Construction and Environmental Management Plan



Project Description:

Erection of a four storey office building with associated car parking and landscaping.

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1.0 Construction Management

1.1 General

This is a baseline CEMP to discharge a pre-commencement requirement and further iterations of the CEMP will be submitted, as required, during the construction process as requested by the Council. The document outlines our approach to the construction and management of the project. We have included our overall intentions for managing and supporting the project and the particular approaches that will be taken for certain key aspects.

Certain areas of operation will be the subject of specialist consideration and more specific and detailed method statements relating to these operations will be developed and approved as the project proceeds. These additional key method statements will comply with the requirements of the relevant regulatory bodies and will be prepared by the specific contractor involved.

The document outlines our approach to the construction and management of the project, in response to the potential effects of development on the local environment.

Willmott Dixon company policy dictates the above is the case and is rigorously enforced through on-going Health and Safety Managers visits and Willmott Dixon Group Health and Safety inspections and audits.

1.2 Pre-start investigations

The following pre-start surveys have been completed:

- Underground service GPR survey
- 3D Topographical survey
- Drainage CCTV surveys
- Surface & foul water drainage assessments
- UXO desktop survey
- Land contamination assessment / geo-tech report
- Ecological Phase 1 survey
- Acoustic noise impact assessment
- Flood Risk Assessment
- Air Quality Assessment
- Daylight / Sunlight Assessment

Notification of the project commencement will be issued to all statutory authorities advising them of the construction works and confirming the proposed programme of works.

Pre-commencement newsletters will be delivered to all neighbouring addresses introducing our site team and outlining our upcoming activities and relevant points on contact. This will continue on a regular basis, or as requested throughout the works.

In addition we will agree regular meetings with the appropriate stakeholders to keep them informed or receive feedback on our site operations.

At the commencement of the contract, Willmott Dixon will commence the logistics activities which are detailed below.

1.3 Security and site establishment

The main construction site will be established as shown on the Construction Logistics Plan (appended). The site compound for welfare and offices is to be located on the site of the now demolished old civic offices, making use of the existing blue ply hoarding for its boundary. It is our intention to only make use of the existing car park of the old civic offices site and to fence off the footprint area of the demolished building.

Heras type fencing will be erected in the first instance to secure the main construction site area. Timber hoarding (2.4m high) will then be erected along Ham Road, the adjacent residential access road and the Dunelm car park to fully secure the site from the public. The existing palisade fencing to the railway will be maintained.

A new pedestrian access gate will be installed in to the existing hoarding of what will be our site compound. Operatives will use a temporary crossing point across Ham Rd to gain access to site via the stair next to the substation. This pedestrian access on to the main site will be controlled by a biometric turnstile.

Exact colours of the hoarding and any artwork are currently being determined by the Customer but are likely to be Willmott Dixon Company standard colours of yellow, black and white (As shown). Any graffiti applied to the hoarding will be removed.



An example of our typical no-dig Willmott Dixon hoarding that will be used on site

Our hoarding line along Ham road will be installed along the kerb line of Ham road in order to provide access for the construction of the new retaining wall. This will require the closure of the footpath at either end of site and pedestrians diverted across Ham Road.

Site entrance and exit gates are to be positioned off the Glyndebourne Court Access Road.

Initially, a temporary oasis unit will be located on the site of the demolished civic offices as detailed in the logistics plan to provide office and welfare facilities for the initial site establishment works. Larger welfare and office facilities will be installed as noted on the logistic plan to cater for staff and operative levels expected during the main works.



An example of a temporary Oasis type welfare and office facility

The office and welfare facilities will provide meeting room spaces, canteen space with seating suitable for breaks to be taken in shifts, wet and dry changing rooms as well as showers and toilets . Office facilities with be shared by both Willmott Dixon staff and our supply chain partners to avoid the need for multiple offices within the constrained site.



An example of a typical site office and welfare facility used for duration of the main works (note that our unit will be three units upon three units)

1.4 General access strategy – traffic and vehicle management plan

The main vehicle access to site will be via the Glyndebourne Court Access Road. Two gates will be installed across what is currently the existing carpark entrance and exit points. Site vehicles will have access via the either gate dependant upon the site activities at the time. The existing tarmac will be left in place for as long as possible to mitigate any material being tracked off site by vehicles.

Due to the limited space on the main construction site all delivery vehicles will route to the site compound for a briefing by the site management. Materials will be brought to site in a 'just in time' basis and will be distribruted into the building via loading bays. If materials cannot go straight into the building or onto site, they will be stored on the office compound until needed. Materials will then be transferred across the road using smaller rigid trucks or forklifts. These transfers will happen under the supervision of the Gateman / Traffic Banksman who will control public traffic as required.

Access to the site compound area to the South will be via the existing site access gate. A gatehouse will be located at the entrance to the main site for security and traffic management. A gateman will be present between 8am and 5pm to control all deliveres and oversee the transfer of materials and personel across Ham Road on to site.

A holding bay will be located inside the vehicle gates to control entry to site but to allow vehicles to pull off Ham Road.

Willmott Dixon will agree and set our parking and delivery protocols with our supply chain. We will establish details and opportunities to travel by bus, train or bicycle. Cycle racks will be provided by the welfare facilities.

Deliveries will be operated on a 'one in one out' basis due to the constraints of site, and as such a booking-in system will be in place. All deliveries to site will need to be booked in at least 24 hours in advance of their arrival on site.

All vehicles entering and exiting site will do so under the control of the control of the Gateman as will any vehicle reversing in order to turn and exit the site compound.

An area of the site compound to the West will be designated as a parking area for private vehicles and small vans. A 'No inconsiderate parking' brief will form part of the new startes site induction and no parking in the local residential areas will be permitted.

A 5mph speed limit will be signed and enforced on site. Safety signage will be displayed noting access routes, parking restrictions and delivery hours.

It is anticipated that at peak times 50 vehicles (staff and operatives) will access and park on site, and a further 10 – 20 vehicles per day for deliveries.

1.5 Wheel washing facilities

The project consists of minimal groundworks and is entirely carried out off the existing hardstandings within the site boundary of the existing carpark. We will have on site during our works a mobile jetwash bowser to wash accumilating dust off vehicles and deal with any unexpected mud. Road sweepers will be brought to site as required to keep the access road in a presentable state.

1.6 Signage

Site signage will be provided within the boundaries of the site as necessary to advise operatives, visitors and delivery staff of safety requirments within the confines of the site, and where to report on arrival. Such signage will include:

- Accommodation / access requirements
- Speed limits
- Overhead or underground services
- Safety helmet, footwear and PPE requirements
- Noise

- CCS - Considerste Constructors Scheme
- Directional
- Traffic directional outside site boundary

1.7 Movement and hoisting of materials (crane and hoist)

All vehicle movements and deliveries will be subject to the control of Willmott Dixon. A detailed tracking exercise and consultation process will be carried out to ensure vehicles can access and exit the site safely.

The storage of materials on the main site will be kept to a minimum and any materials stored in the site compound will be secured in lockable ISO shipping containers. In order to avoid unessessary storage; delivery scheduling will be carried out to ensure supply is on a 'just in time basis'.

Vertical movement of materials will be by a telescopic forklift to loading bays.



An example of a mobile all terrain crane which will be used on site

Mobile all terrain cranes will be located between the new building and the Ham Road boundary for the installation of the structural steel frame, windows & curtain walling and placing roofing materials and mechancal plant on the roof.

All lifting of materials will be within the confines of the site boundary and we will work with Network rail in order to comply with our obligations for work next to the railway.

1.8 Storage and handling

Some storage will be available on the construction site but some materials will be stored within the site compound as space dictates.

1.9 Site Waste Management Plan

Waste volume will be minimised through intelligent design ensuring that material cut offs are minimised and standard material lengths are adopted where possible. Through the design process packaging, whilst used where necessary, will also be kept to a minimum. Items such as timber stillages, pallets and large cable drums will either be returned to the original supplier or recycled.

We will aim to retain all excavated material on site.

Excess materials will be re-used where possible to minimise waste streams.

Waste will be segregated on site for re-use and recycling. Waste skips will be provided and positioned adjacent to the vehicle entrance of the main construction site. All trades will be required to collect, transport and deposit their waste within these skips.

We will track waste useage against our Willmott Dixon company targets with our skip waste calculator.

The financial cost associated with the creation, removal and disposal of waste is significant. Beyond ensuring legal compliance, our approach to waste falls into 2 categories:

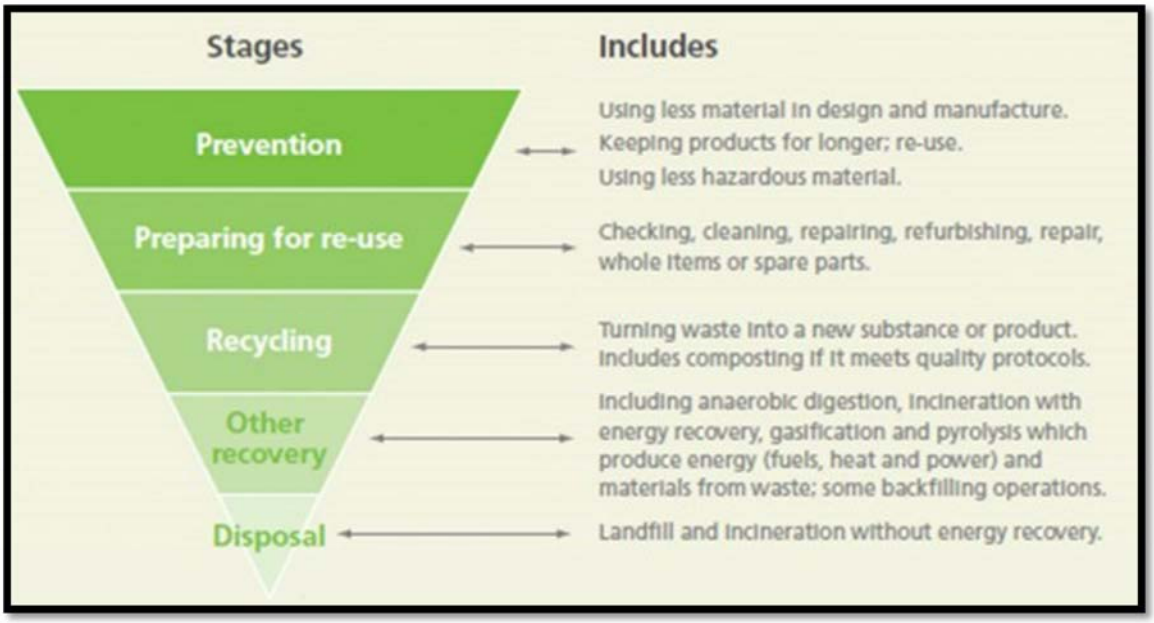
1 - Reducing the volume of construction waste we produce - Whilst diverting waste from landfill is important, the biggest financial benefit to Willmott Dixon is to reduce the volume of construction waste we create. In 2009 Willmott Dixon calculated that the true cost of a 12 yard skip was nearly £900, with inflation the true cost of construction waste leaving our site today is over £1000. This cost is made up of the skip hire, labour to load, and the purchase cost of the materials we are buying to throw away.



Our 10 Point Plan has progressive targets for reducing the volume of construction waste we produce. Whilst inevitably there will always be some construction waste, here are some ways we can reduce the amount of construction materials we dispose of:

- A new innovative approach to waste management was trialled at Ashcombe School where the supply chain were financially incentivised to reduce construction waste, saving £10,000 in disposal costs and halving the volume of construction waste typically produced.
- By making resource efficiency a consideration at the beginning of a project, it is possible to reduce waste through design and specification.
- Fully co-ordinated design information through the use of BIM can avoid costly rework time and resources.
- Create and maintain a material re-use area and donate any surplus materials.
- Ensure that all skips are fully loaded with minimum void spaces; this saves money and reduces transport impacts.
- Maintain best practice materials storage on site to reduce damage and double handling.
- Store all pallets and return to the builders' merchants/manufacturer, or recycle via organisations such as Scott Pallets and The National Community Wood Recycling Programme.
- Set up material take back schemes where waste materials can be returned to the manufacturers for reprocessing.
- Actively engage with the supply chain and manufacturers to reduce packaging waste.
- Engage with ready mixed concrete suppliers to see if they can avoid the washing out of their concrete wagons on our sites, though either modern concrete trucks with built in wash out troughs, or through the use of products such as concrete socks.

2 - Diverting waste from landfill - Since April 2016 waste to landfill has been taxed at £84/tonne. In 2016 we were responsible for producing 35,750 tonnes of waste. 98% of waste was diverted meaning the remaining 715 tonnes were disposed of in landfill. Landfill tax has encouraged Willmott Dixon to produce less waste and use alternative forms of waste management.



Our 10 Point Plan includes targets for the diversion of Construction, Demolition and Excavation (C, D & E) waste from Landfill and we have an ambition to send zero construction waste to landfill by 2020. This will not only save us money, but it also increases resource efficiency. The European Union (EU) Waste Framework Directive places greater emphasis on the waste hierarchy to ensure that waste is dealt with in the priority order illustrated. This is transposed into UK legislation through the Waste (England & Wales) Regulations 2011.

The majority of our waste will undergo sorting and treatment by Waste Management Contractors (WMC) in preparation for reuse, recycling, recovery or disposal. Our selection of waste and demolition contractors has a huge bearing on our ability to divert waste from landfill. Our Sustainable Procurement Policy requires: *us to only work with companies who can demonstrate a minimum diversion from landfill of 95% for mixed construction waste, unless this is agreed with the Group Environment Manager. We also encourage reporting in accordance with PAS 402. Trade contractors employing their own waste contractors to remove waste material from our projects must operate to the same standard.*

We will carry out regular audits of waste contractors to ensure that they have advanced waste management capabilities that guarantee maximum segregation and recovery.

1.10 Scaffolding

We will aim to undertake work to the building's elevations off of MEWPs (Mobile Elevated Working Platforms). Scaffolding will be erected as required to areas where MEWP access is not possible or where independantly supported edge protection is required.

1.11 Temporary Services

Power supply will be provided from the existing supplies with incoming mains terminated in a proprietary TBS cabinet. 110v power will be utilised throughout the building with suspended power drop cables located in various areas.

Safety and emergency lighting will be used. All lighting will be controlled via time clocks. Any external floorlights will, where possible be pointed into the site to avoid nusiance from light pollution. Bulkhead lights will be placed on highway faing hoarding.

Water will be provided directly from the mains system for use in the welfare facilities and temporary drainage will be connected to the existing foul drains.

Telephone lines and electronic data transfer lines will be provided to the site offices. The use of a generator to supply power to the whole site or any significant plant is not anticipated. The oasis unit used for the site establishment runs off a gas powered generator that is housed in an acoustic enclosure.

1.12 Dust and Debris Control

Best practice will be employed in respect of dust and debris control from the breaking out and construction activities and the following mitigation measures will be employed during these phases of the project to ensure the impact of onsite activities are reduced to medium or low risk.

Site planning:

- Erect solid barriers to sensitive site boundaries
- No bonfires
- Plan site layout – where possible (noting constraints of site) have machinery and dust causing activities away from sensitive receptors
- All site personnel are fully trained
- Maintain hard surface routes and keep these free from dust.

Construction traffic:

The following plant machinery is expected on site. The list is not exhaustive.

- 360 excavator
- Dumper
- Concrete pump
- Forklift
- Mobile crane
- Scissor lift
- Cherry Picker

Actions for Construction Traffic

- All vehicles to switch off engines
- All loads entering and leaving site to be covered
- No run off to site water or mud
- All plant machinery to be regularly maintained and appropriate filters in place
- Regulate movement of construction traffic on site
- Ensure that onsite roads are effectively maintained and kept clean.

Site activities:

- Minimise dust making activities – Damping down procedures will be employed
- Use water as dust suppression especially throughout demolition and drop zone activities
- Minimise stock piling of materials and sheet if required.

On the basis that best practice measures are to be adopted at all times along with the mitigation measures identified, a visual assessment is considered appropriate for this site.
The following 5 point assessment scale should be used when making a visual assessment of any impacts on the downwind boundaries of the site.

Table 1: Visual inspection assessment

Point	Significance	Description
1	None	No visible emission.
2	Slight	Visible emission settling within 50m of source.
3	Moderate	Visible emission settling more than 50m from source but more than 100m from the boundary.
4	Serious	Visible emissions settling less than 100m from site boundary.
5	Major	Visible emissions crossing the site boundary.

Dust trigger levels

Trigger levels have been defined in two stages - the first stage should be used to identify preventative measures where dust or emissions have the potential to reach unacceptable levels. In these circumstances the site manager will indentify the source and review the process, taking any necessary preventative action.

The second trigger stage is defined as the level above which dust or emissions are at an unacceptable level at the sensitive receptor location. Action must be taken to firstly suppress, or secondly contain the emissions so that they are reduced back down to acceptable levels.

Table 2: Trigger levels and actions

Monitoring parameter	Specific trigger level to activate an action response	Specific action to be taken following exceedance of trigger levels
Visual inspection of particulate emissions	Moderate (3)	1st trigger level Site Manager to indentify source(s), review process and take necessary preventative or corrective action.
Visual inspection of particulate emissions	Serious (4) Major (5)	2nd trigger level Site Manager to instruct modification to or suspension of any operation or process causing visible dust emissons.

1.13 Noise control

Overview

Noise and vibration from construction operations have the potential to disrupt and cause annoyance to the adjacent neighbourhood. It is therefore vital in a construction project of this nature to minimise any such disruption where it can be practically done so.

Through careful planning, activities likely to cause concern can be identified to allow for suitable mitigation to be applied. All aspects of construction noise are closely monitored and can be used in consultation with the local Environmental Health Officer.

Table 3: Likely noise to be generated from construction plant

Ref	Plant description	A-weight sound pressure level LAeq dB
1	Dumper	80
2	Mobile crane	67
3	Scissor lift	78
4	Concrete truck (discharging)	75
5	Delivery vehicle	75
6	Generator	55
7	Concrete pump	67

Sound pressure levels will be no greater than 75dB (A) during the permitted working hours.

However there will be a period of time where we will be required to breakout part of the carpark hard standing where average sound pressure levels will be higher for a period of time. What these sound levels will peak at is dependent on the condition of the Tarmac and any obstructions encountered.

Mitigation measures will be taken, as suggested in the Code of Practice BS 5228, to lessen the noise outputs and avoid any potential vibration impacts during the construction phase. This includes the selection of the appropriate construction plant and methods, monitoring of works that may create excessive noise and vibrations and adherence to the working hours as outlined in the planning conditions. This also applies to vehicles delivering to site.

Potential mitigation measures may also include acoustic screens for isolated sections of work (if noise levels exceed permissible levels); ensuring plant equipment is turned off when not in use. We will always introduce briefings and toolbox talks to the workforce so they are fully aware of the noise and environmental issues associated with the project.

Community relations

The establishment and maintenance of good community relationships will be a priority. This will include informing local residents along Ham Road and Gordon Road of the works by way of, direct communications and meetings, leaflet drops and / or public presentations and ensuring measures are put in place to minimise noise impacts.

On week 1 of the contract Willmott Dixon will hold an initial residents meet and greet. The proposed date and time is Thursday 8th March at 12:00 in the temporary site offices within the old Kier compound opposite the main construction site. We plan to deliver a presentation and hold discussions on the drawings and upcoming works. This will be an opportunity for the residents to ask any questions regarding the project.

As policy, we deliver a monthly newsletter where updates are provided including information regarding up and coming works. Within the initial meeting we will agree with the residents how frequent meetings need to be held and what information they wish to be kept to date with. At minimum we will hold meetings quarterly. All meeting will be held within the site offices so the facilities are familiar with the residents should they have any points of discussion outside agreed meetings.

We have an open door policy and this will be well communicated to the local residents.

Training of employees

Operatives will be trained to employ appropriate techniques to keep site noise to a minimum and should be effectively supervised to ensure that best working practice in respect of noise reduction is followed.

Execution of works

Reasonably practicable measures to manage construction noise and vibration impacts which will be undertaken during these works including the following:

- The hours of working will be planned and account should be taken of the effects of noise upon persons (residents and local businesses) in the areas surrounding the site operations, and upon persons working on site, taking into account the nature of land use in the areas concerned, the duration of work and the likely consequence of any lengthening of work periods
- On-site noise levels will be monitored regularly, particularly if changes in machinery or project designs are introduced
- On those parts of a site where high levels of noise are likely to be a hazard to persons working, prominent warning notices will be displayed and where necessary ear protectors should be provided.

1.14 Safety

Full recognition and regard will be taken in the management and execution of the project of the Construction Design and Management Regulations 2015.

All supply chain constractors are obliged to provide safety policies, plans and method statements and will be interviewed prior to order placement on all aspects of safety, health and welfare.

All sites are subject to independent site safety checks, inspections and reports by our own independent site safety inspectors and advisors.

1.15 Environmental and biodiversity

Willmott Dixon environmental policy requires a Biodiversity Champion to be appointed within the on-site team. A nominated Willmott Dixon Site Waste Champion will also be appointed from within the site team.

A Phase 1 ecology survey has been completed and the findings incorporated into the design and site processes. The protection of retained trees and roots will be implemented. Information gained from the surveys and will be followed to manage any trees within the construction area.

Full project specific environmental plans and SWMP will be developed prior to our start on site and these will be approved by Willmott Dixon's environmental manager.

1.16 Community engagement – Considerate Constructor's Scheme

The nature of Willmott Dixons business requires a multi-level approach to planning a community engagement programme which will take into account a range of long term and short term engagements as befitting the location. Some ideas of what Community Engagement may involve are:

- Positive impacts upon the local employment scheme
- Regular newsletters
- Coffee mornings / open evenings
- Open site / supervised site walk around
- An open door policy.

We will have an appointed manager on site that will make sure the lines of communication are kept open and there is constant dialogue. The working site will be kept clean and in good order at all times. This is to include the immediate surrounding roads and footpaths that should be kept free of litter build up associated with our works. Respectable and safe standards of dress will be maintained at all times. Lewd or derogatory behaviour and language will not be tolerated under threat of severe disciplinary action.

Willmott Dixon are associate members of the considerate construction scheme and repeatedly gain audit scores higher than the national average. Scheme contact details and the Site Managers contact details will be displayed on the hoarding on Ham Road. Our out of hours emergency contact details will also be displayed on the hoarding.

1.17 Local spend

Our supply chain system is assembled in local hubs and we automatically aim, where possible, to select local contractors enhancing the value of local pound expenditure.

2.0 Construction Management

Below is a list of bullet points which outline the sequence of construction activities that will be undertaken and associated equipment required to construct the office building.

2.1 Site Establishment

- Secure the site – Erect hoarding
- Install temporary welfare – Oasis unit
- Set up site compound – This will be located on the old Civic Offices site
- Remove existing retaining wall along Ham Road and batter back
- Break out hard standings – This will be undertaken using an excavator mounted breaker
- Reduce levels
- Install Piling Mat – Material to be imported, spread and compacted using an excavator and roller

2.2 Substructure

- Piling – Continuous Flight Auger piles. 1 x Piling rig required
- Ground Beams & Pile caps – Ready mixed concrete will be pumped
- Under-slab drainage & Ground floor slab – to be installed after the steel frame and first floor deck completes

2.3 Superstructure

- Structural steel frame – To be erected using 1 x mobile crane and cherry pickers
- Metal deck – This will be loaded out & positioned during the frame erection
- Structural topping to metal deck – Ready mixed concrete will be pumped
- Stairs – Pre-cast concrete stairs will be lifted in using a mobile crane during steel frame erection

2.4 Envelope

- Roof – Single ply membrane roof build up
- Envelope – Metsec frame & board & windows will be installed off of MEWPS and some crane use
- Cladding – Curtain Walling & Brick slips will be installed off of MEWPS

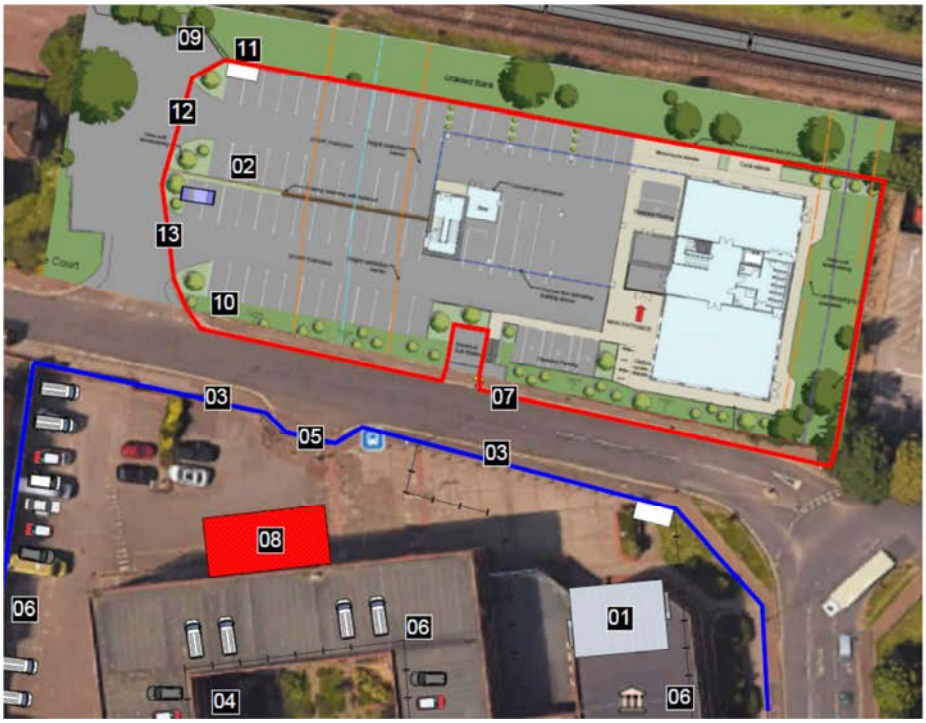
2.5 Internal Fit out

- Programme & sequence to be developed

2.6 Outline Programme

- Start on Site – 5th March 2018
- Contract Completion – 17th May 2019
- Duration – 61 Weeks

2.7 Construction Site Setup – Plan View

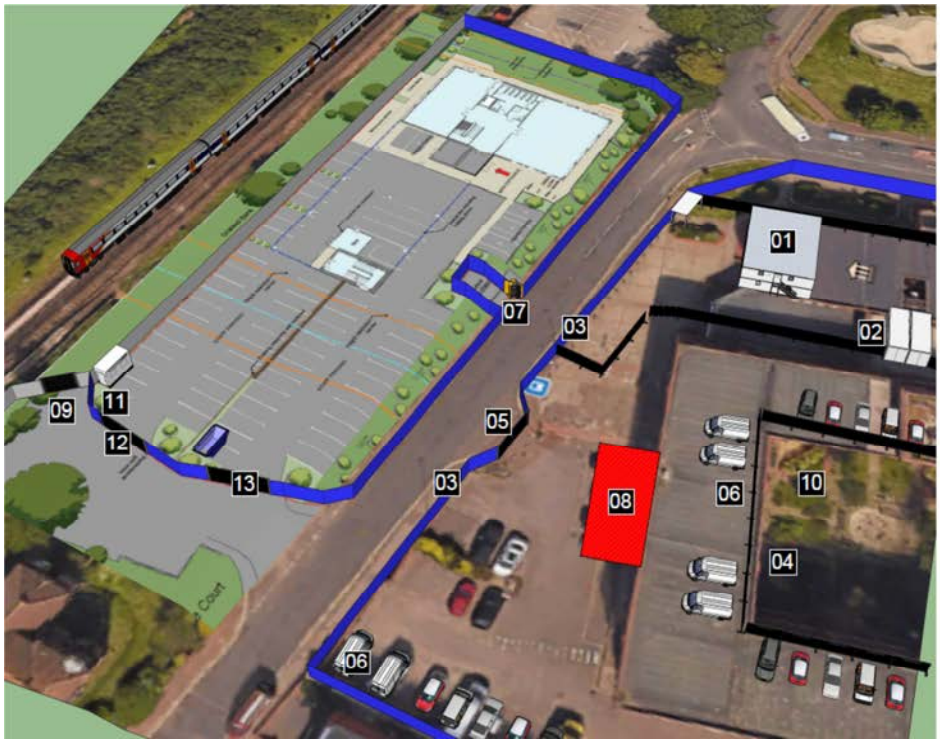


Key:

01 - Welfare & Offices
02 - Storage
03 - Pedestrian Gate
04 - Unloading Area
05 - Compound Vehicle Access
06 - Parking
07 - Site Pedestrian Gate
08 - Ramp
09 - Keep Clear - Network Rail Access
10 - Waste Segregation
11 - Gate Man Hut
12 - Vehicle in Gate
13 - Vehicle out Gate

Site Boundary
Site Compound Retained Hoarding

2.8 Construction Site Setup – Isometric View



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