

The background of the entire page is a dark blue color. Overlaid on this background is a pattern of thin, light blue lines that form a series of interconnected hexagons and triangles, creating a 3D effect of stacked cubes. The word "Trigon" is written in a large, white, sans-serif font in the upper left corner.

Trigon

Demolition & Construction Environmental Management Plan

M Block Former Gravesend Hospital, Bath Street, Kent, DA11 0DG

November 2024

Document Control

Revision	Date	Author	Section Amended & Notes
00	22/11/2024	Mark Tromp	New document (first issue)
01	25/11/2024	Mark Tromp	Updated Phasing Plans

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1.0 Introduction

This Demolition & Construction Environmental Management Plan (DCEMP) has been prepared by Trigon DM on behalf of the Client Strawberry Star for the permitted development at the Former Gravesend & North Kent Hospital, Bath Street, Gravesend, Kent, DA11 0PN.

Gravesham Borough Council planning permission reference no. for the development is 20190504.

Condition 3 of the planning permission requires the following:

Code of Construction Practice

No development approved by this permission shall be commenced until a comprehensive Code of Construction Practice covering environmental impacts in the construction phase of this development is provided by the applicant and submitted for approval to the Local Planning Authority. The approved scheme shall include details of hours of work during the construction period, delivery times from materials, parking of vehicles of site personnel and visitors, loading and unloading of plant materials, storage of materials and wheel washing proposals; the development hereby permitted shall be carried out in accordance with the approved Code of Construction Practice

Condition 4 of the planning permission requires the following:

Details of Construction Compound

Details of the proposed construction compound for the development including its extent, location and access arrangements shall be submitted for the approval of the Local Planning Authority before the commencement of the development; the approved details shall be implemented before construction commences.

Condition 6 of the planning permission requires the following:

Wheel Washing

Details of the type and location of wheel washing facilities and chassis cleaning equipment to be provided on the site during the construction period for each phase of the development hereby permitted shall be submitted to and approved in writing by the Local Planning Authority prior to commencement of construction work on site for each phase and shall thereafter be used and kept on site for the duration of construction and be maintained in working order throughout the period of construction.

Condition 12 of the planning permission requires the following:

Demolition & Construction Environmental Management Plan

Prior to the commencement of the development full details of the phasing of the development shall be submitted to, and approved in writing by the Local Planning Authority. The development shall be carried out in accordance with the approved details.

The purpose of this Demolition & Construction Environmental Management Plan (DCEMP) is to address the detailed procedures, sequencing and construction methodology anticipated by the project team engaged in the planning, liaison, the demolition of existing site structures and construction of the development at the former Gravesend Hospital.

The project under the current application focus on amendments to Block M (the conversion building) only. These include adjustments to the unit mix and internal layouts, modifications to parking arrangements, the introduction of additional private and shared amenity spaces, changes to the building's external appearance (elevational changes), and updates to the external material palette. These refinements aim to enhance the design and functionality of Block M while maintaining its role within the overall development.

The DCEMP is also designed to be a live document which will eventually address how any planning conditions imposed on the project will be managed or discharged by the construction teams.

The plan outlines proposals on traffic and environmental measures to be adopted during construction.

It is not to be confused with the Construction Phase Health & Safety Plan, which will provide the appointed contractor with a mechanism to comply with their legal responsibilities when acting as Principal Contractor in respect to the Construction (Design & Management) Regulations 2015.

The named person for residents to contact during the works is:

Simon Taylor (Development Director)

Simon.Taylor@strawberrystar.com

0207 437 1000

Simon is responsible for:

- Ensuring that the DCEMP is developed & held on site and that it is implemented throughout all phases of the project. Ensuring the DCEMP details are updated as and when relevant information is provided by the stakeholders associated with each section of the DCEMP, e.g. further consent conditions, pre-construction surveys, etc.
- Maintaining the DCEMP and ensuring that all contractors and visitors comply with it
- Ensuring that environmental issues identified within the pre-construction information and the pre-construction site surveys and relevant information gathered from agencies, local councils etc are addressed

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- Producing environmental project specific controls for all significant risks identified and implementing control measures to minimise the risk of damage to the environment
- Communicating the DCEMP and other related document to employees, contractors, and client representatives

2.0 Site Details

2.1 Site Location

The site is located in the Gravesend Borough, on the southern side of the Thames Estuary along the North Kent Coast. It lies west of the town centre and High Street, approximately 300 meters away, and is situated south of Clifton Road, near Bath Street. The site includes the disused former M Block of the Gravesend and North Kent Hospital, a five-story building constructed in the 1970s and terraced into the hillside, along with two smaller brick buildings that previously housed services for M Block, such as an electricity transformer. The remainder of the site consists of open scrubland on sloping ground that descends northward towards the river, which is approximately 100 meters away.

The site, irregular in plan, is an approximate area of 0.4 hectares as shown in figure 1 below.

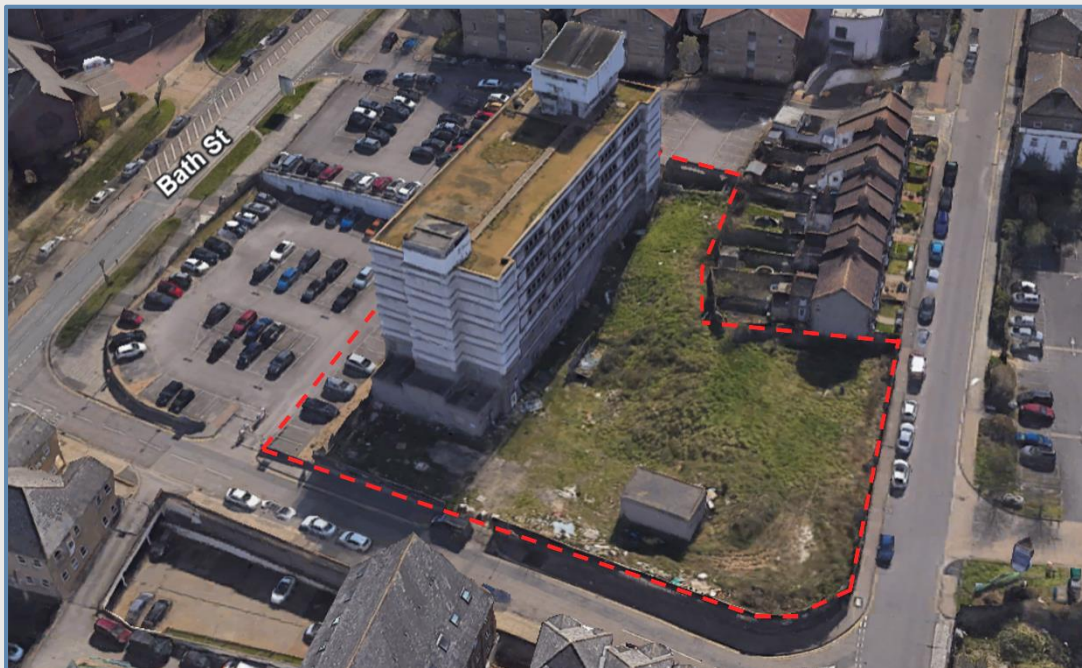


Figure 1 Aerial view of the existing site

2.2 Description of the Site and Site Buildings

The site comprises of the former 5 Storey M Block of the Gravesend and North Kent Hospital and two smaller brick buildings that housed the services for M Block (electricity transformer). The remaining area of the site consists of open ground of scrub.

The site lies at various levels with the lowest point of the site located at the northern end. The site rises approximately 5m towards the southern side of the property. The site also slopes from west to east with a fall of approximately 2.5m.

2.3 Site Conditions

Our understanding of the site conditions is based on the number of site surveys carried out during the course of planning and a survey commissioned during the detailed design stages of this project.

2.3.1 Ground Conditions

Made Ground was encountered in all exploratory holes from the surface to a maximum depth of 1.2m bgl. Superficial Head Deposits were found at four locations between 0.08m and 2.7m bgl, forming layers of varied sandy, silty, and clayey compositions. Bedrock, comprising the Lewes Nodular Chalk Formation and Seaford Chalk Formation, was present at all holes, extending beyond 30m bgl. Groundwater was observed during monitoring at an average depth of 1.40m AOD within the chalk formations.

2.3.2 Made Ground

The Made Ground was identified in four distinct layers across various exploratory holes: gravelly silty clay (five locations, 0.08–0.6m thick), clayey gravel (four locations, 0.1–0.6m thick), sandy gravel (one location, 0.35m thick, interpreted as Type 1 Subbase), and clayey sandy gravelly clay (one location, 0.45m thick). It contained man-made materials like brick, clinker, tile, and glass, along with natural gravel of chalk and flint. Headspace readings were low (0–0.5ppm, average 0.1ppm) with no signs of hydrocarbon or solvent contamination, nor were asbestos-containing materials noted. Previous investigations found similar Made Ground characteristics, primarily reworked natural soils with minor foreign inclusions.

3.0 General Logistics

3.1 General Logistics

Due to the site being located within proximity of the centre of town area, there is likely to be pedestrian footfall and heavy vehicle usage on the Bath Street and Clifton Road before 9:30am and, between 3:30pm and 4:30pm during peak commuting time as well as when school drop off and pickups occur. During the lead into site start, an assessment of local traffic will be undertaken by the appointed contractor within the first two weeks to determine the quietest period for local traffic to minimise any potential disruption.

On contract award, a request will be submitted to traffic facilities UK to ascertain what size demolition machine and accompanying haulage vehicle can be delivered to site. We have assumed a six-axle low loader and trailer, with a 47-tonne excavator totalling 79 tonne.

3.2 Wider Site Logistics

To the east and south of the site carp parks for the Gravesend Community Hospital. The site is bounded by Stuart Road on its western boundary, Clidton Road on its northern boundary and Bath Street on its eastern boundary. Along the south western boundary of the site there is a row of Late Victorian terraced houses.

The nearest hospitals are Gravesend Community Hospital (Bath Street) and Darent Valley Hospital (Darenth Wood Rd, Dartford DA2 8DA)



Figure 2 Route to the closest hospital

3.3 Pre-Start Surveys/Site Investigation

The following site surveys have been carried out as part of the planning and technical design stages of the project and have been used to inform demolition and construction methodology:

- Archaeological and Heritage Desk-Based Assessment – SWAT Archaeology
- Preliminary Ecology Appraisal – Corylus Ecology
- Underground Utility Survey – Enka Surveys
- Geotechnical Site Investigation – Lustre Consulting
- Phase 1 Desk Study – Lustre Consulting
- Phase 2 Site Investigation – Lustre Consulting
- Sustainability & Energy – Blue Sky
- Topographical Survey – Barron Edwards Planning Architects
- Refurbishment & Demolition Survey – Asgen Limited Environmental Services
- Structural Report – Adkins Consultants
- Structural Concrete Test Report – Terra Environmental

4.0 Demolition Logistics and Management Plan

4.1 Demolition Site Logistics

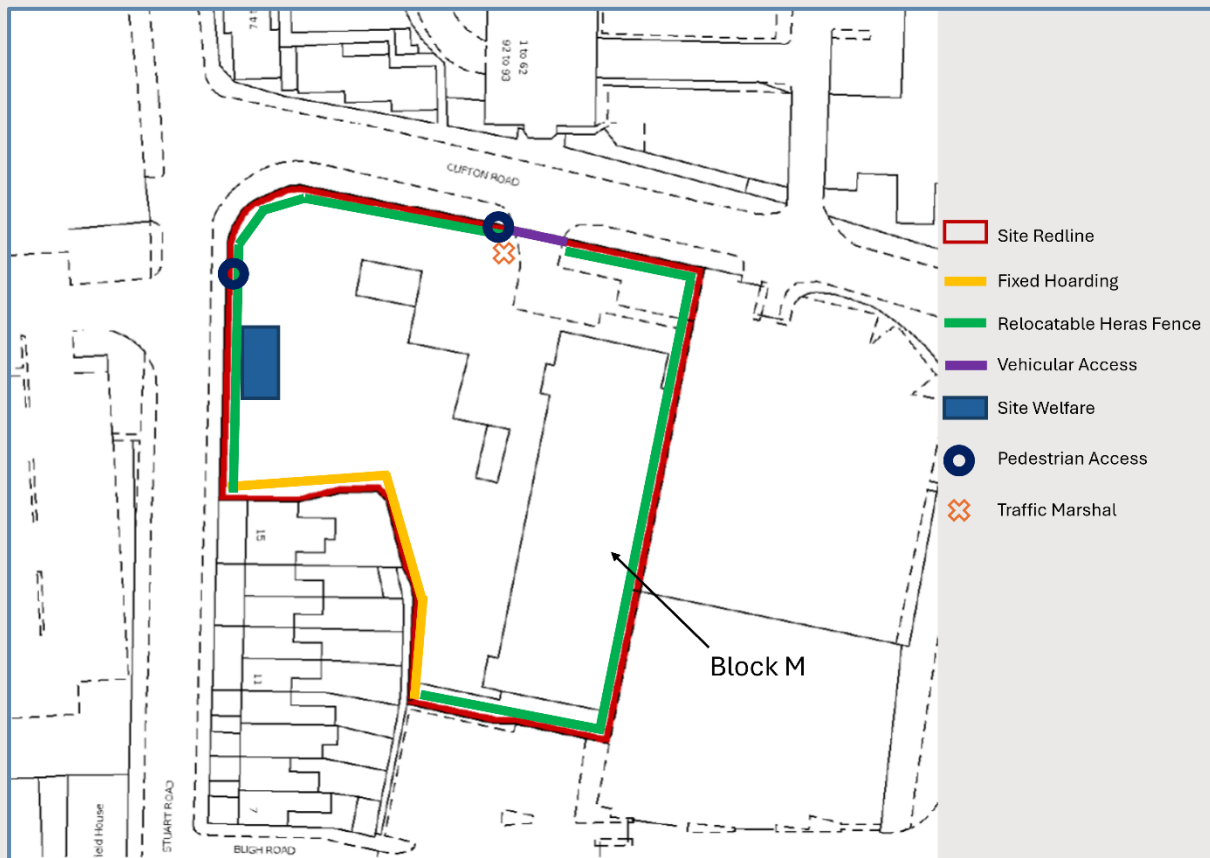


Figure 3 Demolition logistics plan

4.1.1 Hoarding

The fixed hoarding around the external perimeter will be 2.4 meters high based on kentledge blocks. This hoarding will be positioned along the boundary of the neighbouring Victorian Terraced properties and Stuart Road. A vehicular access gate will be installed in front of the existing vehicle entrance from Clifton Road, with a pedestrian gate from Stuart Road being installed for easy access to the site welfare. Around the remaining boundaries of the site relocatable hoarding will be installed for ease of manoeuvring close. All hoarding requirements will be discussed with neighbouring properties prior to install.

4.1.2 Welfare

The welfare for the project will initially be established within an oasis style site cabin on the ground floor along the Stuart Road boundary. This location helps to segregate vehicles and operatives. Following the demolition, the site welfare will be relocated and upsized for main construction works, then relocated to suit building sequence (refer to section 6.0 for construction logistics).

4.1.3 Internal Site Logistics

The site would need to be cleared of shrubs to allow for establishment and construction. A desk-based Ecology Survey has found that there are 3 types of dominant habitat on the site. There is a small area of dense scrub to the south of Block M. In the north-east of the site there is an area of undisturbed grassland. The dominant habitat of the site is bare earth which has been recently cleared of vegetation.

All moving vehicles and items of plant will be banked into and out of site by the traffic marshal noting that all vehicles will be able to adequately turn within site and exit onto Clifton Road in forward gear.

4.2 Demolition Methodology

4.2.1 Pre-commencement

The programme has been based on the programme issued by the client. Key items that require approval in order for the project to commence are:

- S106 obligations, contributions, and notices
- Demolition & party wall awards
- Pre-commencement planning conditions

4.2.2 Programme Narrative

Based on the tender enquiry documents, tender query responses and meetings with the client, the detailed scope of works are to be:

- Appointed contractor to act as Principal Contractor throughout their works.
- Submission of all necessary notices and permits including ASB1 & ASB5 (if required) to the HSE, Section 80 Demolition Notice to Gravestone Borough Council.
- Production and monitoring of RAMS, Traffic Management Plan, Site Waste Management Plan.
- Site setup including welfare facilities for the first week including access/egress, pedestrian routes, inductions, fencing and signage.
- Disconnections and rerouting of all existing utilities.
- Removal of all Asbestos Containing Materials identified within the associated asbestos survey.
- Pre-demolition soft strip of Block M, segregation of materials into designated waste streams and removal off site to an appropriate recycling facility.
- Hand demolition where necessary, for example along the boundaries close to the direct neighbours and boundary line.
- Mechanical demolition of the existing brick buildings on the site adjacent to Block M using 360 excavators with a selection of hydraulic attachments.
- Breaking up and processing of material and all external hard standing areas.
- Grubbing up of existing foundations to a maximum depth of 2m.
- Crushing of all demolition arisings to 6F2 grade.

- Tracking across site to leave clean, tidy, and safe.

4.2.3 Utilities

The client is in the process of arranging the payment for the termination and rerouting building supply of all existing services (gas, electricity, telecoms, water) prior to the commencement of the demolition works on site. The awarded demolition contractor will be registered to manage the disconnection/rerouting and disconnection certificates are to be provided to the client team prior to commencement of the main demolition works.

A water supply will be maintained to the site for the duration of the works to assist with dust suppression, in particular during the breaking out and crushing process. This will also assist with the dust suppression for the watching brief operation.

For the soft strip and asbestos removal, isolation of services back to the incoming heads is sufficient where applicable. If there is a head that remains live it will be clearly marked and protected to ensure no debris falls on this. Full termination of services at the boundary of site is required prior to any structural demolition taking place and will be coordinated in full with the statutory utility companies.

All works will be completed in strict accordance with HSG47 at all times. CAT scan & generators are to be utilised frequently throughout the enabling works programme.

Further, permits to dig will be issued by the awarded demolition contractor. All services being removed will be confirmed disconnected prior to removal. Proximity of power lines to site to be established and Distribution Network Operator will be informed of plan of works.

4.2.4 Asbestos removal

This project will be managed by the Contract's Manager of the awarded demolition contractor, who will be responsible for works planning, RAMS production and development of programme. The removals site team will be led by the Site Manager.

An R&D Survey has been undertaken by Asgen Limited who noted that 2 of the 13 samples taken of the thermal insulation to the pipes and debris within the boiler room 178 to the basement were found to contain amosite asbestos. They have strongly recommended to assume that all the thermal insulation within the boiler room contains asbestos and should be treated as such. All identified ACM/Items that are deemed as notifiable asbestos work are to be carried out under fully controlled conditions within an enclosure, with a statutory 4 stage clearance air test being undertaken as part of the remediation process. All non-licensed asbestos materials shall be removed from within a respirator zone under locally controlled conditions.

In accordance with The Hazardous Waste Regulations 2011 an Environmental Agency waste consignment note (WCN) will be issued to the client on completion of the works, as receipt of responsible disposal of a hazardous waste/material.

4.2.5 Demolition Method

Structural make up – The building is a substantial concrete framed building with light weight infill panels. The floors appear to be constructed of solid concrete that have been formed with traditional timber shuttering and supported with downstand beams. The roof is also formed of reinforced concrete

Demolition method – The smaller existing brick work structures will be demolished first using an excavator the material will be sorted and removed as mentioned above. The demolition and strip out of Block M will commence with removal of all soft furnishings and infill panels. Work will commence on the top level before the demolition teams start making their way to the ground and basement floors.

Where land needs to be prepared for building adjacent to Block M, a bulldozer will level the land and remove all shrubs and loose material to enable a level working platform for the construction team.

5.0 Construction Logistics and Management Plan

5.1 Scope of Works Overview

5.1.1 Piling, Foundations & Substructure

Lifting and Access

A mobile crane and telehandler will be needed for the refurbishment of the internals and additional floor to Block M, construction of the tower block extension to block M and Block L. The materials required for the façade construction and panels will also be distributed and loaded out by the crane and/or telehandler. Scaffolding will be erected later during the construction phase to complete works on the façades.

Piling Method Statement

A Piling Method Statement will be completed on award of the appointed main contractor and prior to the construction site start. The method statement will contain further detail on the methodology and risk assessment for the piling works. All pile locations will be checked in advance for all underground services and proof excavated to a level to check for obstructions which may hinder the installation of the piles.

Foundations & substructure

The slab and core will be formed of concrete, with concrete (cement) lorries being the primary vehicle accessing the site during this stage of construction. Lorries stop within a designated loading bay onsite. Banksman and traffic marshals will control the movement of vehicles, pedestrians, and cyclists when lorries are accessing and egressing the site.

5.1.2 Superstructure

The building frame of the extension and addition to Block M and frame of Block L is to be fully developed, designed and will be built consisting of a reinforced concrete frame, with associated precast concrete cores/stairs and a brick facing façade. There will be an increase of deliveries with regards to materials once the internal areas become available in both the extension and the refurbishment of Block M. The materials required for these areas will be delivered once the areas become available in advance of commencement to avoid congestion in the local area.

All unloading will take place on-site. Traffic marshals will ensure that pedestrians do not pass that section of the footway whilst lorries are turning into and out of the site from Clifton Road to ensure pedestrian safety is protected at all times.

Upper Floors

With the extension of Block M with an additional fall, the tower block extension and block L, and depending on the final design solution, it is envisaged that the floors will be either precast concrete slabs installed with pre-cast concrete frame and then topped with screed to the relevant areas or in-situ slabs cast on site which will be serviced by a static concrete

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pump/boom. The additional floor of the extension to Block M will be poured utilising a concrete hydraulic pump or articulated boom pump.

External Walls

External walls are to be cladded in brickwork. There is a combination of brickwork colours with projecting headers in various places on the façade elevation. The glazing is set back from the face of the building and will be accessed via mast climbers around the perimeter of the building with traditional scaffold systems where applicable.

5.1.3 Drainage connections

The existing foul and storm connections that are connecting to the main system will remain, preventing any disruptions to the road network with new connections.

5.1.4 Fit-out, Testing and Commissioning

Typical procurement routes using off the shelf materials and construction in situ will not suit the delivery programme of this project. Deliveries for this phase will be called off and scheduled bulk to allow for less smaller deliveries, reducing the number of vehicles coming to site.

5.2 Construction Phasing

The site will be split into two phases during the construction period (post-demolition). This phasing regime deals with site logistics, accommodation, material storage, and maintenance of the vehicular access to the site to ensure a smoothly run construction site.

Please refer to figure 4 to view the proposed phasing.



Figure 4 Phasing plan (1 & 2) – Ground Floor

5.3 Construction Site Logistics, Accommodation & Storage

5.3.1 Phase 1 Construction (Lower ground carpark)

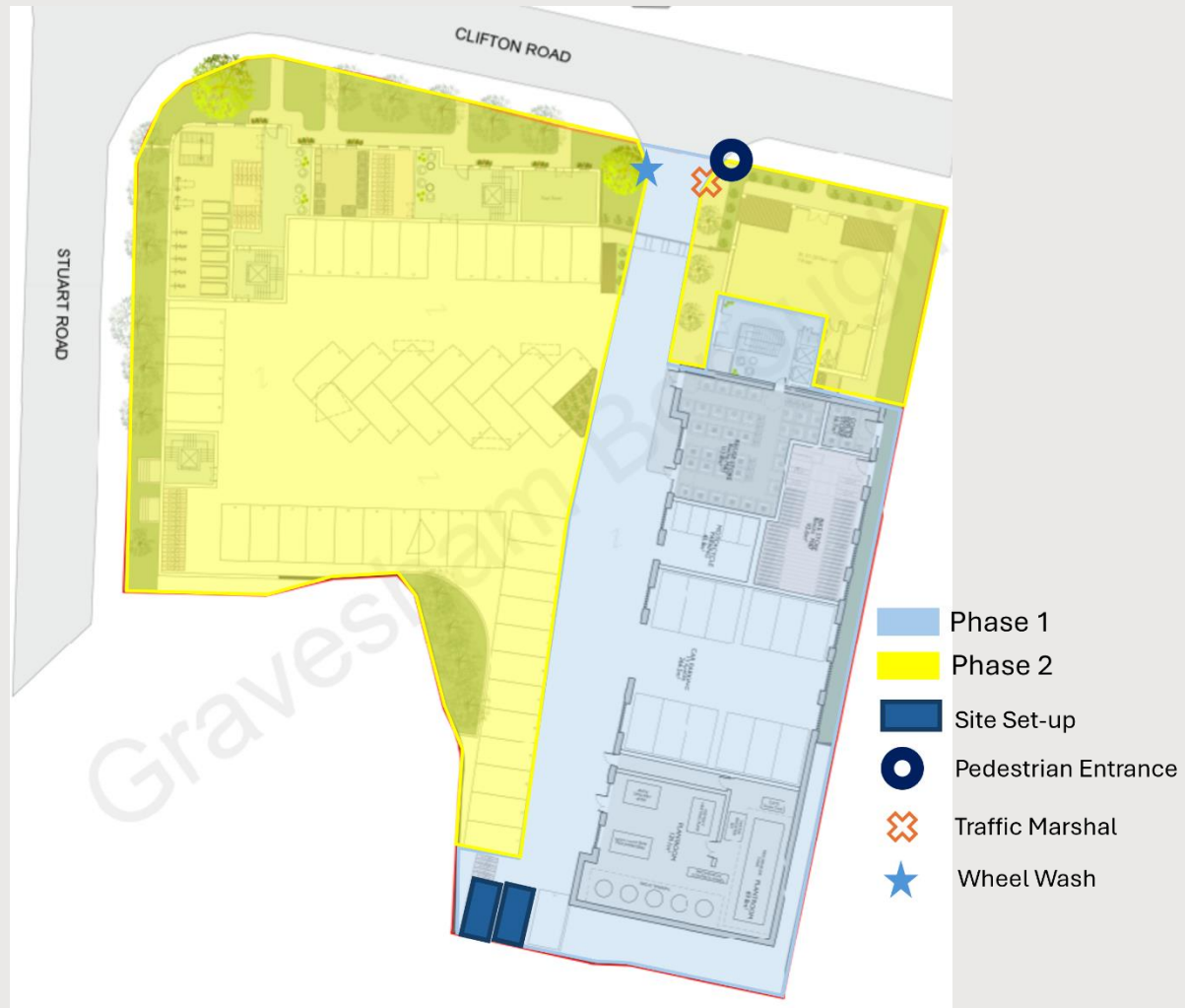


Figure 5 Phase 1 construction logistics plan

Please refer to figure 5 for the initial phase of construction (Block M Refurbishment), Tower Block Extension and additional floor to Block M. The location of the main project offices will be to the south of Block M and south of the existing vehicular access from Clifton Road as per figure 5. The intention is to use 'Portakabin' type units which will then be double stacked with offices over the top of Welfare.

Material storage on the site in this phase will be located in close proximity to the site offices. All supply chain members will co-ordinate their respective needs with the site gateman and deliveries team. A landing 'delivery' zone for delivery vehicles will be located inside the site vehicle entrance and on their exit, vehicles will be able to adequately turn within site and exit onto Clifton Road in forward gear. Materials will be offloaded from the vehicle directly to the point of use wherever possible. Site access will be controlled with trained banksmen to

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ensure management of deliveries and to completely remove any congestion in surrounding highways.

Wheel wash facilities are located at the front of the site entrance to ensure that vehicles leaving site do not generate mud onto the public highways.

5.3.2 Phase 2 Construction

Please refer to figure 4 for phase 2 of construction of Block L and the Tower Block extension to Block M. The site establishment will remain as per figure 5

Communication with the neighbours will be ongoing daily, and an access plan and sequencing of construction activities will be agreed throughout the course of the project with the neighbouring properties. A traffic marshal will always be present at vehicle entrance gate.

Wheel wash facilities will remain at the site entrance to ensure that vehicles leaving site do not generate mud onto the public highways.

6.0 Hazard, Risks and Environmental Management

The scheme will follow the preferred tenderers specific policies and will consider the design, pre-commencement, operations, environmental and supply chain input.

6.1 Workshops & Meetings

6.1.1 Pre-Construction

Workshops, meetings, and further communication is to be undertaken with items to be documented in meeting minutes format:

- Highways (when required)
- Design (fortnightly Microsoft Teams meeting)
- Build (Weekly site meeting)
- Client team (fortnightly Microsoft Teams meeting)
- Key sub-contractors (weekly site meeting)
- Commercial (weekly site meeting)

6.1.2 During Demolition & Construction

Workshops and meetings to be routinely undertaken:

- Toolbox talks
- Feedback sessions

Items to be documented in meeting minute format.

6.2.3 Control Log

- Hazard & Risk Registers (updated & live)
- Safety Audits
- Change Tracker

6.2.4 Risk Assessments and Control Procedures

Element specific risk assessments will be developed during the course of the works in conjunction with the specialist sub-contractors. These will be in line with requirements of the construction phase health and safety plan and the designers risk assessments, with particular attention being given to the adjacent boundary conditions and the unique solution needed for each elevation.

Below are key areas where, in conjunction with the design team and the supply chain, to further develop site control procedures.

6.2.5 Site Specific items

Relating to health and safety where particular attention will be given during pre-construction phase and the team will develop specific method statements and risk control procedures to manage include:

- Public Safety in and around the entrances to site and the site boundaries
- The neighbours located in the vicinity of the project

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- The presence of existing public amenity within close proximity to the construction site
- Public realm and existing footpaths around the perimeter of the site
- Existing surrounding buildings immediately adjacent to the site

Whilst this list is not exhaustive, it will be used as discussion points for the appointed contractor team developing the project Construction Phase Health and Safety Plan.

During the construction works, in the event of any unanticipated construction issues, the appointed contractor will contact the council via phone/email to inform of the issue and the solution to this issue.

7.0 Relationships & Working Hours

7.1 Community Liaison Officer

A Community Liaison Officer will be appointed and will have the role of being the point of contact on behalf of the contractor and the developer. It is anticipated that this role will be undertaken by a member of the construction team. The role will encompass liaison with all and any external parties. The Community Liaison Officer will mitigate and resolve any issues raised by the local community including the public facilities set out above, and by Maidstone Borough Council officers.

This approach will ensure there is effective communication and as required, collaboration throughout the construction period. This DCEMP has prepared a strategy for preventing potential issues, however any difficulties encountered during construction will be reported/recorded in a full log and resolved.

Explaining and marketing the DCEMP to the supply chain, local community, residents, direct neighbours, and other businesses will be undertaken by the Construction Liaison Manager to raise awareness and show the developer's commitment to using safe and efficient construction vehicle practices. This commitment will need to be communicated to all parts of the supply chain involved in the development.

7.2 Working Hours

The construction hours will be as set out in the planning approval; anticipated that will be in the realm of:

- 8:00am – 6:00pm Monday to Friday
- 8:00am – 1:00pm Saturday
- Closed Sundays and bank holidays

In the event of there being a circumstance where construction work will be required to take place outside of these hours, the exact phasing, and timescales of this will be communicated to our neighbours and direct to the relevant Environmental Health Officer for the area for the necessary Section 61 approval.

The site will be manned during the working hours set out above. The contractor will appoint a person(s) who will have responsibility for ensuring adherence to good practice measures. A designated person should be on site at all times to ensure that operations are taking place as planned and should have the necessary authority to initiate changes to work practices and, or mitigation as appropriate.

8.0 Parking and Personnel Access

8.1 Parking & Unloading

Carparking will be available on site for site management team only. The site carparking areas have been clearly marked in section 5.3 for the duration of the project.

There will be no car parking on site for trades. During the procurement stage, tenderers will be informed that operatives can attend the site delivery access point to unload tools at the start and end of their working day but must spend as minimal time as practicably possible.

8.2 Access

Most trips to the site will be 'people' trips (i.e. tradesmen/professionals), with a relatively low number of conventional deliveries. The following impact-reduction strategies, achieved through the implementation of a staff travel plan, are therefore considered key to the success of this DCEMP.

Each subcontractor will be issued with a copy of the staff travel plan which covers the following key points:

- Details of public transport and cycle parking for worker journeys
- All vehicle trips to site must be booked in advance by phone to the Site Manager
- Car/van parking not available on site or on the surrounding roads. Alternative provision for parking would be undertaken only on legal kerbsides or within permitted car parking areas (at the expense of the individual).
- Strictly no waiting on local roads
- All vehicles must have their engines switched off when on site – strictly no idling
- Designated routes for vehicles above 3.5t
- Community considerations on designated routes and in the local area generally
- Requirement for banksman when entering/exiting site
- Accident and Near Miss report to be implemented and maintained accordingly
- Staff, contractors', and visitors will not be encouraged to travel by car to the site and will be expected to make their own travel arrangements.

Public transport is also readily available with Gravesend Train Station approximately a 5-minute walk from the site.

Generally pedestrian access will be restricted to the pedestrian entrance off one of the adjacent roads directly into the main compound of site accommodation.

It is anticipated that a secure turnstile with biometric or allocated fob access onto the site working areas from the compound will be put in place to prevent any unauthorised access. Workers will be logged in whilst all visitors will report to the designated gate person to be

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escorted to the site offices for induction, at all times pedestrians and vehicle movements shall be kept segregated as far as reasonably practical.

There will be no access granted unless authorised by the main contractor, this will be following a site safety induction and in the case of visitors, escort onto site by competent team members. A designated walkway will be in put in place to either the deliveries area or the welfare/office area, the turnstile will be both the point of access and egress from site and will record the personnel for emergency evacuation purposes as well as recording data for capturing the carbon footprint of the site and information.

The site will also be monitored by a tag guard system whereby if the motion sensors/beams are broken, a locally appointed security guard will be immediately notified and attend site to investigate and deal with the situation as necessary, as the frame progresses the security will upgrade to that of a static guard.

8.3 Cyclists

There is a good cycle network located around the perimeter of the site boundary and surrounding highways. The site gatemen and banksmen will be observant of cyclists when directing public and vehicle movements alike. There will be allocation for secure cycle parking for workers choosing to travel by bike, cyclists will be asked to dismount on entering the site gates.

9.0 Deliveries, Traffic Management & Highways

9.1 Hoarding

A site hoarding design will be produced and installed by the main contractor. This proposal will follow the current boundary fence and walls located along the perimeter of the current site.

9.2 Delivery Vehicles

Articulated, rigid body delivery vehicles approaching the site and all smaller deliveries can be managed and taken immediately off the highway network, with all deliveries being held and offloaded within the site boundary. To note, site vehicles will be able to adequately turn within the site boundary landing area to ensure that they always exit onto Clifton Road in forward gear.

9.3 Delivery Timing and Control

Delivery times will be scheduled with the supply chain to avoid conflict with school hours and peak-time pedestrian footfall. The site team will use endeavours to prevent deliveries taking place between:

- 8:30am – 9:15am
- 14:45pm – 15:45pm

9.4 Materials storage

Whilst the objective will be to take deliveries direct to the point of usage or to keep in the designated storage locations as set out in section 5.3, utilising temporary unloading and storage areas which will be located around the internal perimeter of the boundary will be another method. All loading/unloading will be done within the footprint of the site in designated lay down areas. No unloading will be done on the public highway unless this highway is closed, and appropriate permission has been granted by the local authority.

During the early construction stages, all delivery needs from the supply chain will be developed based on a project specific delivery strategy for each element of the works. For example, a dedicated full-time compound gateman will be engaged to direct site and public traffic alike.

9.5 Highway Signage

Adequate signage will be erected on the lead up to the entrance to site to enable safe traffic movements on the public highway. Particular attention will be given to the signage and communication with the adjacent properties.

Local directional signing will be submitted to and agreed with Kent County Council Highways by the appointed contractor to ensure local drivers are aware of the site construction access. Delivery drivers will be briefed to use the approved lorry routing to avoid

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inappropriate roads, areas or sensitive locations in Gravesend, such as schools, where possible.

9.6 Site Signage

Main contractor branded signage will be erected around the site and the compound advising all safety obligations of the company their workforce and visitors, signage will be subject to weekly inspection and daily monitoring.

9.7 Context Plans

9.7.1 Regional Context Plan

Figure 9 is a Regional Context Plan showing the location of the site in the context of distributor roads, waterways, railways and other key infrastructure.

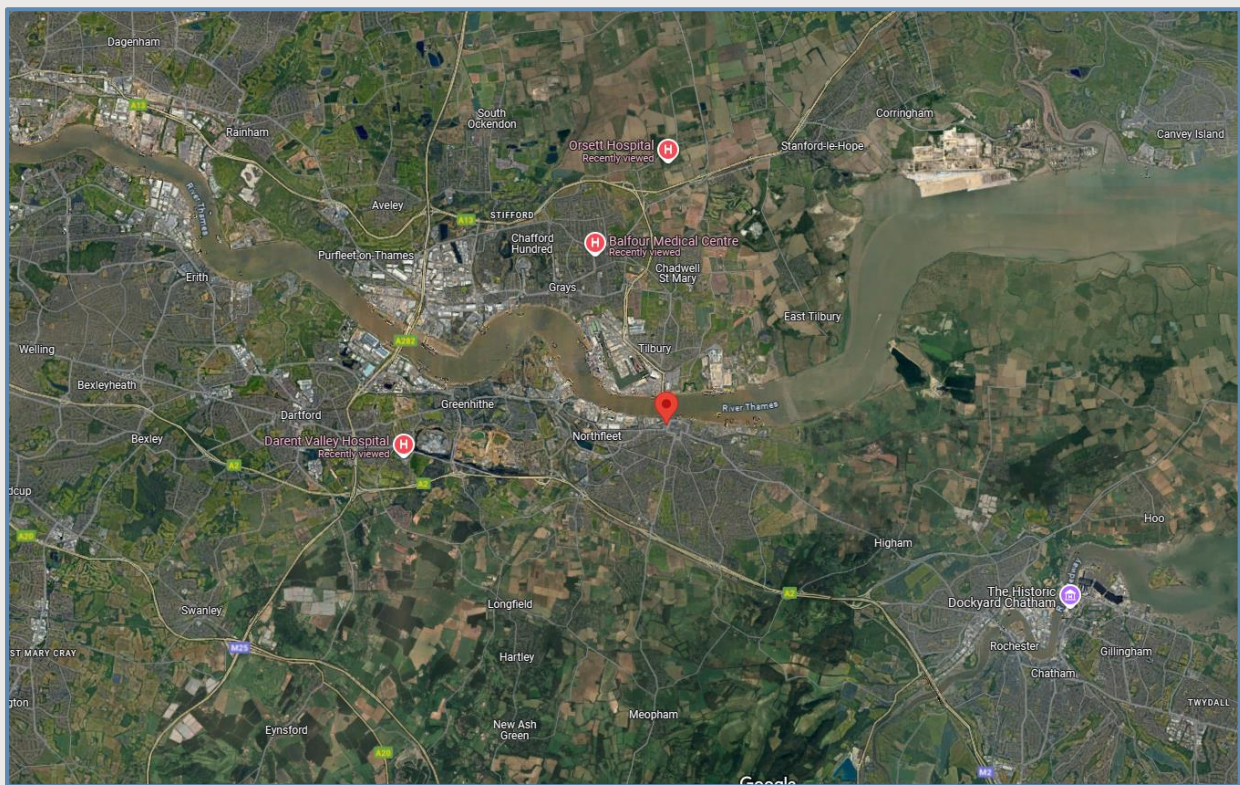


Figure 5 Regional context plan

9.7.2 Local Context Plan

A Local Context Plan showing the local road network of the site, footways, cycle routes, stations, bus stops, road markings. Refer to Figure 10.

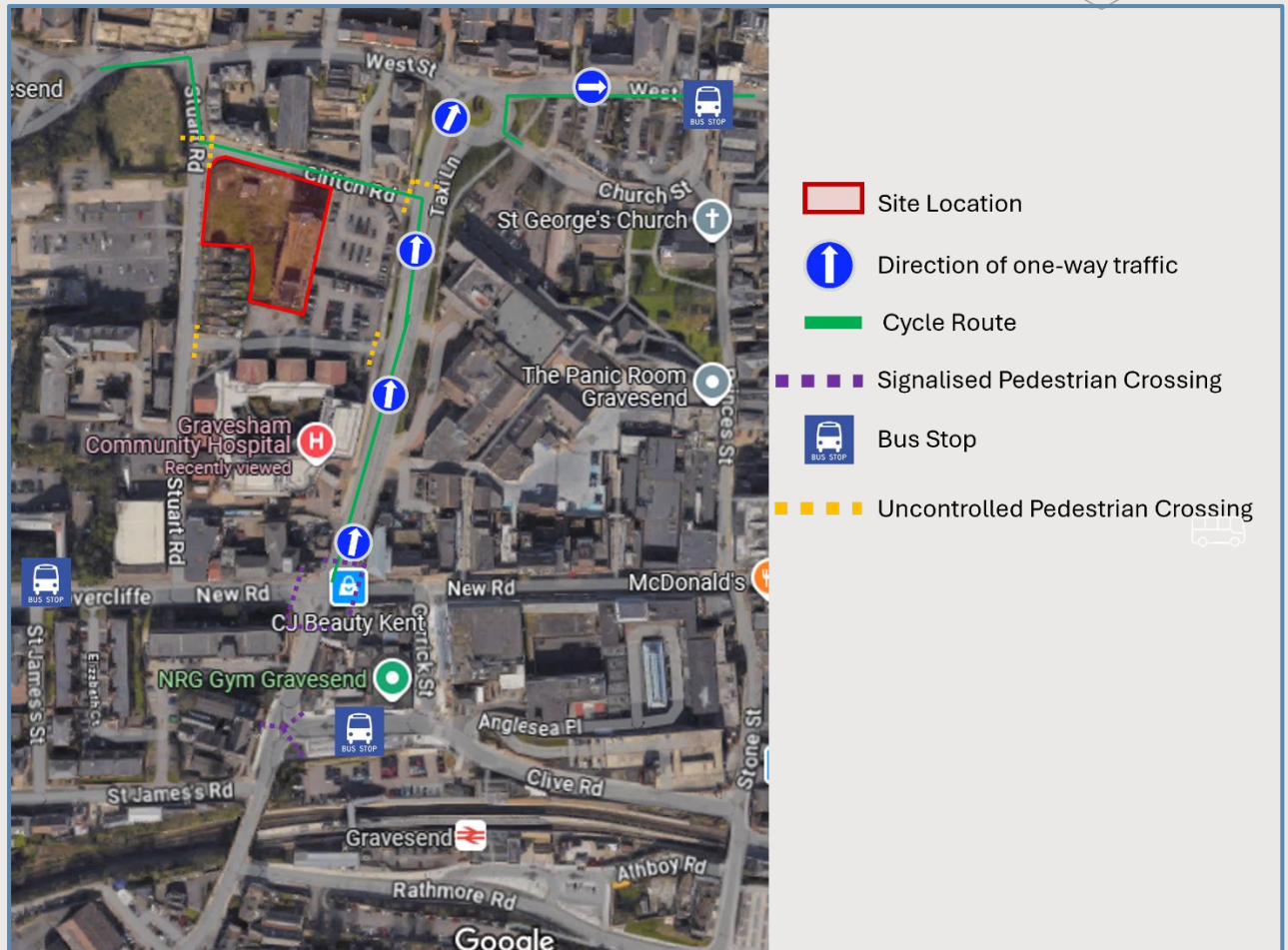


Figure 6 Local context plan

9.8 Vehicle Routing and Access

9.8.1 Construction Vehicle Routes

Delivery vehicles will be required to travel to the site on roads which are best suited to this type of heavy traffic and avoiding left turns wherever possible. It is proposed that all construction vehicle drivers of vehicles over 3.5t will be asked to use the principal road network only to limit the impact on the local road network. It is anticipated that construction vehicles will utilise the principal roads; New Road and Bath Street.

Figure 9 and 10 shows the vehicle routing in a regional and local context. The layout of the site during demolition and construction is shown in the site logistics plans (Figures 3, 6, 7 & 8).

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9.8.2 Consultation with GBC & KCC Highways Department

The development of DCEMP will be undertaken in consultation with Gravesend Borough Council and Kent County Council Highways, any changes to the content of this DCEMP will be discussed and agreed with GBC & KCC.

A highway condition survey will be undertaken by the developer to survey the roads within close proximity of the site prior to construction and submitted to KCC Highways for both parties' records.

10.0 Plant and Equipment

10.1 Overview

It is planned that throughout the duration of the project there will be a piling rig, 360 excavators, dumpers, rollers, a tower crane, mobile concrete pumps, hoists and mast climbers. All the plant and equipment on site will be maintained in accordance with the PUWER Regulations. All plant will also be operated by competent and trained personnel who will also carry out their weekly and daily maintenance checks. No plant will be operated on the highway unless they hold the relevant licenses.

Details of the Non-Road Mobile Machinery (NRMM) to be used in the demolition and construction phases will meet as a minimum the Stage IIIB emission criteria of Directive 97/68/EC and its subsequent amendments, unless it can be demonstrated that Stage IIIB equipment is not available.

Inventory of all NRMM will be registered on an NRMM register. All NRMM shall be regularly serviced, and service logs kept on site for inspection. Records shall be kept on site detailing proof of emissions standards for all equipment.

10.2 Fuel Storage

All fuels will be stored in a double bunded container with a capacity of 110% and kept padlocked shut when not in use. Drip trays will be used underneath the containers to contain any drips of fuel. A designate fuel storage area will be set up on the project away from any surface water drainage to ensure refuelling is carried out in a controlled environment. A spill kit will also be located in the controlled zone and in the event of a spillage the site management will be notified immediately, and the fuels cleaned up immediately.

Erection of large plant equipment such as the tower crane and mast climbers will be co-ordinated with the local highways, police and adjacent property teams if required.

11.0 Environmental

11.1 Ecology

A Preliminary Ecology Appraisal undertaken by Corylus Ecology was submitted at planning application stage.

A Preliminary Ecological Appraisal of the former M Block hospital building in Gravesend, Kent, found the site to have negligible potential for bats, with no further surveys required. Limited vegetation on-site led to no recommendations for additional surveys for other protected species such as birds, reptiles, dormice, or amphibians. Demolition should occur outside the bird breeding season (March 1st to August 1st) or be preceded by an ecologist's inspection. Nearby coastal habitats, known for supporting rare bees and wasps, inspired biodiversity enhancement recommendations, including pollinator-friendly planting (e.g., green roofs, living walls, fruit trees) and incorporating insect and swift bricks into the site design.

An arboricultural method statement and tree survey was also not required.

11.2 Historic Environment

This desk-based assessment has established that Historic research indicates that the site was agricultural land until the late 19th century when it became a timber yard, with buildings likely for storage and industry, including the area where M Block now stands. M Block, built in 1970 and terraced into the hillside, and associated services may have impacted potential archaeology, though some horizons near the chalk bedrock may survive. The exact path of a Medieval road crossing the site remains uncertain. While the site's development history suggests moderate impacts on surviving archaeology, the new L-shaped building and levelling of sloped ground west of M Block are likely to have a more significant impact. M Block's current dilapidation detracts from the area's setting, but the proposed design enhancements, including an L-shaped building inspired by Victorian architecture and timber yard history, aim to better integrate the development into the local landscape.

The construction of a new buildings at the Old Gravesend Hospital will involve groundworks which are likely to damage or destroy any archaeological remains present on site. Condition 11 of the planning permission will deal with this specific area of concern and will progress through the correct methodology to discharge the condition separately from this DCEMP.

If there is no archaeological sensitive areas found during the condition 11 discharge methodology, there is still a risk in areas not investigated during that process. The following outlines the procedures which will be followed in the event of such a find or discovery during groundworks:

- Immediately stop works in the area of the find.
- Protect the find and the area surrounding by fencing/blocking off and immediately contact the site manager.

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- Contact the Archaeology Consultant and obtain advice on how to proceed.
- All significant finds must be reported.

11.3 Contaminated Land

A ground investigation has been undertaken at planning application stage and a report has been produced. The report describes the contamination characteristics of the made ground and groundwater as indicated by ground investigations undertaken by GEA and proposed advice on mitigation measures required.

Method statements for excavations must identify the risks to health & safety and describe the control measures.

Should any significant contamination be found during excavation, risk assessments will be completed, and appropriate mitigation measures discussed with the regulatory authority and implemented as necessary. This is dealt with specifically by Condition 4 (contamination) and Condition 5 (remediation) and will be discharged as separate conditions to this DCEMP.

11.4 External Illumination

It is not intended to provide any external illumination during the construction phase other than some security lighting which will be located on the site cabins and hoarding and will be directed downwards to the central area of the construction site. These will be activated only by PIR controls. Some lighting may be installed on the crane mast, but this will be directly downwards.

12.0 Mud/Dirt on the Highway and Surface Water Management

12.1 Mitigation Measures

Minimising mud on the highway is to keep construction traffic on surfaced routes to and from the site. A hard landscaping area at the delivery entrance will be introduced, protected, and utilised for site deliveries. As vehicles enter the site they will do so on this protected surface, this will therefore minimise the opportunity for mud to enter the highway. The gateman will check each vehicle as it exits the site and is escorted back out onto the public highway. Additional regular checks will be made by the main contractor of the surrounding roads to ensure they are kept in a clean state.

At the commencement of the works onsite and prior to any main excavation works, in the short term to limit the amount of mud on the roads, a jet washer will be used to clean the wheels before exiting site onto the highway. Once the site operations are well underway it will not be necessary as vehicles will be fully on hard surfaced roadway.

As an additional precaution, a road sweeper will be deployed as and when required to ensure that the surrounding highway network is not affected.

12.2 Concrete Wash Out

The concrete washout will be undertaken on site. A specific washout skip will be positioned within the compound during concrete pouring operations for this. Concrete vehicles will be offloaded and cleaned within the site compound thereby ensuring no debris is deposited on the street.

12.3 Surface Water Run Off

Prior to commencing demolition works, the contractor will excavate a trench around the perimeter of the site. Within the trench a filter drain wrapped in a suitable geotextile terram will be placed within the trench and filled with suitable clean washed shingle.

At the end of the filter drain a sump will be formed to trap and hold any surface water that is collected from the filter drain. This will be pumped into a settlement tank. The settlement tank will be regularly drained via a mobile tanker who will collect this and transfer offsite to an appropriate facility.

13.0 Dust & Dirt Control

The successful tenderers site management team will conduct regular checks for the potential generation of dust on site. Any dust generated during the initial groundworks phase will be controlled by either towable water bowsers to suppress the dust across site, hose pipes or constant water spray/mists set on the hoarding to dampen down the site.

However, the main strategy to minimise dust will be to run site traffic on the existing and newly formed hard surfaces, this should reduce the possibility of dust being created on site.

Any other dust that is created from the use of concrete or wood cutting will be controlled by water suppression bottles or on tool local exhaust ventilation system.

When very windy conditions prevail and dust is being blown up onto the highway, work will stop until the situation can be appropriately controlled/remedied including any necessary liaison with KCC's highways department.

Compliance with current legislation on dust control including the Environmental protection Act 1990 and the Control of Act 1974 will be ensured.

13.1 Dust Emission Mitigation Measures

Issue	Control Measure
Operations	• Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques • Ensure an adequate water supply on the site for effective dust suppression, using non-potable water where possible and appropriate • Use enclosed chutes, conveyors and covered skips • Minimise drop heights and use fine water sprays wherever appropriate • Ensure equipment is available to clean any dry spillages, and clean up spillages as soon as reasonably practicable using wet cleaning materials
Waste Management	• No bonfires or burning waste materials
Construction	• Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out
Trackout	• Use water-assisted dust sweeper on access and local roads, if required • Avoid dry sweeping of large areas • Implement a wheel washing system, if required
Communications	• Develop and implement a stakeholder communications plan that includes community engagement before work commences on site

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	• 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 site manager • Display the head of regional office contact information • Develop an Air Quality Dust Management Plan (AQDMP) which may include measures to control other emissions, approved by the LA
Site Management	• Record all dust and air quality complaints, identify cause(s), take appropriate measure to reduce emissions in a timely manner and record the measures taken • Make the complaints log available to the LA on request • Record any exceptional incidents that cause dust and/or air emissions, either on or off site and the action taken to resolve the situation in the logbook
Monitoring	• Carry out regular site inspections to monitor compliance with the AQDMP, record inspection results and make an inspection log available to the LA upon request • Increase the frequency of site inspections when activities with a high potential to produce dust are being carried out and during prolonged dry or windy days conditions
Site Preparation	• Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible • Erect solid screens or barriers around dusty activities or 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 they are active for an extensive period • Avoid run-off of water or mud • Keep site fencing, barriers and scaffolding clean using wet methods • Remove materials that have a potential to produce dust from site as soon as possible, unless being reused • Cover, seed or fence stockpiles to prevent wind whipping
Operating vehicle/machinery and sustainable travel	• 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 sustainable delivery goods and material

14.0 Noise & Vibration Management

The working hours on site are described in the above chapters. Compliance will be ensured with current legislation on noise and dust control including the Environmental protection Act 1990 and the Control of Act 1974. Relevant codes of Practice set out procedures for dealing with the control of noise on construction and demolition sites as per BS5228: 2009 noise and Vibration Control on Construction and Open Sites.

The table below shows the significance threshold and noise limit for construction noise.

Relevant time period from BS 5228	Applicable time periods for the Project	Noise significance threshold dB LAeq,T 1	Noise limit dB LAeq,T
Daytime Weekdays 07.00 – 19.00 Saturday 07.00 – 13.00	Weekdays 07.30 – 18.00 Saturday 08.30 – 14.00	65	70
Evenings and Weekends Weekdays 19.00 – 23.00 Saturday 13.00 – 19.00 Sunday 07.00 – 19.00	Not applicable to the project	55	60
Night-time Weekdays 23.00–07.00 Weekends 19.00 – 07.00	Not applicable to the project	45	50
1. Noise significance criteria based on BS 5228 significance criteria (ABC Method)			
2. Based on criteria in BS 5228			

14.1 Noise Monitoring

In order to ensure and demonstrate compliance of the construction activities at the site to the appropriate limits, it will be necessary to undertake a scheme of compliance monitoring. Given the transient nature of the demolition and construction works, ad hoc monthly noise surveys will be carried out to demonstrate compliance with the appropriate noise limits. The noise surveys will consider the construction programme and identify when noisier works are scheduled to be carried out close to noise sensitive receptor locations.

In addition to the ad hoc monitoring, a long-term noise monitoring system with live Leq will be set up at the site compound. The compound presents a long-term source of construction noise. In the event that complaints regarding noise and/or vibration are received, measurements will be undertaken either at the complainant's property or at a suitable known reference distance from the works so that any additional attenuation factors can be determined in accordance with the procedures in BS 5228 part 1 and part 2; measurements if required will also be undertaken in accordance with these and other appropriate standards.

Fortnightly reports will be produced to analyse data from the long-term noise monitoring location(s) and for any random monitoring carried out. In addition to the reports, the relevant planning authorities will be provided with login details to view the live Leq data in real-time.

The contractor will be responsible for appointing a suitably qualified person(s) to carry out the noise monitoring, maintain and run the live Leq system and prepare the bi-weekly reports. All surveys and noise measurements will be undertaken in accordance with BS 7445.

14.2 Noise & Vibration Control Measures

Without prejudice to the other requirements of this section, the Contractor shall comply with the recommendations set out in BS5228:2009 and in particular with the following requirements:

- Vehicles and mechanical plant will be maintained in a good and effective working order and operated in a manner to minimise noise emissions. The contractor will ensure that all plant complies with the relevant statutory requirements
- HGV and site vehicles will be equipped with broadband, non-tonal reversing alarms
- Compressor, generator and engine compartment doors will be kept closed and plant turned off when not in use
- All pneumatic tools will be fitted with silencers/mufflers
- Care would be taken when unloading vehicles to avoid un-necessary noise
- The use of particularly noisy plant will be limited, i.e. avoiding use of particularly noisy plant early in the morning
- Restrict the number of plant items in use at any one time
- Plant maintenance operations will be undertaken at distance from noise-sensitive receptors
- Reduce the speed of vehicle movements
- Ensure that operations are designed to be undertaken with any directional noise emissions pointing away from noise-sensitive receptors
- When replacing older plant, ensure that the quietest plant available is considered
- Drop heights will be minimised when loading vehicles with rubble
- Vehicles should be prohibited from waiting within the site with their engines running or alternatively, located in waiting areas away from sensitive receptors
- Local hoarding, screens or barriers should be erected to shield particularly noisy activities
- Piling will be carried out with the method that minimises both noise and the transmission of vibration to sensitive receptors
- Temporary noise screens will be used to reduce noise from particularly noisy activities and the height of perimeter hoarding will be extended where this would assist in reducing noise disturbance at sensitive receptors

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- Hours of operation should be strictly enforced and any deviations other than those previously identified will be with the consent of the local authority

14.3 Notifications

Occupiers of adjacent properties will be informed by the Contractor up to 2 weeks in advance of the works taking place, including the duration and likely noise and vibration effects. In the case of work required in response to an emergency, the Environment Agency and local residents will be advised as soon as reasonably practicable that emergency work is taking place. Potentially affected residents will also be notified of the helpline number for the contractor.

15.0 Waste & Recycling

All waste generated during the construction phase will be disposed of using skips that have been supplied by reputable suppliers. Waste management licenses and waste carrier's licenses will be obtained from all suppliers prior to removing the waste from site thus ensuring that all waste has been dealt with in accordance with the regulations.

Any hazardous waste i.e. empty spray paint cans, oily rags etc. will be disposed of in the site hazardous waste drums. Once these are full, they will be collected and disposed of by a designated waste management contractor.

Some of the waste produced during the construction phase will be recyclable. All spoil arisings for the groundworks will be removed from site or used as capping material where permitted.

Designated skips will be used to recycle other waste.

Effective management of waste on site will consist of the following measures:

- Closed skip container (food waste etc.)
- Regular clean-up of the site
- Careful handling and transportation to avoid damage
- Efficient ordering
- Off-site manufacturing where possible
- Skips will be located adjacent the site entrance.



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