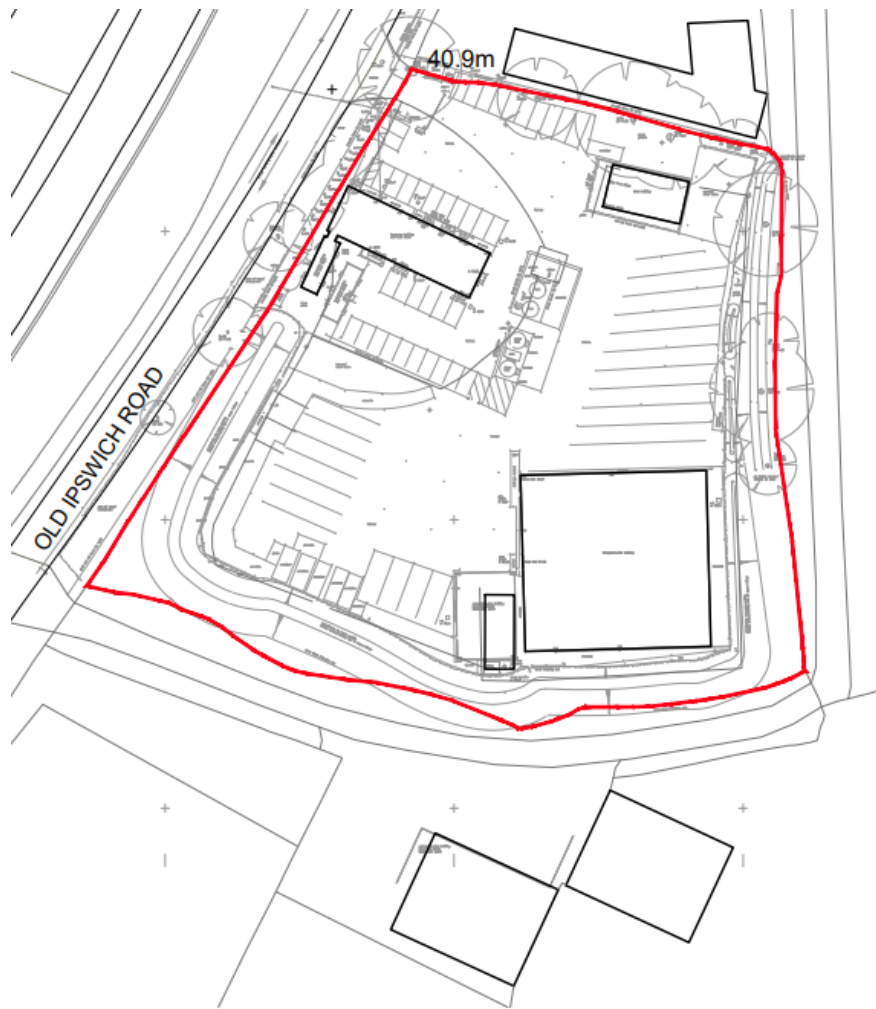


Figure 1: Site plan with the proposed development (red boundary)

The proposed site is located in close proximity to the A12 dual carriageway and within the Tendring District Council. The proposal looks to demolish the existing industrial units and to construct a new contemporary warehouse similar to surrounded industrial and office spaces.

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3.0 Nature of the Project/ Scope of Works

3.1 Scope of Works

The Proposal is for the for the demolition of existing buildings consisting of four buildings of various sizes and the construction of a new contemporary warehouse with a B8 use class. Remodelling and alterations to yard space, parking and ancillary refuse and cycle storage.

The proposed project involves:

- To construct a storage warehouse (B8 Storage and Distribution Use Class) alongside associated development.
 - The ground floor of the building will be used as warehouse space (2271m² of floor area).
 - A section of the ground floor will incorporate the stair core and platform lift which will also have associated amenities.
 - The first floor (mezzanine floor) will have an office space of approximately 195m² with associated amenities including a WC, disabled WC and tea room.

Key environmental issues warranting the contractor's particular attention are:

- Minimal disturbance of neighbours through noisy and dusty activities;
- Management of deliveries and traffic via Old Ipswich Road;
- Maintaining a Considerate Constructor's approach to the project throughout

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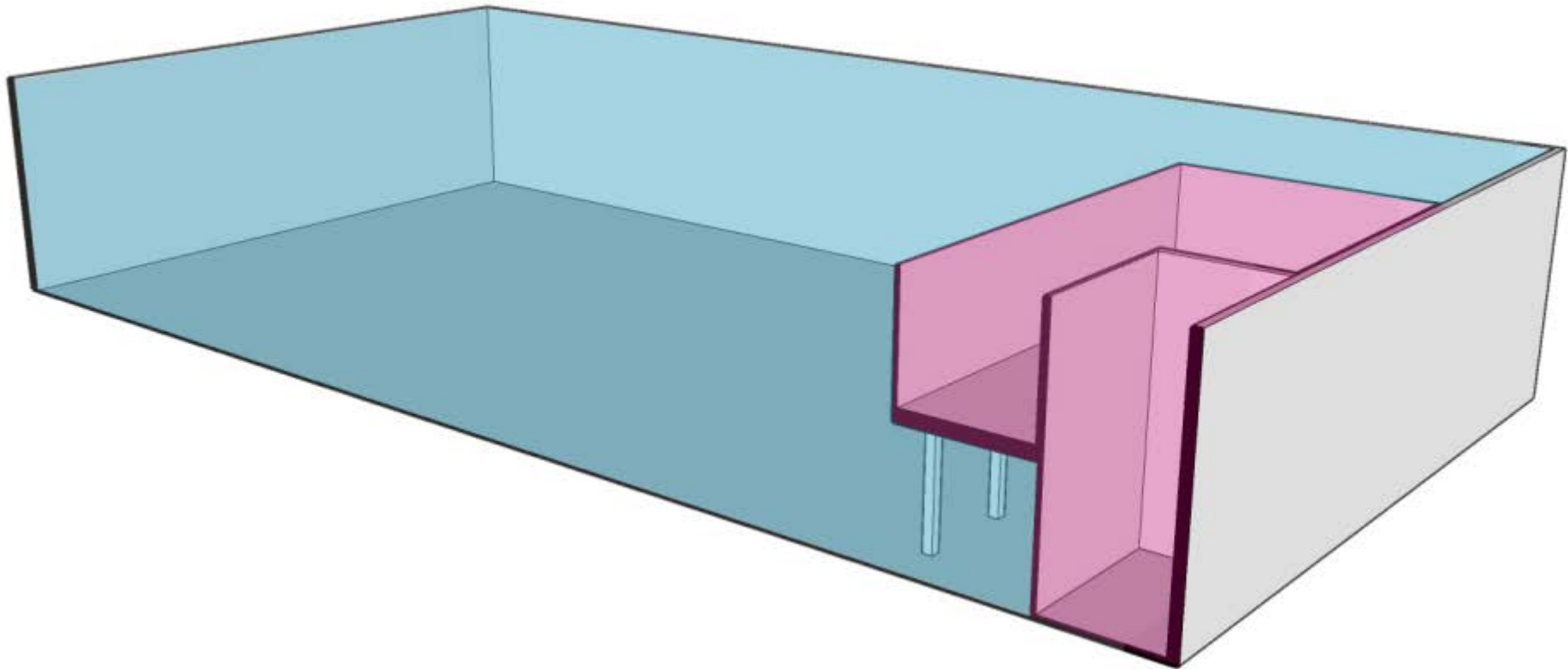


Figure 2: Isometric view of the warehouse

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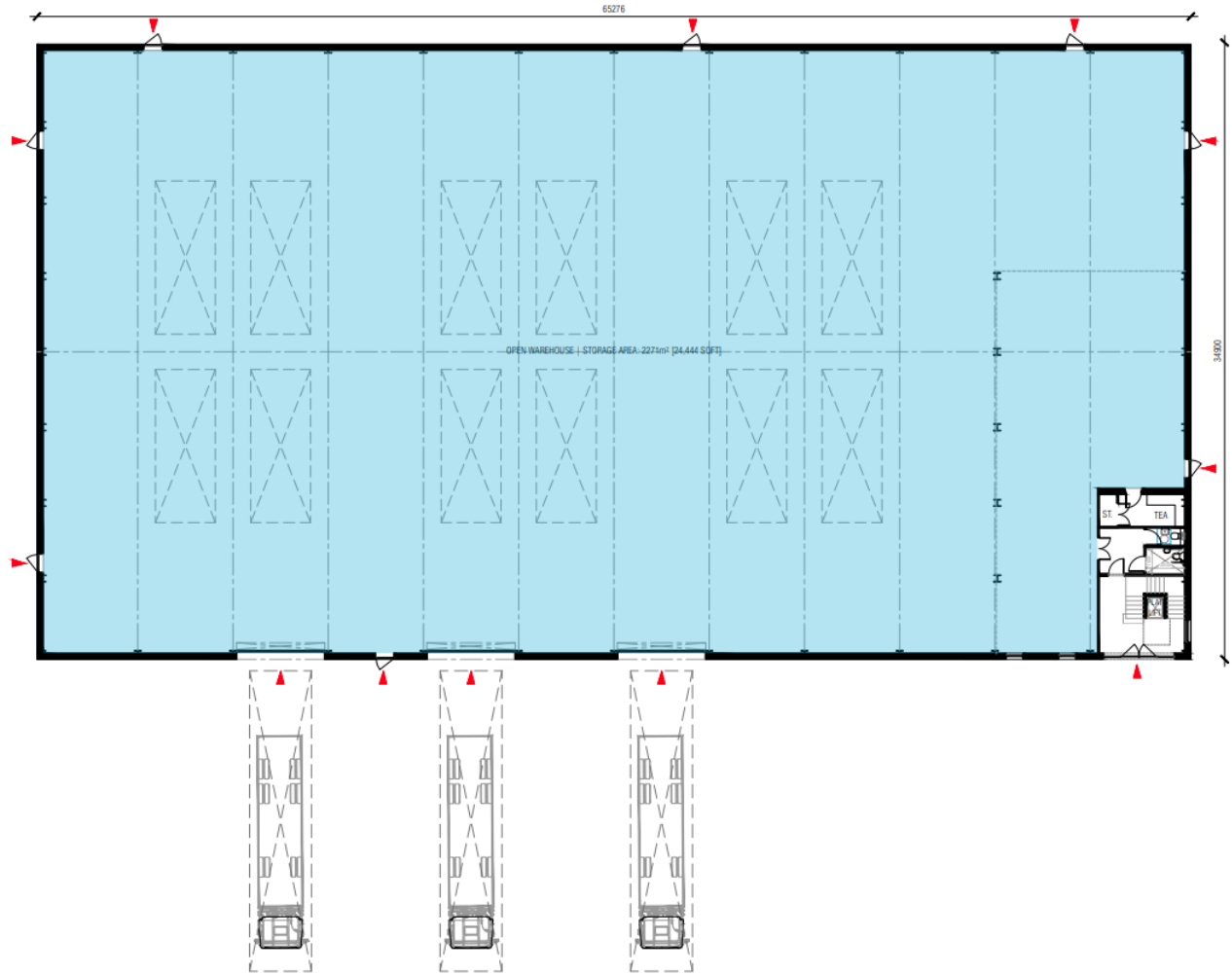


Figure 3: Proposed ground floor plan

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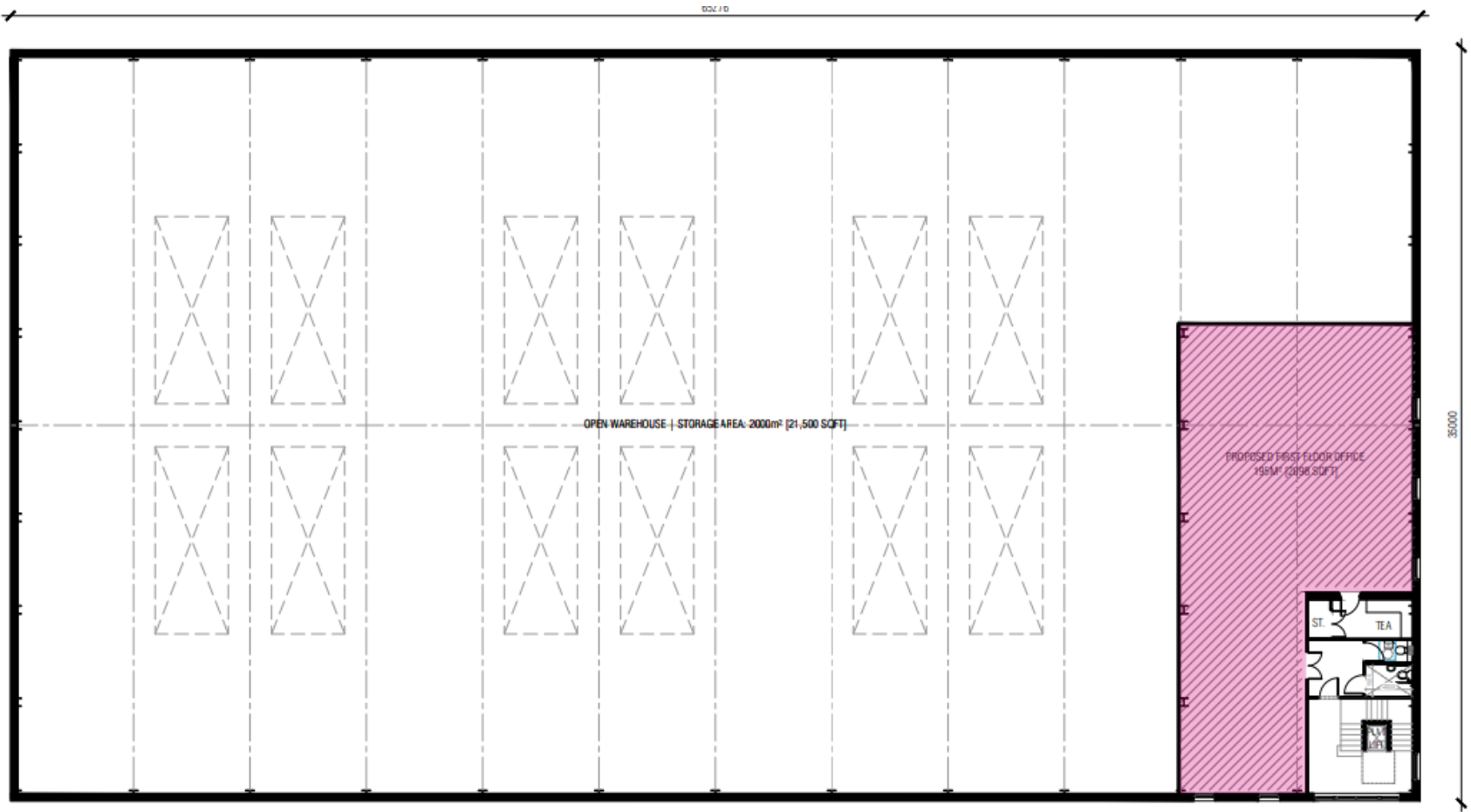


Figure 4: Proposed first (mezzanine) floor plan

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4.0 Methodology for Demolition, New Construction, Sequence and Programme

The overall demolition & construction programme that includes enabling shall be agreed with the contractor but is estimated at 12 months.

This section of the document will identify the specific methodology that we have identified for the project.

It is currently envisaged that the scheme will be delivered in a single-phase encompassing demolition and construction to completion.

The project can be broken down into a series of discrete sub projects. In summary, these consist of:

- Pre-start enabling works;
- Site Establishment, including hoardings, scaffolds and temporary services;
- Soft Strip & Demolition, in readiness for new construction;
- New structure and envelope;
- Fitting out, mechanical & electrical services, commissioning and setting to work;

The demolition subcontractor is required to carry out a risk assessment and identify all possible measures to be implemented to reduce risks on site to their operatives and to the members of the public. A method statement shall be submitted to the client to show how this would be implemented.

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4.1 Pre-Start Enabling/lead-in works

Prior to commencement of works a period of pre-demolition planning and activities will be carried out to ensure works can be undertaken efficiently. Certain elements of these works will require third party approvals.

- Production of detailed, task specific Construction Method Statements in accordance with the Code of Practice.
- Mobilisation of selected plant and operators.
- Formulation of the project Construction Phase Plan and risk assessments.
- Contractors Community Liaison Officer to be named and to commence direct liaison with the Public Protection and Street Management Divisions.
- Formulation of Site waste management plans and environmental plans as per the current DEFRA guidelines.
- Production of detailed works programmes and sequencing.
- Surveys of existing services and structures to confirm demolition methodology and load taking capacities.
- If damage is expected to highways and pavements that are owned by the local authority (e.g. due to excavations, removal of structures, or as a result of any site activity), then the contractor shall carry out a condition survey to highways, pavements and surrounding area and these shall be agreed with local authority prior to commencement on site.
- Services investigations for temporary supply purposes.
- CCTV surveys of existing drainage (completed during the design stage).
- Hazmat and asbestos notifications (ASB5) to the HSE for removal of Asbestos Contain Materials recorded in the demolition and refurbishment (D&R) survey.
- Licence applications and approvals for hoardings, scaffolding, and agreement of general site layout with local authority prior to commencement of any works.
- Baseline environmental monitoring.
- Section 80 of demolition notice and approval in place from the local authority.
- Neighbour liaison before the commencement on site to explain the nature of works. Ensure neighbours are advised by leaflet drop, two weeks before works commence as a minimum. Direct contact to be made with immediate neighbours to discuss construction methods.
- Temporary works design.
- Pest control site baiting a minimum of 2 weeks before commencement
- Section 61 (noise) prior notice agreement to be made with local authority.
- Six weeks' notice to be given for any road (and pavement) closures or crane lifts required in the early stages of the contract.

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4.2 Site establishment and logistics

Site establishment is the preparation of the site to carry out the demolition and enabling process. This activity is generated from vacant possession of the site and will include the following activities:

- Securing the site with the erection of a full height close boarded hoarding.
- Hoardings will be 2.4m high, decorated, with clear pedestrian diversion signs and the required notices of Contractors Contact details. Bulkhead lighting to be provided at 3m centres.
- Vehicle and pedestrian access to the works will be via separate entrances controlled by fully trained gatemen and traffic marshals.
- Installation of site temporary electrics, lighting, water, drain connections and fire alarms.
- Establishment of site security provisions to ensure that the site is protected against unauthorised or unlawful entry and potential theft from site.
- Diversions of existing utilities as required and isolation of existing services and systems within the building will be carried out at an appropriate point in liaison with the statutory service providers.
- Erect a lifting beam at first floor level for offloading steel and CLT components directly from the front of the building
- Erect a lifting beam at roof level to transfer structural components from the 1st floor gantry to the workforce
- Establish welfare and site office arrangements inside the existing building.
- Emergency routes on site to be specified and clearly signposted.

Upon receipt of vacant site possession, appropriate notifications will be served and licences applied for removal of any remaining asbestos containing material (ACMs). ACM's will be removed by a licenced contractor in accordance with current legislation.

Preparation of the Site and buildings for the demolition activities will involve installation of the site hoarding, scaffolding and sheeting. The site hoarding is proposed to be installed on the pavement, outside the perimeter of the Site at ground level, and will remain on-site throughout the construction phase. It will contain all requisite lighting, safety and directional signage. Hoarding material will be pre-used ply and timber if possible.

The condition of the structure and construction techniques would be investigated to provide as much information prior to de-construction commencing.

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4.3 Soft Strip and Demolition

Demolition of the existing four buildings will be a carefully managed process that can be considered deconstruction. Demolition will be preceded by the careful identification and cutting off or diversion of all services to the top levels of the site.

Access into the site will be through the main road (Old Ipswich Road). A method of working shall be submitted to the HSE (ASB5 notification) in order to complete removal of any ACMs identified in the D&R survey.

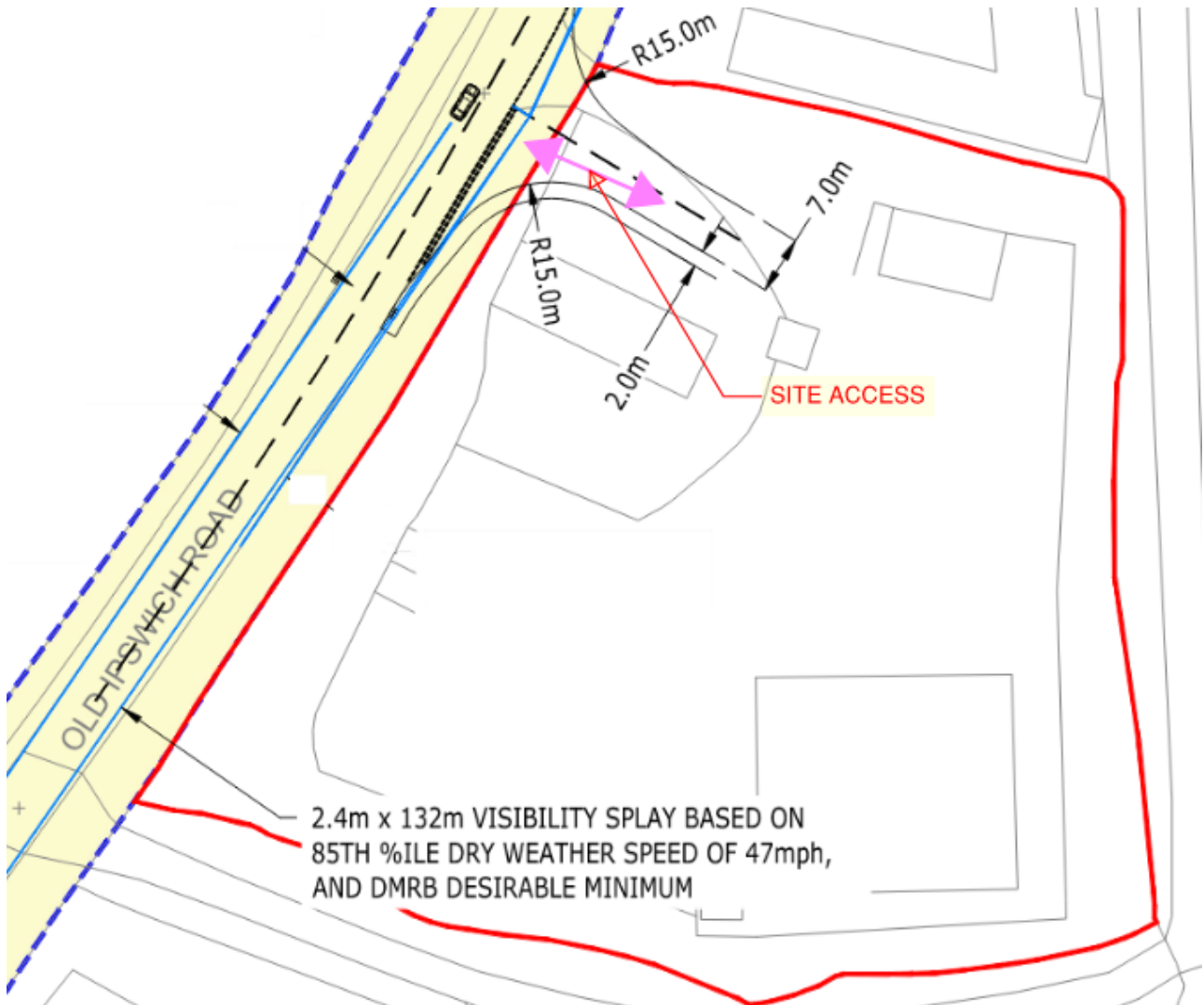


Figure 5: Site Access

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4.3.1 Soft Strip

The first operation will be to isolate any live services to each part of the building. An advance survey of all existing services will have been carried out in the pre-construction phase to highlight termination points.

The asbestos removal and soft strip of all fixtures and fittings within the existing structures will be carried out, working from the roof level downwards. Stripping will be carried out manually using hand-held tools.

The works will be accessed from the existing floor levels or from aluminium towers, erected by competent, trained operatives. As the materials are stripped, they will be removed to the ground floor level by wheelie bin via the platform hoist. The bins will be loaded away to a compactor lorry in the kerbside loading area in Old Ipswich Road.

Pipes, conduits, and other non-structural metalwork may be cut out using oxygen/ propane burning equipment, or angle grinders. A 'Hot-Works' permit to work system will be enforced when any works of this nature are undertaken and fire extinguishers will be prominent. Hot works will cease two hours before the end of a working shift and the area will be thoroughly checked prior to breaks or to leaving site.

It will be impressed on the workforce that the site has a 'No Smoking' policy except for in a designated area, externally. Windows will be opened for the purpose of ventilation. Oxygen and propane bottles will be stored upright in a lockable cage.

By regularly removing the accumulated debris, the potential fire risk that loose combustible material imposes, is minimised or removed. Where possible, soft strip will be processed and segregated on site before removal. Otherwise, materials will be taken to a recycling centre for segregation off site.

4.3.2 Structural Demolition

The existing building is a relatively light, framed and panelled structure. As such, much of the demolition operation is expected to be manual, using hand tools. The contractor may wish to employ a small robot excavator, fitted with hydraulic breakers and appropriate shear & grapple attachments to assist in the deconstruction (a Brokk or similar machine).

Redundant structures and walls will be stripped and taken apart using hand held tools or Brokk robot. The debris will be broken down, processed and separated on site to increase the efficiency of debris removal.

General waste arising from the strip out and deconstruction will be removed to wheelie bins, as for the soft strip. Larger pieces of steel will be lowered to the ground floor for loading away during permitted hours.

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Careful consideration must always be given to the stability of the building. Any load bearing components to be identified prior to de-construction commencing to ensure that they are maintained until structurally redundant or replaced with temporary works while new structure is formed.

Dust emissions will be controlled at the working face and loading away area by a fine water spray. The quantity of water emitted by the sprays will be regulated and controlled to prevent any flooding. Storage times on site will be minimised by regular removal of unwanted material in order to further reduce the risk of dust escape.

To ensure that the impact of the construction is kept to a minimum on this project all demolition would be controlled under a section 61 prior consent application in accordance with the local authority guidelines.

4.4 New Structure & Envelope

Following demolition of the existing building and preparation of pad foundations, the new steelwork for the warehouse will be delivered and placed on the casted pad foundations with the use of cranes.

The new floors are industrial for the ground floor and steel framing for the first floor (mezzanine). The frames will be erected using cranes to position and erect columns and beams. Floor, bracing and roof will be lifted to position in the same manner and manually distributed as steel is erected.

Envelope materials for the new structure comprise panelised cladding and roof finishes which will be delivered via the lifting beams and platform hoist for construction from the scaffold or from mobile-elevated working platforms (MEWP) or via use of crane, depending on the Risk Assessment and Method Statement to be prepared by the main contractor or his steel installation sub-contractor. It is important that the cranes stand on firm ground, using plates to spread the loads and the bearing capacity of the ground should be more than the applied concentrated forces below the spreader legs of the cranes.

If scaffolding is used, it will be maintained to provide access and edge protection as work proceeds. Materials will be delivered in small loads on vehicles that can conveniently negotiate Old Ipswich Road.

4.5 Fitting Out

The full scope of the building's fit out remains subject to future letting arrangements but at this stage it is expected that the toilets will be fully fitted out under the main contract, together with a "CAT A" fit out of the office areas.

When the envelope is sufficiently watertight, the first fix fit-out and services installations will proceed. Larger items of plant will have been delivered and placed during the structural interventions phase for ease of access, and left protected for connection during the fit out stage.

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Materials will be delivered in small loads and manually offloaded for distribution via the platform hoist in the courtyard.

Service connections, commissioning and setting to work will be undertaken as the project nears completion, in parallel to external works.

4.6 External Works

The new structural opening to receive the pavement lights will be formed in the structural works phase, phased to allow a delivery route to be maintained to the courtyard hoist Courtyard finishes and new planting will be the final operations as the fit-out nears completion, when hoardings and gates will be finally removed

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5.0 The Construction and Management of the Site

This section outlines the requirements relating to site management practices, ranging from the location of accommodation and equipment to the operation of equipment on site. It outlines a number of procedures that should be implemented during site operation.

These relate to:

- Working hours,
- Site layout,
- Appearance, and
- Good housekeeping.

Representatives from the Contractor (and if required from the local authority) should regularly inspect the construction site to ensure that these procedures are adhered to. The Contractor must follow a 'good housekeeping' policy at all times. The site should be cleared by the Contractor on completion of the development.

The specific measures to be implemented by the Contractor will include:

5.1 Development Site Layout and Welfare Arrangements

Site layout plan for the development of the site including locations of the site office, material storage areas, waste storage areas, staff parking, vehicle access points, wheel wash locations, delivery loading / unloading areas and details of site hoarding.

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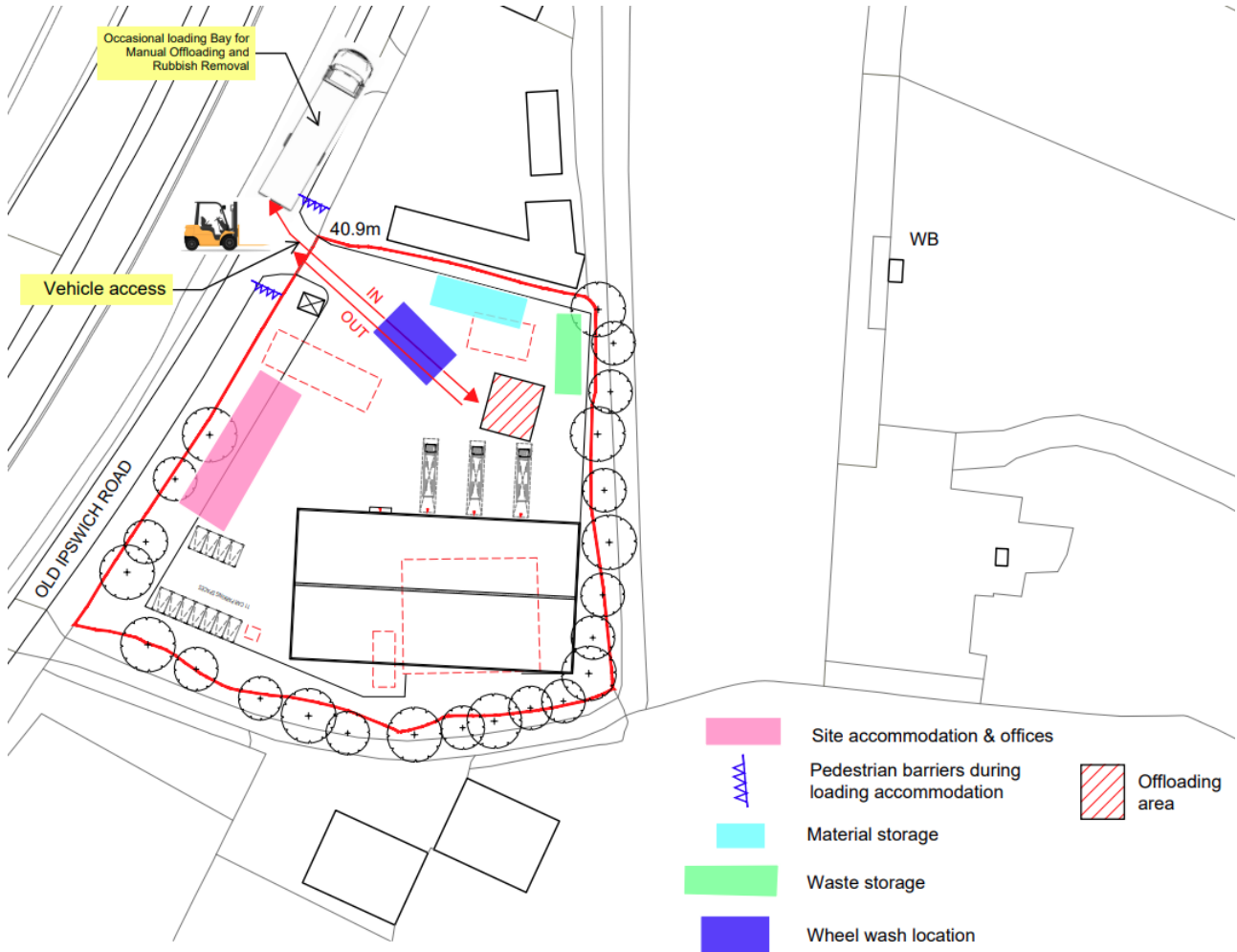


Figure 6: Development site plan

The site will have a Site Office which is a purpose-built container with an office / meeting room, toilet, sink and kitchen area. This is 3m x 2.4m in size and will be located to the front left of the site. The welfare Facilities will be located to the rear left of the site and will include a toilet and hand basin, drinking water, a place to store clothing and somewhere to rest and eat meals. There is space on site for 1 vehicle, which will be reserved for emergency use, e.g. by visitors, or building inspectors as well as to store cycles.

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5.2 Site Personnel and Visitors

5.2.1 Site Inductions

Prior to starting work on site, all staff, and operatives, including those employed by sub-contractors, and labours will be required to attend the Site Induction training session. All site personnel must ensure they attend site induction before commencing the work on site.

All Site Inductions will be booked in advance and will take place at 08:00am.

During Site Inductions all contractors will provide information on the suitability and the training undertaken by their operatives as part of their Health and Safety documentation prior to commencing any works.

5.2.2 Working Hours

Core working hours will be 08:00 – 18:00 on weekdays and 08.00 – 13:00 on Saturday.

For particularly noisy operations the contractor will agree “quiet times” with neighbours, operating a pattern of “two hours on - two hours off”, or similar arrangement to accommodate the needs of local businesses as far as possible.

There may occasionally be a need to work outside these hours in order to undertake essential works, and the Contractor will make due application to the council.

To ensure that the impact of the construction is kept to a minimum on this project we propose a voluntary Section 61 Prior Working Agreement is adopted.

5.2.3 Site Visitors

All visitors to the site will be escorted. Visitors who are not wearing appropriate PPE will be refused entry to the site. This includes delivery personnel etc. All visitors will be required to sign in and out using the visitor log with details of their name, contact telephone, company, vehicle registration and sign in and out times.

5.2.4 Communication of the Construction Management Plan

The Construction Management Plan will be always accessible to site staff via hard copy form stored at the on-site office. In addition, an electronic copy will be communicated via email to site staff as well.

Furthermore, the contractor shall be served with a copy of this Construction Management Plan as part of the tender process and shall endorse it when they develop their Risk Assessment and Method Statement. If the contractor method statement differs in any way from this method statement, a copy of the proposed changes should be sent for the local authority approval prior to commencement of construction activities.

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5.3 Managing Materials, Site Storage and Good Housekeeping

5.3.1 Site Waste Management

Waste will be managed under the principle of hierarchical waste management priorities which, in order of importance, are as follows: **Reduce, Reuse, Recycle and Dispose.**

It is important to tackle waste at the outset by reducing the amount of waste being produced in the first place, that is ensuring that the correct quantity of materials are ordered in the most environmentally friendly way.

Each sub-contractor will be responsible for ordering and supplying their own materials, thus minimising the risk of waste through overordering (for which the subcontractor would be financially liable). Each sub-contractor will also be required to use the most environmentally friendly packaging at its disposal (including recycled) without adversely affecting the safe handling and protection of materials. The principle of “just-in-time” deliveries will furthermore reduce the risk of damage (and thus waste) through stockpiling. The main contractor will employ as many local sub-contractors and suppliers as possible in order to reduce fuel consumption and packaging needs. An audit trail, covering incoming materials and outgoing waste, will be kept.

Where practical (and in agreement with recommendations from the ground investigation reports), waste resulting from site clearance and demolition will be salvaged (such as crushed concrete or soil reused for landscaping). The use of reclaimed aggregate will be encouraged. Where it is not possible to reuse materials on site the contractor will attempt to transport these materials to other nearby building sites or to sell them to intermediary companies for reuse. The contractor will make use of material and waste exchanges, such as those listed on the BRE’s smartwaste.co.uk website or wastebook.org.

Where reuse is not practical or possible, the contractor will endeavour to recycle as much waste as possible offsite through the use of recycling companies. To facilitate this, segregated waste and recycling skips will be located at the rear of the site and will be made available at all times. Each sub-contractor will be responsible for moving waste and recycling (segregated at source where possible) into these skips and inducted beforehand on the correct use thereof. The use of a waste compactor will be considered in order to further reduce the amount of vehicle trips required.

Hazardous materials are to be sealed, stored and disposed of in appropriate and safe manner in order to avoid contact with ground- or wastewater. Burning of waste will not be allowed on site. The management and disposal of any remaining landfill waste will be handled in accordance with all relevant statutory requirements, including the Environmental Protection Act 1990 and the Environmental Permitting Regulations 2007. The above principles will be incorporated into all sub-contractor documentation and discussed with all relevant parties before works commence.

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5.3.1.1 Hazardous or Dangerous Materials

As the development site is a derelict plot of land there are currently no hazardous or dangerous materials present.

Any hazardous or dangerous Materials used in the construction of the development sites will be stored, used and disposed of, strictly in accordance with the Control of Substances Hazardous to Health Regulations. Full details of all COSHH data sheets and Risk Assessments will be incorporated in the Construction Phase Plan. COSHH Bins will be on site for safe disposal of any hazardous or dangerous materials.

5.3.1.2 Asbestos Survey

As the development site is a derelict plot of land and land history searches confirm no previous buildings have been erected on the plot an asbestos survey was not required.

5.3.1.3 Waste Minimisation Strategies

Waste that is created on site will be disposed of appropriately. Hazardous waste will need to be stored in appropriate containers and removed by licenced contractors using appropriate waste transfer notes.

Waste materials will be segregated into timber, metal and electrical waste. Materials will be manufactured and procured to minimise waste on site. The waste management plan will be incorporated in the Construction Phase Plan and will be communicated to all involved parties.

Waste will be removed from site regularly by a registered waste carrier (supported by a consignment note) to an authorised facility.

5.3.2 Good Housekeeping

The Contractor will follow a 'good housekeeping' policy at all times. This will include, but not necessarily be limited to the following. The Contractor will:

- Register the project with the Considerate Constructor's Scheme;
- Ensure considerate site behaviour of the Contractor's staff;
- Ensure the noise from lorry reversing alarms and the like are kept to minimum levels;
- Prohibit open fires;
- Ensure that appropriate provisions for dust control and road cleanliness are implemented;
- Remove rubbish at frequent intervals, leaving the site clean and tidy;
- Frequently inspect, repair and re-paint as necessary all site hoardings to comply with the conditions of licence - all flyposting and graffiti is to be removed as soon as reasonably practicable and within 24 hours of notice from the Council;
- Maintain toilet facilities and other welfare facilities for its staff;
- Remove food waste;
- Frequently clean hardstandings;
- Prevent vermin and other infestations; and
- Undertake all loading and unloading of vehicles expediently from Old Ipswich Road.

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5.3.3 Public Information

The site hoarding will display all necessary health & safety material. The name and 24 hour telephone contact details of the Contractor's nominated representative will be shown, together with the full details of the Contractor's regional or head office.

5.3.4 Security

The Contractor will ensure that the site is secure and prevent unauthorised entry to or exit from the site. Site gates will be closed and locked when there is no site presence. Alarms will incorporate an appropriate cut-off period. Access and egress will be via manned security gates.

5.3.5 Emergency Planning and Response

The Contractor will develop a plan for emergencies to incorporate:

- Emergency procedures including emergency pollution control to enable a quick response.
- Emergency phone numbers and the method of notifying the council and statutory authorities. Contact numbers for the key staff of the Contractor will also be included. The Contractor will display a 'contact board' on the hoarding identifying key personnel with contact addresses and telephone numbers, so that members of the public know who to contact in the event of a report or query.
- London Fire and Emergency Planning Authority (LFEPA) requirements for the provision of site access points.
- Site Fire plan and management controls to prevent fires.
- A plan to reduce fire risk and potential fire load during construction, operation and subsequently during maintenance or repair. The project will comply with any third-party requirements as may be appropriate at specific sites

5.3.6 Cranes

The construction planning of this project is aimed at the use of cranes for the erection of steel structures and material placements (large glass units for example). The Council Street Management Division must be given 10 days' notice of its use, and 6 weeks' notice in the event that a closure of Old Ipswich Road is required.

5.3.7 Environmental Management

The Contractor will need to demonstrate the management, monitoring, auditing and training procedures that are in place to manage the environmental impacts of constructing the development. The Contractor will also need to set out the specific roles and responsibilities of personnel in managing, monitoring all subcontractors.

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5.4 Deliveries and Transport of Materials, Plant and Equipment to The Site

Deliveries including the transport of materials, plant and equipment to the development site shall only take place during the following hours:

- 08:00 to 18:00 on Monday to Friday
- 08:00 to 13:00 on Saturday
- No deliveries on Sundays or Public Holidays

Any deliveries outside the above hours cannot be undertaken without prior written approval of the local planning authority.

If a school is located in the vicinity of the development site or on the proposed access and/or egress routes, deliveries shall be restricted to between 09:30 and 15:00 on Monday to Friday during term time.

Delivery vehicles shall not be permitted to wait, queue, or circulate on the public highway when the development site is not open for deliveries.

5.4.1 Planned Deliveries outside of working hours.

There are no planned deliveries outside of working hours.

5.4.2 Loading / Unloading of Material, Plant and Equipment Deliveries.

All deliveries will be managed by the Site Manager in accordance to a Deliveries Policy that ensures the safe and timely loading and unloading. All delivery times and dates will be pre-booked with the Site Manager. Wherever possible loading and unloading will only take place within the development site. The entrance gate for deliveries will be clearly marked with the appropriate signage and contact details of the Site Supervisor responsible for managing the delivery. On arrival to site, all vehicle drivers shall be briefed of the required safety rules and escorted to the worksite.

All sub-contractors to send a fully detailed delivery schedule prior to commencement including size of vehicle and number and size of pallets to be delivered which will be incorporated into the site managers delivery schedule.

Each delivery will be given a 2-hour time slot and no more than 1 delivery will be scheduled at any time.

The Site supervisor will be responsible for ensuring that all delivery schedules are updated and co-ordinated throughout the project and the site supervisor will be responsible for liaising with delivery drivers to ensure smooth and timely unloading.

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5.4.3 Wheel washing facilities and road cleanliness

Wheel and chassis washing facilities will be provided on site within an impermeable wash bay area which is to be isolated from other areas by a raised kerb or roll over bund to contain solids. These facilities will ensure that mud, stones and any other extraneous materials are removed from vehicles before they exit the site. Lorries, especially those carrying excavation mud or soil, are expected to be fully sheeted before entering and leaving the site in order to minimise the risk of any over-spilling onto the highway. Effluent resulting from these facilities will not be directed into the public sewerage or any street gullies but will be disposed off on site with the necessary consents from Thames Water or the Environmental Agency where necessary.

The contractor will monitor the surrounding highways and footpaths on a daily basis and ensure that the construction works do not have a negative impact on road cleanliness. A schedule of condition of the surrounding footpaths and highways will be prepared prior to any works starting on site to ensure the highways are kept in a good condition throughout the development process.



Figure 7: Wheel Wash Facilities prior to HGV vehicle exit

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6.0 Dust and Dirt Control Measures

Several measures to control dust and dirt have already been mentioned in previous paragraphs, such as:

- Wheel and chassis washing facilities near the vehicular exit;
- 2.4m ply boarding around the entire perimeter of the site;
- Covered storage areas and sheeted delivery lorries.

In addition to the above, the following dust and dirt suppression measures will be pursued:

- All site personnel to enter and leave the site wearing clean clothes and shoe wear;
- The use of fine sprays during the loading or unloading of materials as well as on buildings and structures (during demolition works), cutting and drilling plant, unpaved areas, sand, spoil and aggregate stockpiles;
- Preference of hydraulic construction over percussive techniques;
- Where practical, the use of building materials that are pre-fabricated or cut offsite including structural elements, cladding and woodwork;
- Burning of waste or unwanted materials on site to be strictly forbidden;
- Covering of all skips;
- Correct use of all plant and machinery and regular maintenance of their exhaust systems, which are to be positioned as far away from adjoining buildings as possible.

Where practical, further measures will be devised in accordance with the BRE's Pollution Control Guides (2003) publications and the GLA's Best Practice Guidance on The Control of Dust and Emissions from Construction and Demolition (2006).

Dirt, dust and noise emissions will be continuously monitored by a designated person. Any deviation from the above methods will only be permitted in exceptional circumstances and with prior consent from the main contractor and all other relevant parties.

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6.1 Dust Emissions

A construction dust risk assessment herein has been undertaken in accordance with the London Plan SPG on The Control of Dust and Emissions During Construction and Demolition, which utilises the methodology in the IAQM Guidance on the Assessment of Dust from Demolition and Construction (IAQM, 2014).

A detailed assessment of dust impacts is required where there are sensitive receptors within:

- 350m of the site boundary; or
- 50m of the route(s) used by construction vehicles on public roads, up to 500m from the site entrance(s).

For ecological impacts, a detailed assessment is required if there are dust sensitive habitat sites within

- 50m of the site boundary; or
- 50m of the route(s) used by construction vehicles on public roads, up to 500m from the site entrance(s).

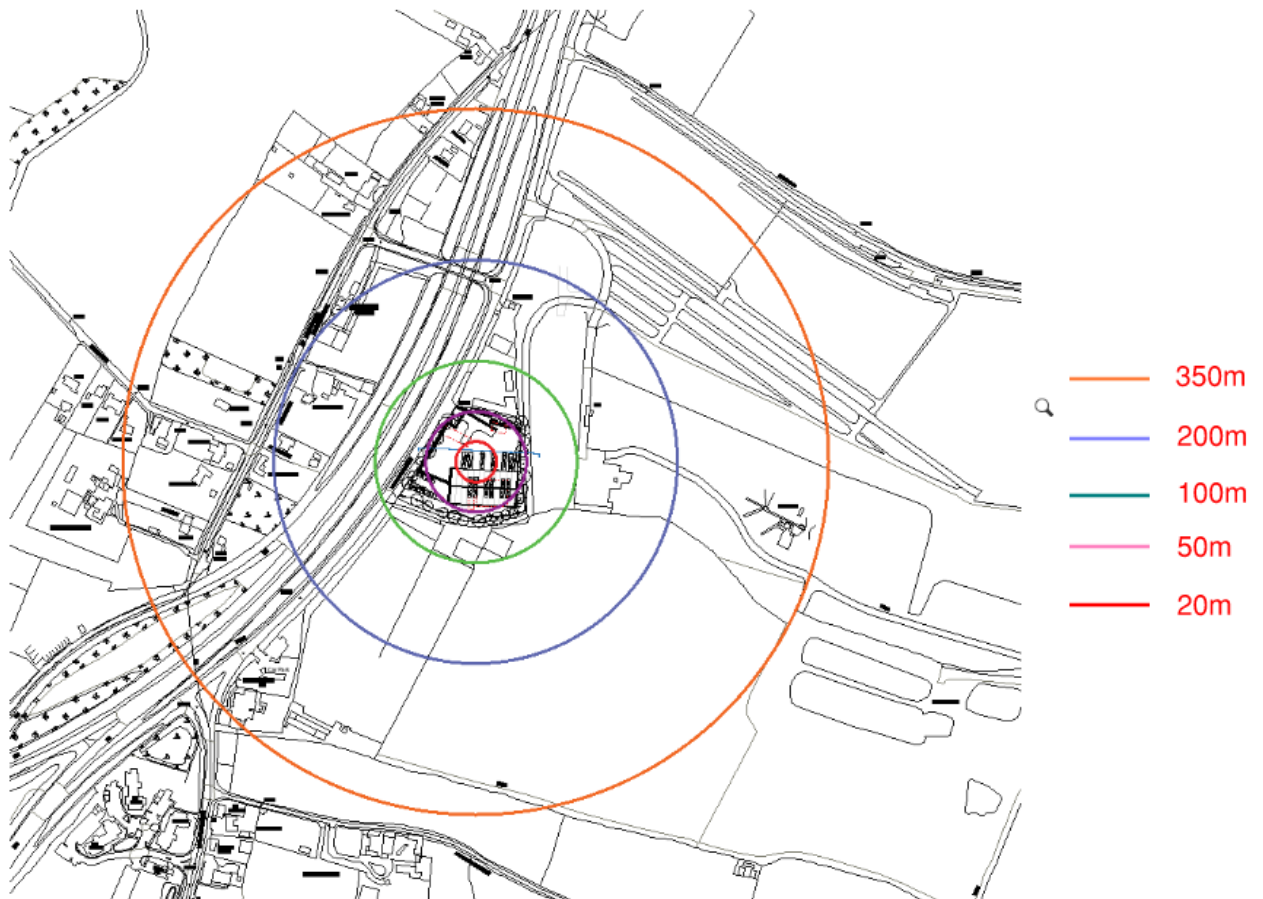


Figure 8: Dust Risk Assessment Buffers

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7.0 Noise and vibration

Best practical means are to be used at all times to minimise the noise and vibration impact of the works.

All works are to follow the guidance of standard Code of Construction Practice and BS5228:2009. Machinery and vehicles will be fitted with effective silencers wherever available, and kept in good working order. Acoustic covers are to be closed during operation. Equipment will be operated so it produces as little noise as possible. No idling engines or plant allowed onsite. Toolbox talks will take place for all contractors to ensure they are aware of noise and vibration issues onsite

To ensure that the workers are not overexposed to noise during the construction works the following will be considered:

- All works are to be carried out in accordance with the 'Control of Noise at Work Regulations (2005) and should be coordinated by the site manager.
- Where possible, the noise emissions from all plant equipment will be the lowest practicable levels. This will be achieved by selecting lower noise generating plant, ensuring equipment is in a good state of repair, and the careful placement of remote equipment (e.g., generators).
- Hearing protection will be made available for any member of the workforce if they are subjected to noise levels above 80 dBA.
- Hearing protection will be enforced for any member of the workforce subjected to noise levels greater than 85 dBA and hearing protection zones should be established.
- Where a workplace noise assessment indicates a risk to employees' health due to them being frequently exposed to noise levels above 85 dBA, health surveillance will be undertaken.

8.0 Air Quality

Potential impacts on air quality may arising during the construction phase from the following sources:

- Emissions of NOx, PM10 and PM2.5 from construction traffic.
- Emissions from on-site non road mobile machinery (NRMM); and
- Emissions of dust from on-site activities, including re-suspended dust from vehicle movements.

8.1 Traffic Emission

The Environmental Protection UK (EPUK)/ Institute of Air Quality Management (IAQM) planning guidance (IAQM & EPUK, 2017) provide screening criteria for potential impacts on local air quality. It states that for developments within an AQMA, a detailed assessment of traffic-related impacts is required where:

- There is a change in the annual average daily traffic (AADT) flow of light goods vehicles (LGV) of more than 100 vehicles; and/or

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- There is a change in the AADT flow of heavy goods vehicles (HGV) of more than 25 vehicles: and/or
- There is a change in the road re-alignment by more than 5m; and/or
- A new junction is introduced, which will significantly alter vehicle speeds.

In the context of these screening criteria, LGV refers to vehicles below 3.5 tonnes (e.g., cars and vans) and HGV refers to vehicles above 3.5 tonnes.

Where none of these criteria are met, the impact on local air quality is unlikely to be significant.

At the time of writing, the construction phase trip generation for the proposed development is not available. However, based on the scale of the proposed works, it is unlikely that the temporary increase in traffic will exceed the above thresholds. The impact of the construction traffic on local air quality is therefore expected to be negligible.

8.2 Non-Road Mobile Machinery Emissions

All non-road mobile machinery (NRMM) will comply with the emission standards specified in London Plan SPG on The Control of Dust and Emissions During Construction and Demolition (GLA, 2014b). On this basis, the impact of the NRMM emissions on local air quality is expected to be negligible.

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9.0 Construction Phase

The relevant 'Highly Recommended' and 'Desirable' mitigation measures for the construction phase, based on the assessed risk of impacts, are presented below. These measures should be adopted by the contractor and this report shall form a part of any tender documentation.

Table 1: Highly Recommended Mitigation Measures

Category	Measure
Site Management	<ul style="list-style-type: none"> - Consider developing and implementing a stakeholder communications plan that includes community engagement before work commences on site. - Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site Manager. - Display the head or regional office contact information. - Record and respond to all dust and air quality pollutant emissions complaints. - Make the complaints log available to the local authority when asked. - Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked. - Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions. - Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the logbook.
Preparing & maintaining site	<ul style="list-style-type: none"> - Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.
	<ul style="list-style-type: none"> - Erect solid screens or barriers around dusty activities or at the site boundary that are at least as high as any stockpiles on site. - Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period. - Avoid site runoff of water or mud. - Keep site fencing, barriers and scaffolding clean using wet methods. - Remove materials from site as soon as possible. - Cover, seed or fence stockpiles to prevent wind whipping. - If relevant, put in place real-time dust and air quality pollutant monitors across the site and ensure they are checked regularly. Potentially agree monitoring locations with the Local Authority if required and where possible, commence baseline monitoring at least three months before phase begins.

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Operating vehicle/machinery and sustainable travel	<ul style="list-style-type: none"> - Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone and the London NRMM standards, where applicable. - Ensure all vehicles switch off engines when stationary - no idling vehicles. - Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable. - Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials. - Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing).
Operations	<ul style="list-style-type: none"> - Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g., suitable local exhaust ventilation systems. - Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate. - Use enclosed chutes and conveyors and covered skips. - Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate. - Ensure equipment is readily available on-site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.
Waste management	<ul style="list-style-type: none"> - Reuse and recycle waste to reduce dust from waste materials. - Avoid bonfires and burning of waste materials.
Demolition	<ul style="list-style-type: none"> - Ensure water suppression is used during demolition operations. - Avoid explosive blasting, using appropriate manual or mechanical alternatives. - Bag and remove any biological debris or damp down such material before demolition.
Construction	<ul style="list-style-type: none"> - Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.

Table 2: Desirable Mitigation Measures

Category	Measure
Trackout	<ul style="list-style-type: none"> - Use a water-assisted dust sweeper on the access and local roads, as necessary, to remove any material tracked out of the site. - Avoid dry sweeping of large areas. - Ensure vehicles entering and leaving sites are securely covered to prevent escape of materials during transport. - Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).

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10.0 Lighting

To avoid unnecessary lighting pollution efforts should be made to follow the 'Guidance Note 01/20 For The Reduction Of Obtrusive Light' by the Institution of Lighting Professionals.

10.1 Guidance Note 01/02 For The Reduction of Obtrusive Light

The Guidance includes reference to the Clean Neighbourhoods and Environment Act (CNEA) 2005 and National Planning Policy Framework (NPPF).

The Clean Neighbourhoods and Environment Act (CNEA) 2005 gives Local Authorities and the Environment Agency additional powers to deal with a wide range of issues by classifying artificial light emitted from defined premises as a statutory nuisance.

The CNEA 2005 amended section 79(1) of the Environmental Protection Act 1990 to extend the statutory nuisance regime to include light nuisance stating the following:

'(fb) artificial light emitted from premises so as to be prejudicial to health or a nuisance'.

Guidance produced on Sections 101 to 103 of the CNEA 2005 by DEFRA (DEFRA, April 2006) extends the duty on local authorities to ensure their areas are checked periodically for existing and potential sources of statutory nuisances, including nuisances arising from artificial lighting. Local authorities must take reasonable steps to investigate complaints of such nuisances from artificial light. Once satisfied that a statutory nuisance exists or may occur or recur, local authorities must issue an abatement notice (in accordance with section 80(2) of the Environmental Protection Act 1990), requiring that the nuisance cease or be abated within a set timescale.

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11.0 Other Considerations

As well as the above detailed information regarding noise, dust and lighting the below will be set out and agreed:

- Hours of work and all associated activities audible beyond the site boundary restricted to 0800-1800hrs Mondays to Fridays, 0800 -1300 Saturdays (no work on public holidays).
- Notifications of works to interested parties and regular neighbour liaison.
- Public display of contact details including accessible phone numbers for persons responsible for the site works for the duration of the works in case of emergencies or complaints.

11.1 Assumptions and Limitations

Where limited access or information is available, assumptions will have been made which may affect the conclusions reached in this report. The report provided is solely for the use of the client and no liability to anyone else is accepted and this report is based upon and subject to the scope of work set out in Beta Design Consultants (BDC) quotation and standard terms and conditions.

The opinions and interpretations presented in this report represent our best technical interpretation of the data made available to us. However, due to uncertainty inherent in the estimation of all parameters, we cannot, and do not guarantee the accuracy or correctness of any interpretation and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, cost, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. The findings and opinions expressed are relevant to the dates of the site works and should not be relied upon to represent conditions at substantially later dates. If additional information becomes available which may affect our comments, conclusions or recommendations, the author reserves the right to review the information, reassess any new potential concerns and modify our opinions accordingly. Except for the provision of professional services on a fee basis, BDC does not have a commercial arrangement with any person or company involved in the interests that are the subject of this report. BDC cannot accept any liability for the correctness, applicability, or validity for the information they have provided, or indeed for any consequential costs or losses in this regard. Our efforts have been made on a "best endeavours" basis and no responsibility or liability is warranted or accepted by BDC. Copyright © The material presented within this report is confidential. This report has been prepared for the exclusive use of the client and shall not be distributed or made available to any other company or person without the knowledge and written consent of Beta Design Consultants and the client. All works undertaken by BDC are carried out in accordance with BDC's terms and conditions found as found as part of the terms and conditions within our scope agreement.