Moxon Street

Site Environment Management Plan Rev 0 17.07.18

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Project Name:	Moxon Street	Contract No:	
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Contents

1. Introduction

This SEMP has been prepared for submission to WCC relative to planning permission 14/10918/FULL Section 106 schedule 1, 7.1 & 7.2. This document will provide the overarching site environmental management plan and will be developed to incorporate the Section 61 application and the employment and skills plan as per the City of Westminster Code of Construction guidelines.

With a proposed GIFA of 25,000m2 in total, the Moxon Street project is of a size that falls into the Level 1 project size as designated by the City of Westminster Code of Construction.

It is a mandatory requirement of Kier London for all projects to be registered with the Considerate Constructors Scheme, and given the prominent nature of the scheme and the adjacent receptors we want to push for the project to achieve an Ultra site status.

This EMP has been prepared in accordance with the Kier SHEMS Environmental Management Standards and Guidance. It identifies specific environmental issues associated with Moxon Street project, and stipulates core procedures that will be used to manage them. Relevant environmental information will be communicated as required.

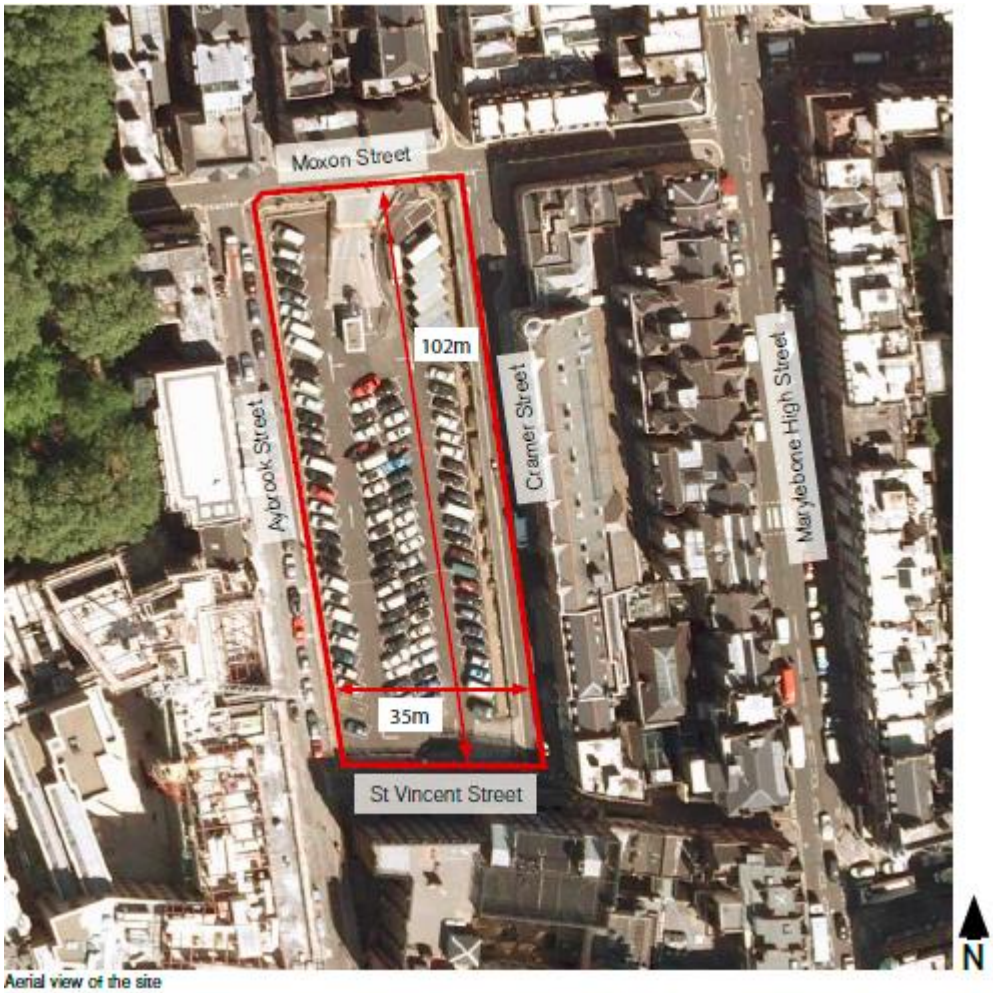
All amendments to this EMP must be made by project management in consultation with the Safety, Health and Environmental Manager or Environmental Manager / Adviser.

2. General Project Information

EXISTING SITE

The site is located one block west of Marylebone High Street and is bounded by Moxon Street to the North, Cramer Street to the East, St Vincent Street to the South and Aybrook Street to the West. The island site is generally 35m wide and 102m long, giving a development area of 3,850m2.

The existing condition is that of a car park, accommodating approximately 115 car parking spaced arranged in a herringbone layout in two aisles, accessed via a steep ramp off Moxon Street and bounded by a metal and wire fence. The existing tarmac level is set lower than the surrounding streets, accounting for the general fall in street level of approximately 1.5m from North to South. On Sundays, Marylebone Farmers' Market is held on site between the hours of 10am and 2pm. The market takes up the southern quarter of the site adjacent to St Vincent Street, and has approximately 30 to 40 stalls.



Aerial view of the site

PROPOSED DEVELOPMENT

The Moxon Street project will provide 54 private apartments and 25 affordable apartments situated from level 1 to level 5. The ground floor and lower ground floor areas provide retail, restaurant and community facilities, including a community hall (Marylebone Hall) which can be used by the Marylebone Farmers' Market, as well as a community health centre and a gym. The basement 1 level houses a 95 space public car park including 21 electric vehicle charging points and basement 2 contains plant space and Private residential car parking (56 spaces) and cycle parking (102 spaces)

The lower ground and basement extend out under the pavement on all 4 sides of the site, and ranges between approximately 12-15m deep below pavement level. There are buildings fronting onto all of the streets surrounding the site. These buildings are between 6.5m and 12m away from the site boundary, depending on the width of the road and the pavement. All of these buildings contain at least a single storey basement.

Table of areas

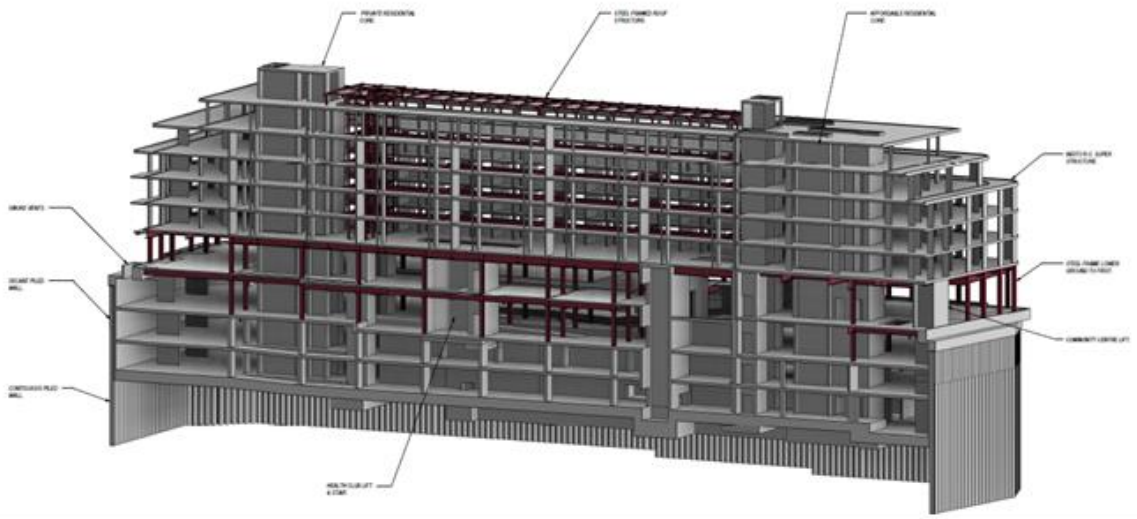
Use	GIA/m²
Private residential	8,734
Affordable residential	3,422
Commerical	3,911
Community	614
Marylebone Hall	334
Landlord areas / Plant	2,261
Car parking	5,884
Total (m²)	**25,160**
Total (sqft)	**270,822**

Apartment mix

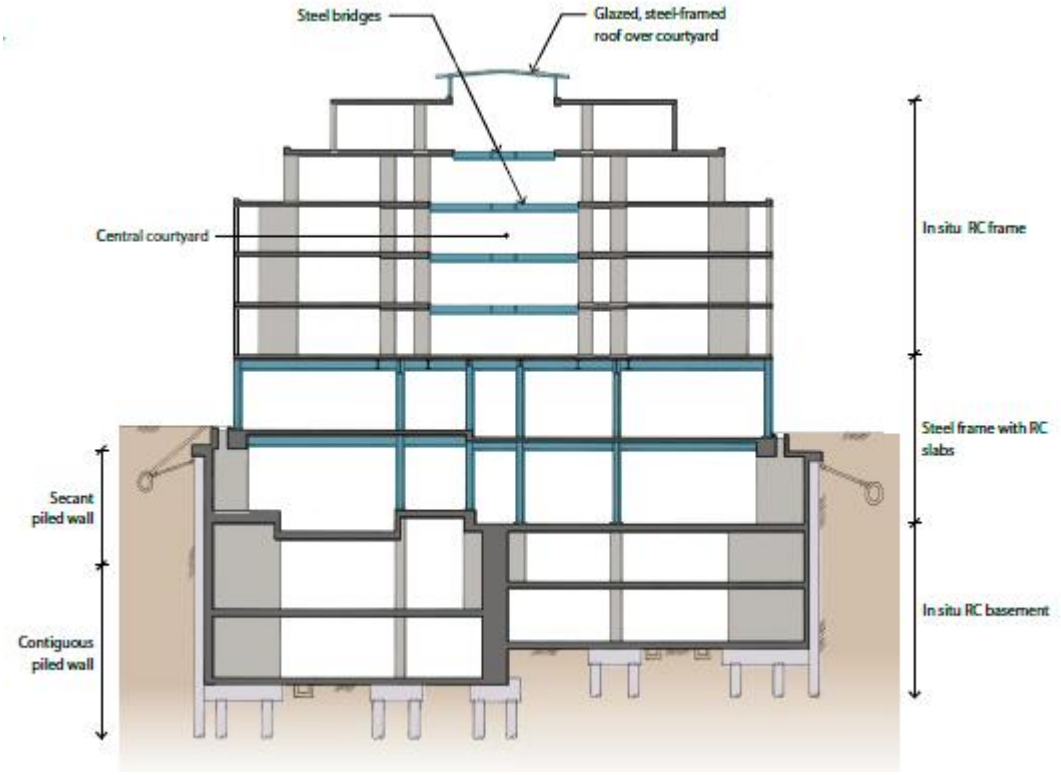
Type	Private	Affordable	Total	%
1 bed	6	11	17	21%
2 bed	29	7	36	46%
3/4 bed	19	7	26	33%
Total	**54**	**25**	**79**	

BUILDING STRUCTURE

The overall development comprises a three storey, 12-15m deep basement, with 6 storeys above ground. The two lowest basement levels (referred to as B1 and B2), will contain car parking and plant rooms. The upper basement level (referred to as lower ground (LG) and ground floor contain retail, restaurant units, a health club and community uses. First floor and above contain residential apartments.



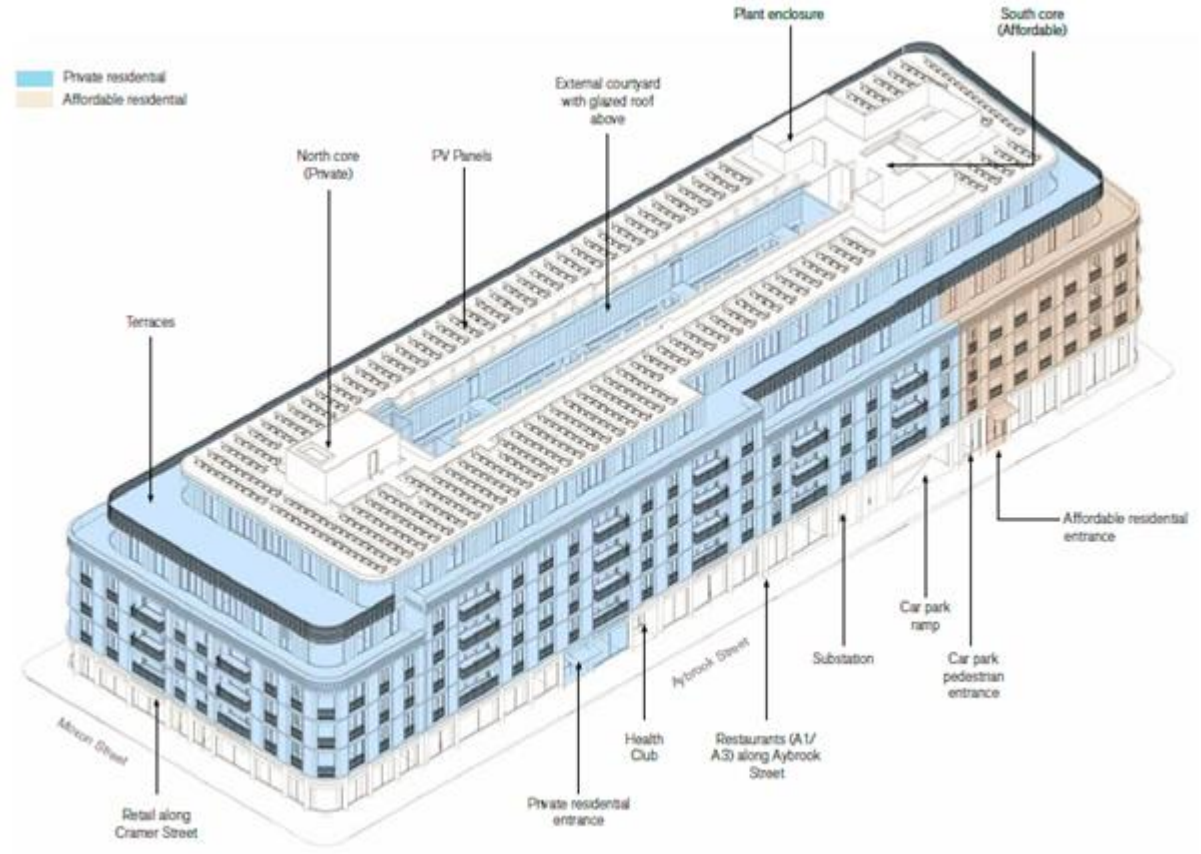
The building superstructure is split into two sections, with an expansion joint between the two. A central covered courtyard extends from first floor to roof, with access to the apartments via link bridges running through the courtyard at each level. The structure comprises a mixture of in-situ, reinforced concrete flat slab and post tensioned concrete construction to suit the requirements of the different uses and the need for transfer structures. The two lower basement floors are formed using in-situ concrete construction. The ground and first floor are post tensioned transfer slabs to accommodate the changes in column grid between the residential and retail uses. The superstructure above first floor then reverts to in-situ reinforced concrete flat slab construction. In-situ reinforced concrete cores extend to the full height of the building at each end, which are used to provide overall lateral stability to the building.



BUILDING ENVELOPE

The building envelope consists of Ground Floor and three principle storeys with glazed ceramic cladding and large glazed shopfronts, with a further two floors stepping back progressively above, clad in aluminium rainscreen. The bespoke ceramic cladding is complemented by cast aluminium balustrading and handrails, with a feature back-lit ceramic frieze at the top of the ceramic cladding.

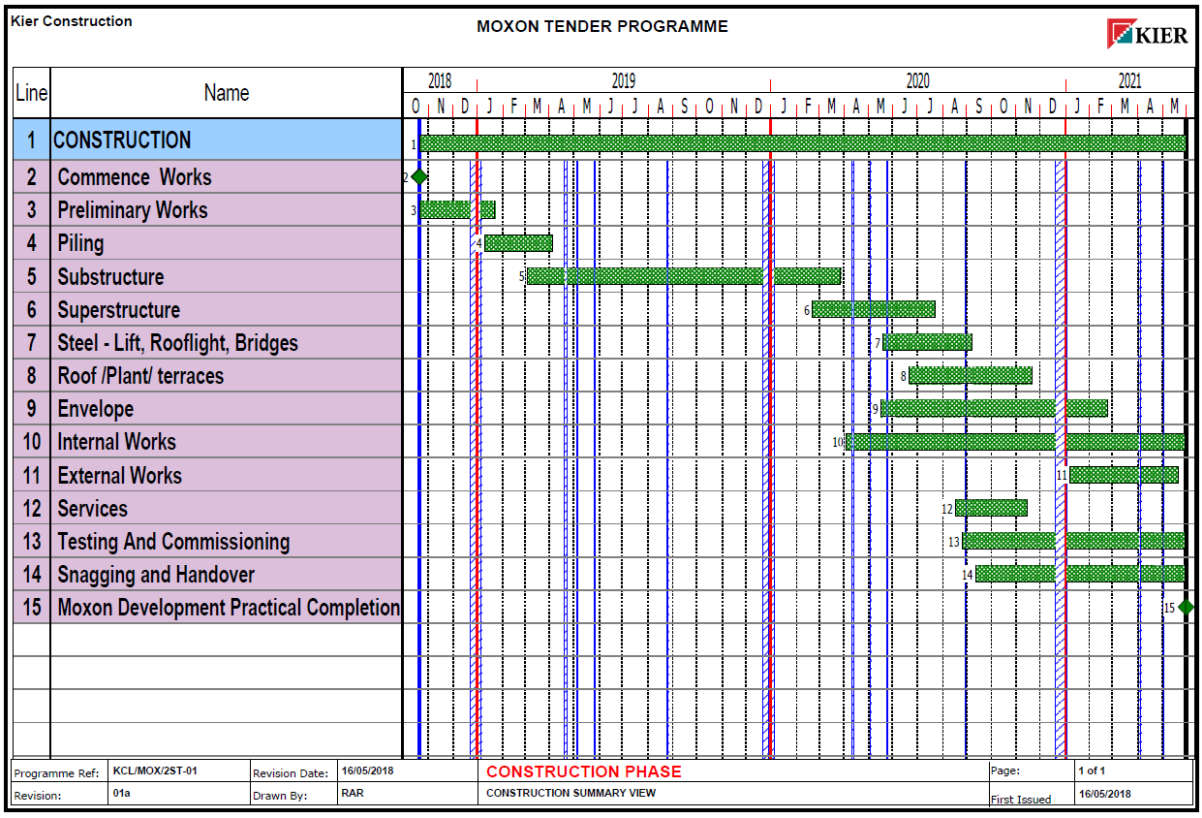
The articulation of the façade is influenced by the accommodation layout behind, with one window per bedroom, sliding doors to the livings rooms on to the external balconies, with the upper floors stepping back to provide external roof terrace spaces. The roof level has a green roof finish with PV panels, and a plant enclosure to the Southern end of the site.



A central external courtyard provides an amenity that allows daylight to penetrate into the heart of the building.

The courtyard provides a covered, naturally ventilated space providing protection from rain and snow for residents to access their apartments via walkway bridges, which also provide the service distribution routes into each apartment.

3. Programme of Works and working hours



The above high level programme identifies the main phases of the construction programme. The first activities consist of enabling works to remove the existing pavement vaults and car park build up, along with setting up the site welfare facilities and installing hoarding. Following this there is a circa 3 month piling period for the perimeter piled wall and internal temporary works piles, which then lead into a year long period of substructure works, forming the triple storey basement and installing the B2, B1, LG and Ground floor structures.

Superstructure works then follow with the level 1 transfer slab, followed by the doughnut shaped superstructure floors forming the central courtyard space. The link bridges will be installed as the concrete works progress, and when the structure is up to level 3, the scaffold will begin to be erected to the perimeter of the building to facilitate the envelope installation. The envelope activities then release the internal fit out of the project, which runs for around 14 months up to project completion.

The standard working hours on the project will be;

Monday – Friday 8am – 6pm
Saturday – 8am - 1pm
Sunday – no works planned

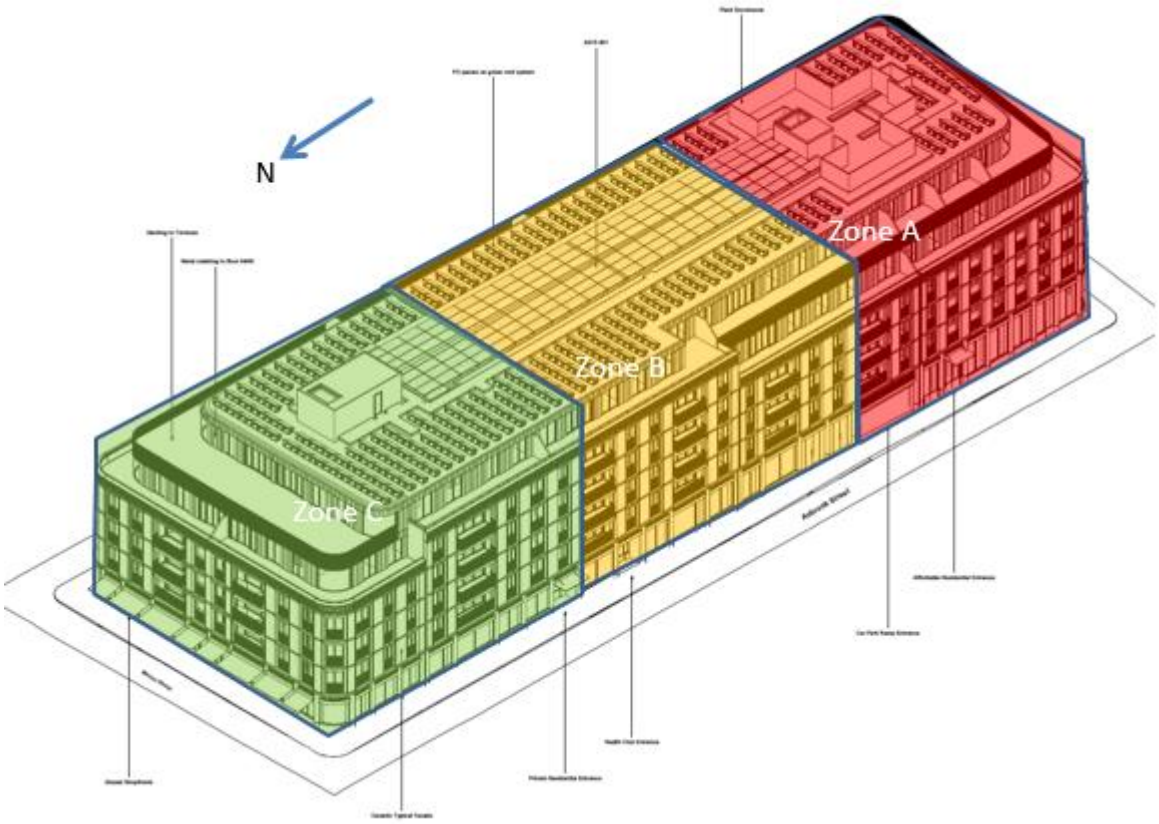
All loading, unloading and deliveries of materials and plant to the site and removal of waste will be carried out within normal site working hours as highlighted above. A competent banksman will provide assistance to vehicles accessing and leaving the site, thereby ensuring minimal traffic disturbance and pedestrian safety.

There will be no on-site parking available and operatives will be encouraged to travel to site using public transport. Details on traffic and delivery management can be found in the following sections.

A wheel wash facility consisting of a manned jetwash and hardstanding will be in place throughout the substructure works, with the target to install the ground floor gantry as soon as possible as per the below sequencing to prevent any lorry movements on muddy ground. A road sweeper will be made available for emergencies if required and will attend at regular intervals to clean the gantry and the surrounding roads.

4. Sequence of Construction Activities Undertaken on Site

Throughout the build due to the scale of the site, the project is split into three physical sections as highlighted on the image below. Generally as the deepest part of the basement is to the South of the project, and the muckaway gantry is formed in the North, the programme is driven from the South of the site moving to the North.



A series of structures around the site perimeter act as retaining walls to support the higher pavement levels. These largely comprise sections of the original pavement vaults to the terraced houses, which have been bricked up and left in-situ. In some areas, additional buttressing and propping has been installed, presumably where there has historically been signs of movement.

Construction of the new building, particularly the basement, will be challenging, due to the basement depth, complex structural arrangement and limited space available around the site perimeter. The first step will be for the various service diversions required around the site to be completed by the statutory undertakers. Once these are complete, the hoarding can be installed. On the west and south sides, the permanent hoarding can be installed at this stage, positioned in the street. This will require car parking spaces on Aybrook Street to be progressively suspended as the enabling works develop. On the north and south sides a temporary hoarding will need to be installed. The plan position of this hoarding will need to be able to be altered as the works progress, so the hoarding at this stage will need to be designed to be altered, using posts fixed to concrete kentledge blocks or similar.

The next step will be to remove the existing vault structures around the perimeter of the site. This will involve importing fill material to the site in order to raise the ground level to be approximately 500mm below the surrounding street level which will also form the piling platform. The vaults can then be dug out in short sections without undermining the adjoining roads. Once the section of the vaults has been removed, a trench sheet will be installed outside of the piling line and the ground can be backfilled with compacted fill material, and the next section of vaults removed. In one section of the site on the western side, the vaults extend approximately 1-1.5m beyond the line of the piled wall. Here, it may be possible to infill the rear section of the vaults with concrete, and use this section as a mass-retaining wall to avoid the need for a separate retaining structure.

Within the car park area of the site there are a series of foundation structures from the previous terraced houses on the site, sitting below the tarmac layer. A typical image of this is shown on the image below, taken when MOLA were conducting some intrusive survey work on the site. These mainly brick structures will be removed as part of this early works on site, to ensure that there are no obstructions to temporary piles within the main footprint of the site, and will ultimately be removed in any case as part of the bulk dig to form the triple basement.

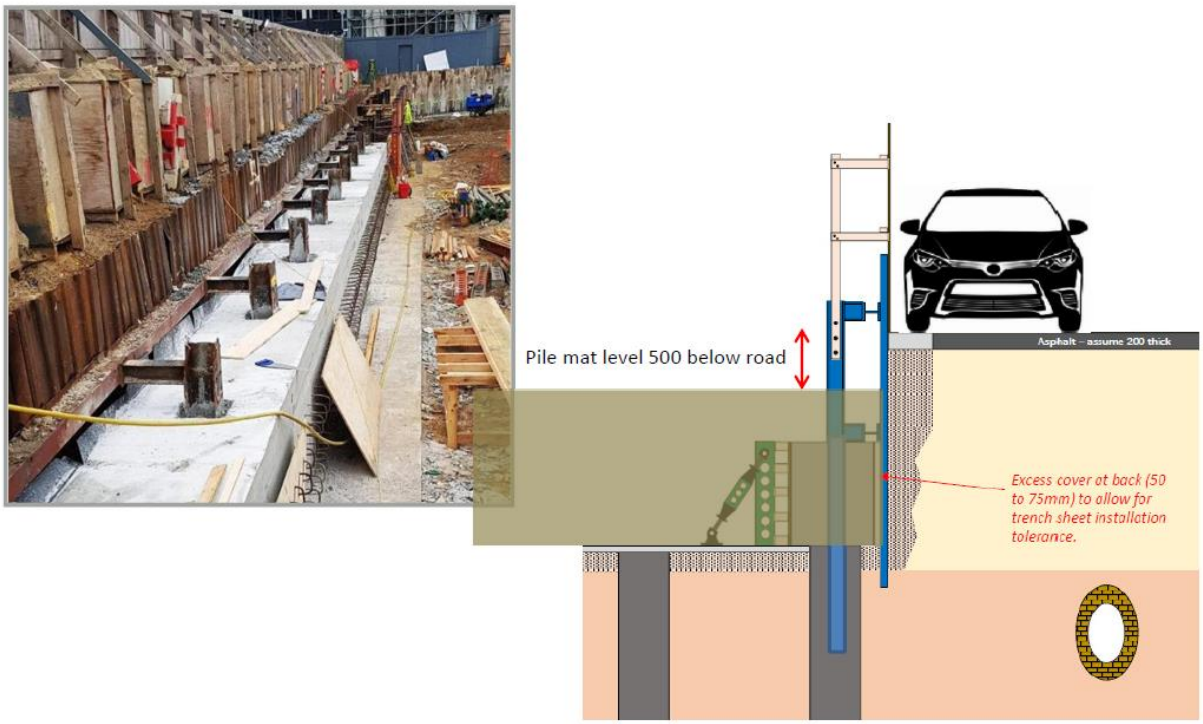
The existing structures to both the pavement vaults and the below ground foundations will be broken out and removed using 360 excavators, with a target to use the minimal amount of pneumatic breaking as possible.

The vault removal sequence will carry on around the perimeter of the site and the guide wall will be progressively installed in preparation for the piling works. Crushed material will be brought to site to form a piling platform, which will be tiered to follow the profile of the road, with three levels, stepping up in 500mm increments from the South of the site, typically creating a piling platform level of around 500mm below the existing roadway.

The soft piles will be installed using a CFA rig, using a site batched bentonite/concrete mix, which will use a large portion of the centre of the site for the batching/mixing zone. Once all of the soft piles are installed the CFA rig will leave along with the site batching equipment and two rotary piling rigs will carry out the hard piles and temporary works piles throughout the site.

The CFA rig will be a Casagrande B125 or similar, and the rotary rigs will be a Bauer BG30 or similar. Each rig will have an excavator and a dumper in attendance, and the rotary rigs will also each have a 50T crawler crane in attendance to lift in the steel reinforcement cages and the larger plunged steel sections into position.

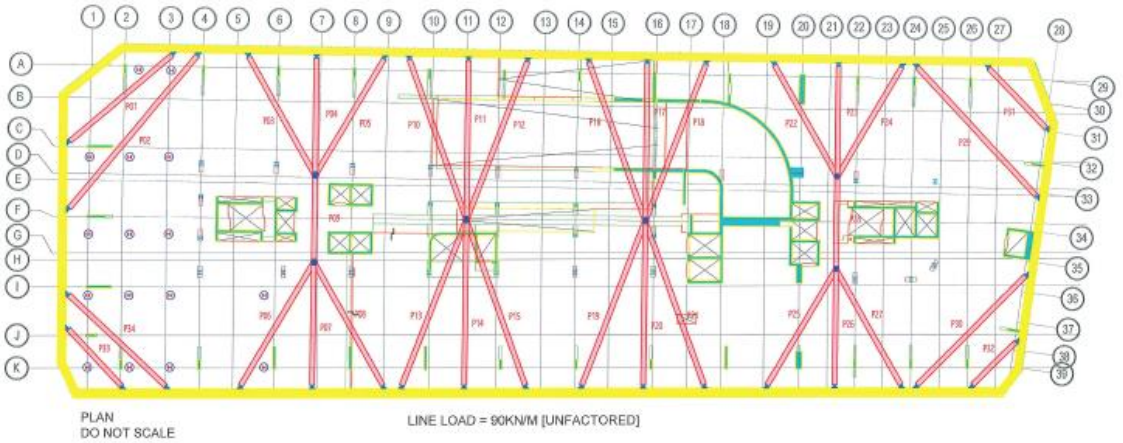
As the capping beam sits within the pavement zone in the permanent case, which requires a suitable zone for services, the capping beam needs to sit around 1.2m below the road level. Plunged steels within the hard piles will be used to support the trench sheeting and hoarding as the trench sheet wall line is then excavated to form the capping beam, as per the below sample images.

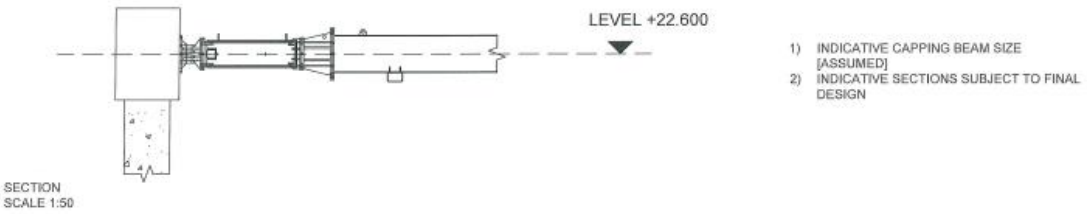


The hoarding line on the north and east sides will need to be temporarily repositioned within the road during piling to get sufficient clearance for the rig. The sequencing for this will have to be particularly carefully considered on the eastern side of the site in front of the service entrance to Waitrose, where access must be maintained at all times. Once the piled wall is installed, then the permanent hoarding can be constructed on the north and east sides, fixed to the king post plunge columns. The temporary hoarding can then be removed.

The capping beam can then be cast on top of the piled wall, and basement excavation can then proceed. As the basement is excavated, propping will be installed to support the piled wall. The first layer of props will be installed at capping beam level, using the capping beam as a continuous waler to take the propping load induced by the props.

The steel props are a combination of 400 SHS and 600 CHS steels spanning the basement excavation supported on steel columns plunged into temporary piles at mid span locations as required. At the end of each prop will be a hydraulic jacking head which can be used to induce the load into the prop and balance the load transfer to the capping beam as required.



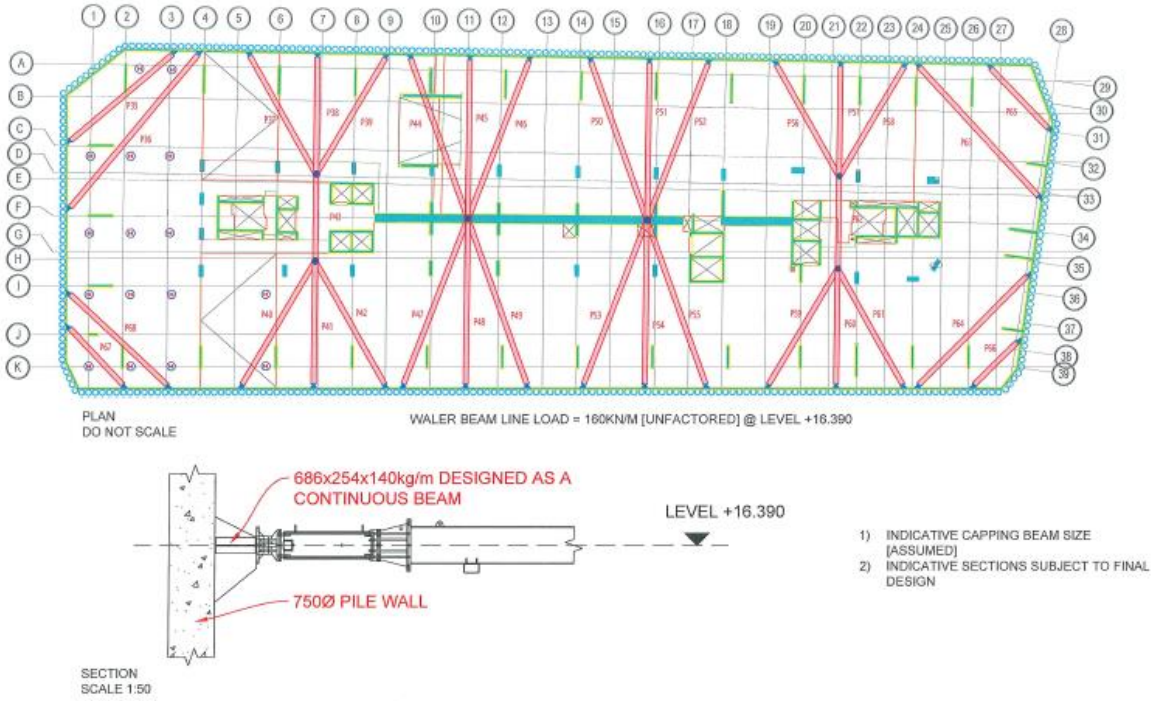


These props are designed to miss the main structural cores and the plunge columns associated with the ground floor gantry so that the temporary works are coordinated around the permanent structures.

Initially spoil can be removed by trucks loaded from the corner of the site at the existing ground level. Once the excavation has progressed to a depth where this is no longer practicable, a gantry bridge will be installed to enable spoil to be removed, using the permanent ground floor slab installed to the Moxon Street end of the project. This will be designed to accommodate a long reach excavator with a grab bucket, which will lift excavated material from the basement and place it into trucks for disposal. The bridge will need to be wide enough for trucks to drive on from one end and off at the other, passing the excavator as they drive. This slab has been designed as a 500mm thick RC slab and can take a load of 20kN/m2. This allows loading of muck to take place on a concrete hardstanding within the site boundary, making the control of mud on the highway easier and preventing lorries standing within the highway.

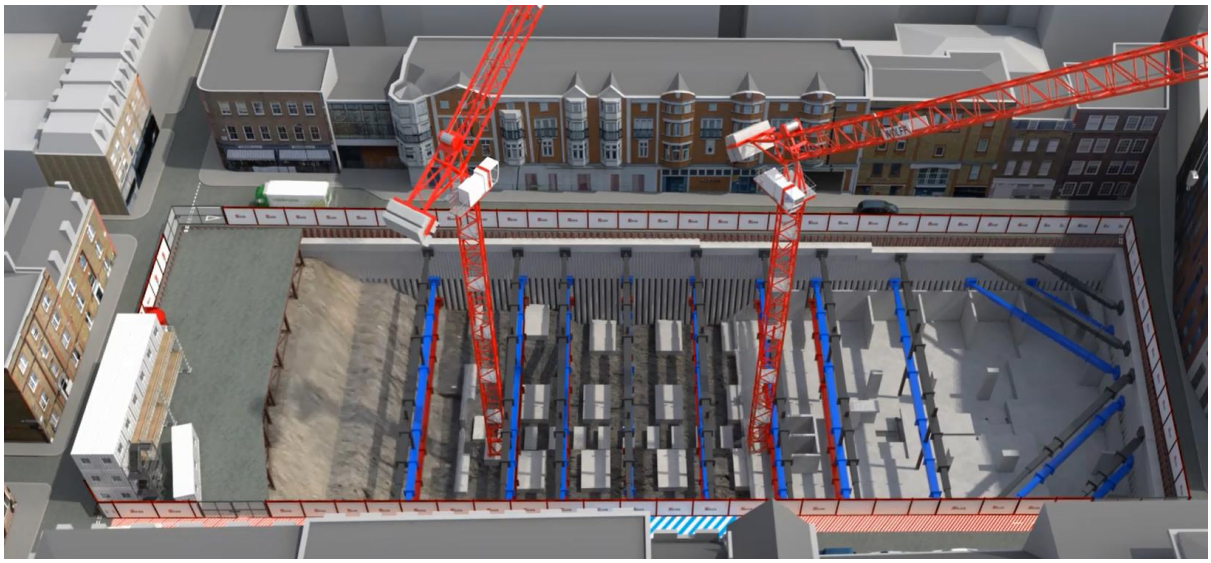
When the excavation reaches the bottom of the sands and gravels, approximately 5m below existing street level, any perched water trapped within the secant wall will need to be pumped out and disposed of. There may be a small amount of continuing water ingress during the basement excavation which will need to be dealt with. A Thames Water discharge licence will be put in place and settlement tanks utilised as necessary.

As the excavation continues a second layer of props will be installed, at around 6.4m below the first layer of props. A temporary waler will be installed against the line of secant piles to transfer the prop force into the piled wall line.



A third layer of props will be installed at the deepest area of excavation to the Southern end of the site, between gridlines 25 and 28, situated at 13.1m AOD, 3.3m lower than the prop above.

Once the excavation reaches the lowest basement level, the construction of the permanent basement structure can commence. This will start with installation of below-slab drainage and construction of the non-piled raft, which is generally 1.2m deep. Initially, focus will on constructing the pile cap/raft for the first tower crane allowing the crane to be erected to be used for the remainder of the structural works. A second tower crane will be installed later in the basement works so that cranes are positioned at each end of the courtyard, offset to avoid clashes with the bridge steelwork.



This will be followed by the construction of the walls and columns from level B2-B1 and then the B1 slab.

The piled wall is a hanging secant wall, so when into the clay layer effectively becomes a contiguous wall, which is then faced in a waterproof concrete liner wall, which along with a top layer of waterproof concrete to the basement slab provides a class 2 basement environment throughout. Where this needs to be increased to a class 3 environment a drained cavity in front of the liner wall will be introduced, behind a blockwork wall.

Whilst the B2-B1 walls and columns are being installed the main lift and stair core jump form temporary works will be installed to allow the main cores to be jump-formed ahead of the rest of the structure. On completion of the jump-formed cores the tower cranes will be moved to the top of these permanent cores, freeing up the courtyard area for both the link bridges and to provide room for hoists.

Once the B1 slab is cast, the lowest level of propping can be removed and construction can continue up through the lower ground floor level up to ground floor. Once the lower ground floor slab has been installed, the final level of the propping at capping beam level can be removed and construction of the ground floor slab can proceed. This slab has an internal ring beam located inside of the capping beam, with the load transferring down through the columns below, noting therefore that the piled wall and the capping beam do not take any significant permanent loading from the superstructure above. The first floor PT transfer slab will then be cast which deals with the change in column lines of the superstructure, with the perimeter loads then transferring down into the internal ground floor ring beam.

The first floor PT structure will typically be formed as a 500mm thick post tensioned slab, with a deeper 600mm thick section to the southern end of the site where the imposed loads are higher. The outer slab edge will be chamfered to allow for a clear zone for ductwork connection to the façade louvre zone.

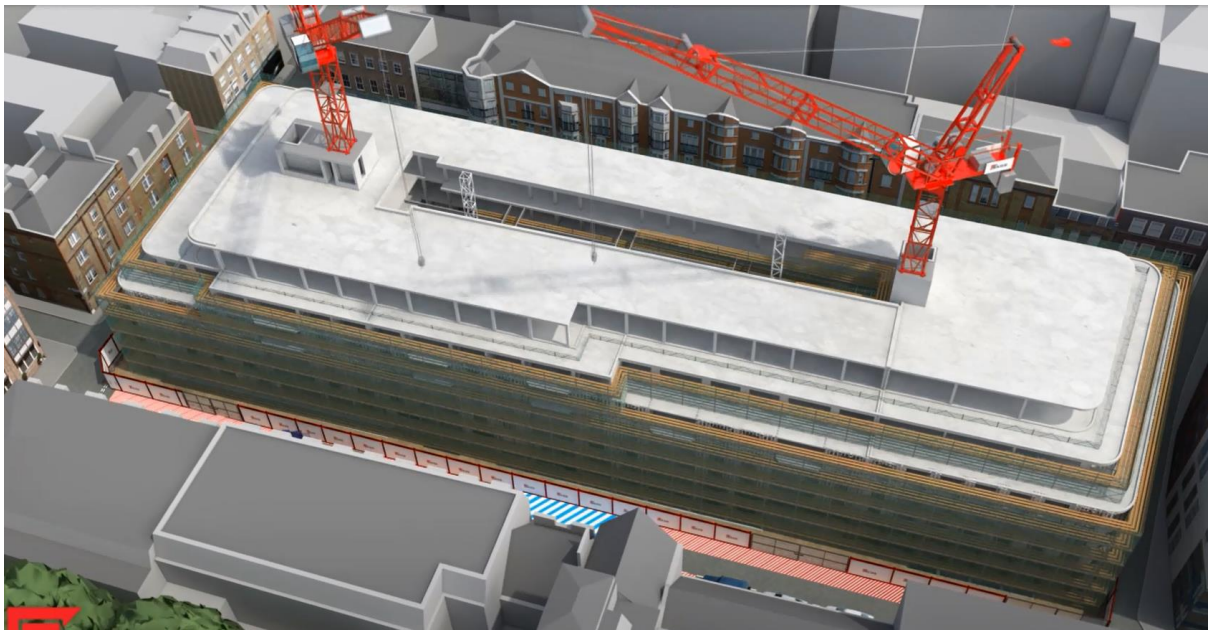
The remaining in-situ concrete superstructure will then be constructed using traditional modular formwork. The slabs are typically 200mm thick with deeper 250mm sections as required.

The apartments are accessed via a series of steel bridges within the central courtyard on each floor. These bridges also provide the main MEP route into the each apartment, and therefore the steel bridge sections will be pre-fabricated with the major mechanical elements installed and the electrical first fix in place. The courtyard bridge sections will be craned into place as the superstructure progresses, and once the concrete structure tops out, finally the courtyard roof steelwork will be installed. The courtyard bridge elements will also have temporary hand rails and a temporary flooring installed to provide safe access during the construction phase.

Once the concrete superstructure reaches level 3, the SFS and cement board works will commence from the inside of the structure, and the scaffold erection will begin from the ground floor, following the same sequence as the concrete works, starting at the South of the building moving North towards Moxon Street. The scaffold will be fully wrapped in protective sheeting (eg. Monaflex) and will include protective fans as required. Progressive loading bays will be installed within the scaffold as required to load out materials for the ceramic façade.

Example of a fully enclosed scaffold with monoflex

Scaffold will also be erected within the courtyard level, generally treated as independent scaffolds inbetween the link bridge installations to provide access to the internal courtyard façade. These scaffolds will also include loading platforms for distribution of internal materials for the apartments, at levels 2 and 3 with an section left down to allow access to the level 1 courtyard. The terrace areas on levels 4 and 5 will provide suitable landing areas for crane distribution to the apartment floors.



Two passenger/goods hoists will be installed within the courtyard area, utilising the structural openings left from the original crane positions prior to their relocation to the cores. This will allow the hoists to reach the lower ground floor and up to level 4, before the slab steps out in the courtyard slab area preventing the hoists from reaching level 5.

Part elevation

The envelope consists of a glazed terracotta façade to levels 1 -3, with part level 4, formed in hand-set ceramic elements supported at slab level and restrained back to an SFS system. This is installed by specialist contractors in a similar way to a modern Portland stone façade. To the top of the ceramic is a feature terracotta frieze which will be installed in a similar fashion, fixing back to a solid steel balustrade behind.

Balcony handrails and balustrade are formed in profiled cast aluminium, which will be supported from the base by first-fix bracketry sitting within the slab zone. This will allow the ceramic cladding to be fixed first, followed by the cast aluminium system.

The cladding to the upper floors and within the courtyard is an anodised aluminium rainscreen in a plank format, installed from terrace level using aluminium towers or from scaffold within the courtyard area.

Roof finishes consist of a green roof with PVs to the upper level and a series of terraces and balconies with a composite decking. All roof areas will be installed with an inverted roof system to provide robust and early waterproofing and weathering.

A Plant area with associated plant screen is located to the South of the project and at the Northern end the staircase projects above the roof level for maintenance access.

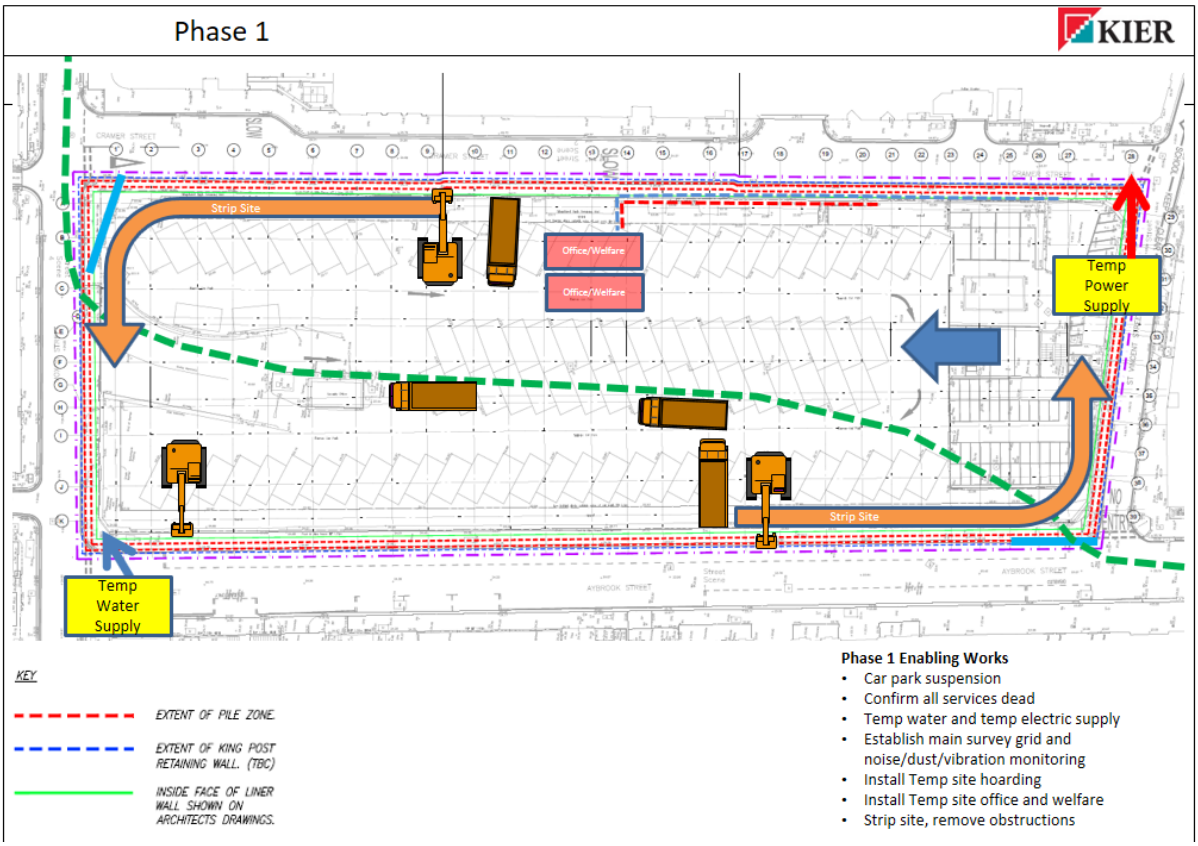
Once the façade works are complete the scaffold strike will start and pavement works including pavement vaults and hard landscaping will be completed before the hoarding is then removed at the end of the project.

5. Site Logistics & Traffic Management

Stage 1 – enabling works

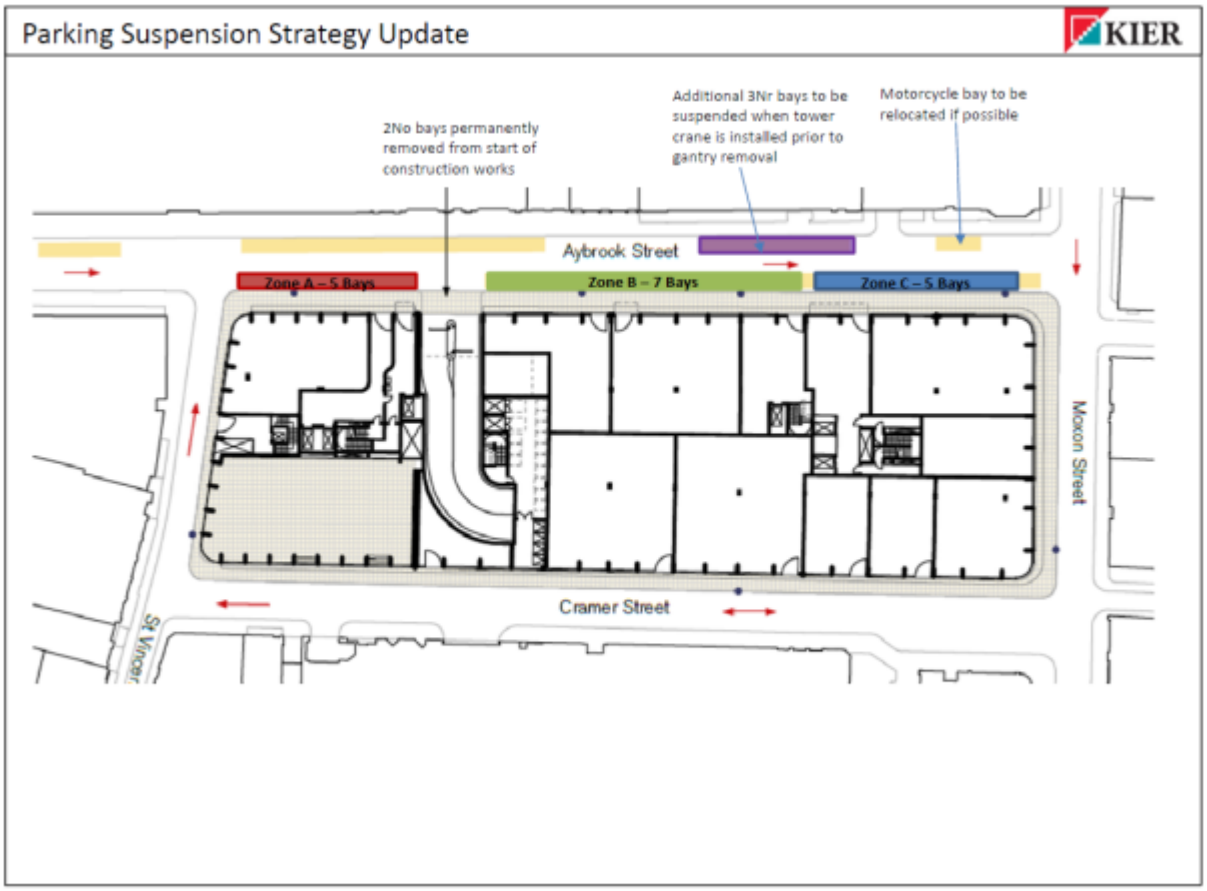
On possession of the site a solid heras type fencing will be erected to the site perimeter, located on the pavement to all four sides of the site. Initially access to the site will be via the existing ramped entrance to the car park on Moxon Street. Once the site establishment is in place and the removal of the tarmac and perimeter vaults is underway, an entrance into the site will be formed to the South West of the site, at the bottom of Aybrook Street. This will be positioned to avoid any issues with the soon to be installed pedestrian crossing on Aybrook Street before the St Vincent Street junction.

As the works to remove the existing pavement vaults progress around the site, the hoarding will be 'blistered' out locally for a safe working zone, and then will be relocated to the long term position on the outside of the capping beam line, roughly equivalent to the outside of the existing double yellow lines around the perimeter of the entire site. Once the enabling works progress to the ramp area, this will be removed and a ramp installed on the corner of Moxon and Cramer Street to provide a construction route through the site, limiting the need for site vehicles to travel the length of Aybrook and Moxon Street.



As the enabling works progress along Aybrook Street, the parking bays along the road will be progressively suspended until all of the bays along the site side of Aybrook Street are suspended, and will remain as such for the duration of the site works.

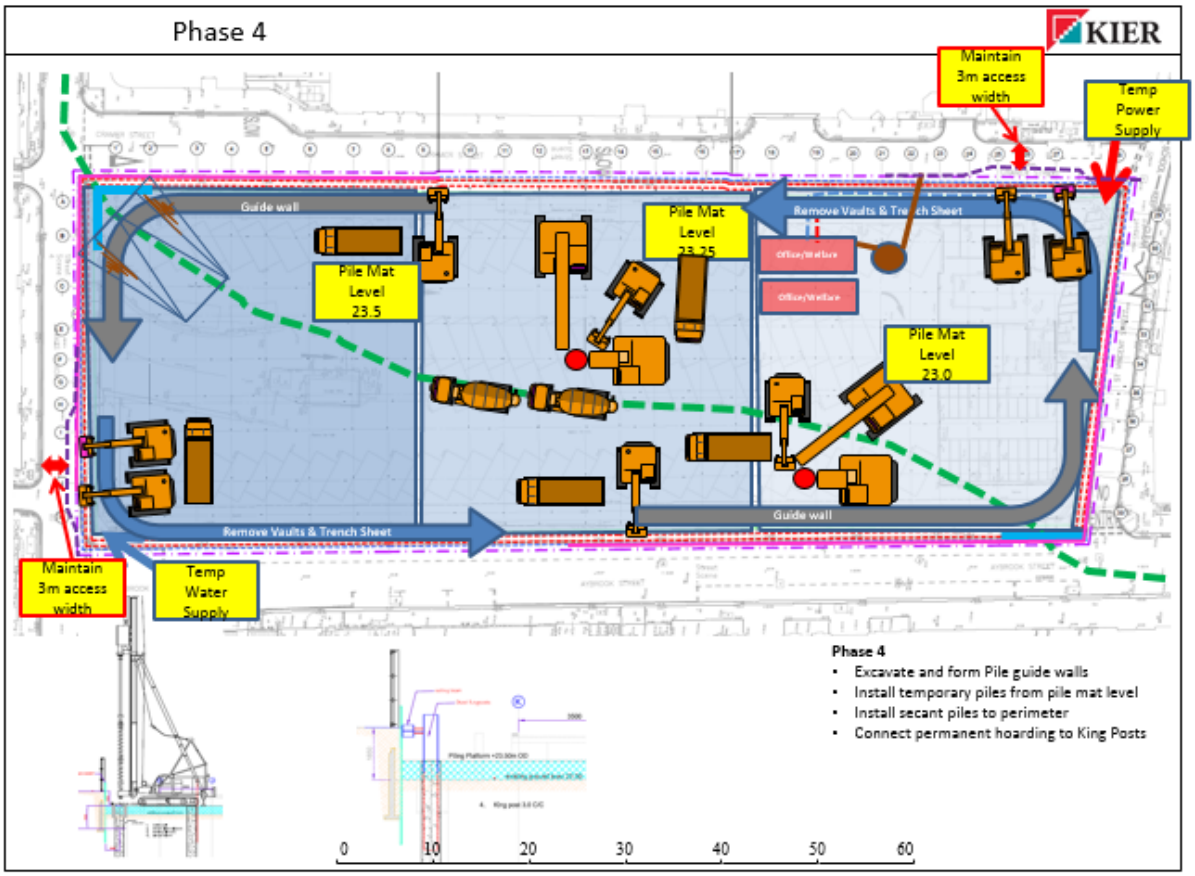
The image below identifies the progressive suspension of parking bays in a group of 3Nr zones, with the permanent removal of parking bays in the zone of the new basement ramp entrance into the site.



Stage 2 – Piling works

During the piling works the site will mainly be accessed via a ramp to the St Vincent's St end of Aybrook Street, and vehicles will cross the site and exit via the corner of Moxon St and Cramer St. On occasion these locations will change slightly to allow for the piling within the ramp areas.

Prior to any piles being installed a guide wall will be erected to ensure that as little deviation occurs during the pile stage. This work will require an excavator, dumper and concrete wagon – when required. Once installed the female soft piles will be constructed using a CFA rig to a depth of 6m, with site batched bentonite mix. Once completed the male piles and temporary piles will be installed using SFA rigs. During these processes it has been assumed that 2no, rigs will be used, with an excavator and dumper truck. Additionally, 2no. crawler cranes will assist the SFA during the installation of the rebar for the male piles.



Stage 3 – Substructure with Gantry

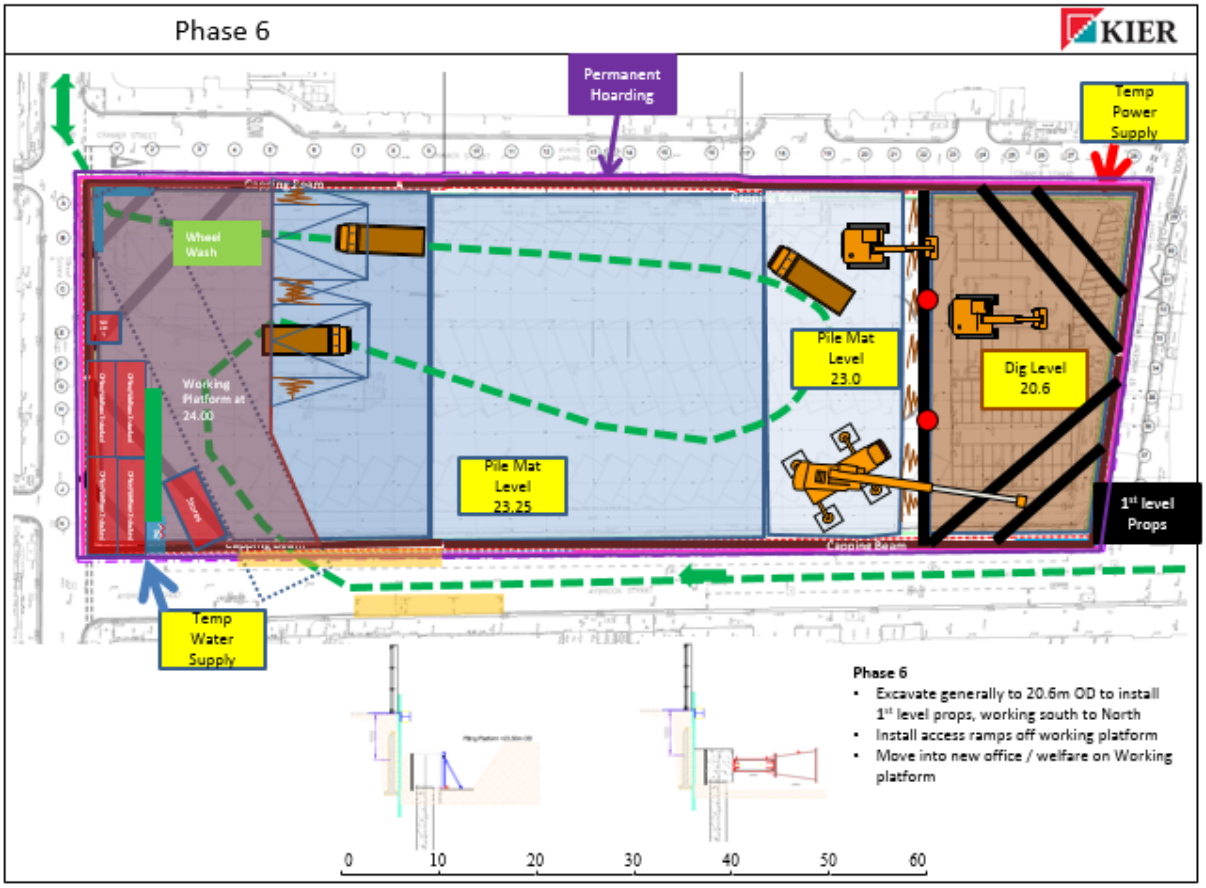
On completion of the piling, the capping beam will be installed. The focus will be on both ends of the project, to the south to drive the start of the basement propping and bulk dig, and to the North of the scheme along Moxon street to allow the installation of the top-down ground floor slab, forming a gantry vehicle loading area and an area for site cabins and welfare. Vehicles will enter the site at the Moxon St end of Aybrook St and exit on the corner of Moxon St and Cramer St.

Stage 4 – Substructure with Gantry and tower cranes

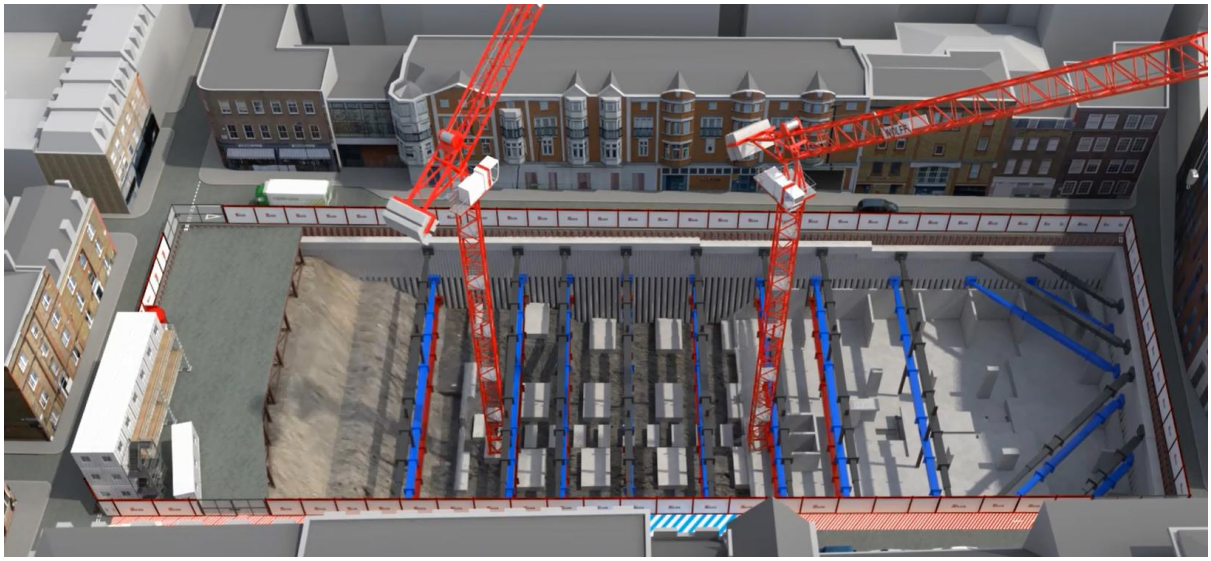
As the basement dig progresses and the bulk dig excavation reaches the lowest basement level, the first tower crane will be installed. For this crane to reach deliveries a pit lane will be formed along Aybrook street, using the suspended parking bay zone and the area above the capping beam, with bays suspended adjacent to the offloading point on the other side of Aybrook Street if needed to maintain a clear carriageway. The gantry across the North of the site will still be in use to allow muckaway loading whilst the basement dig continues.

Additional 3Nr bays to be suspended to allow vehicles to pass the offloading zone

Motorcycle Bay to be relocated if possible to assist construction traffic swept path into Moxon Street



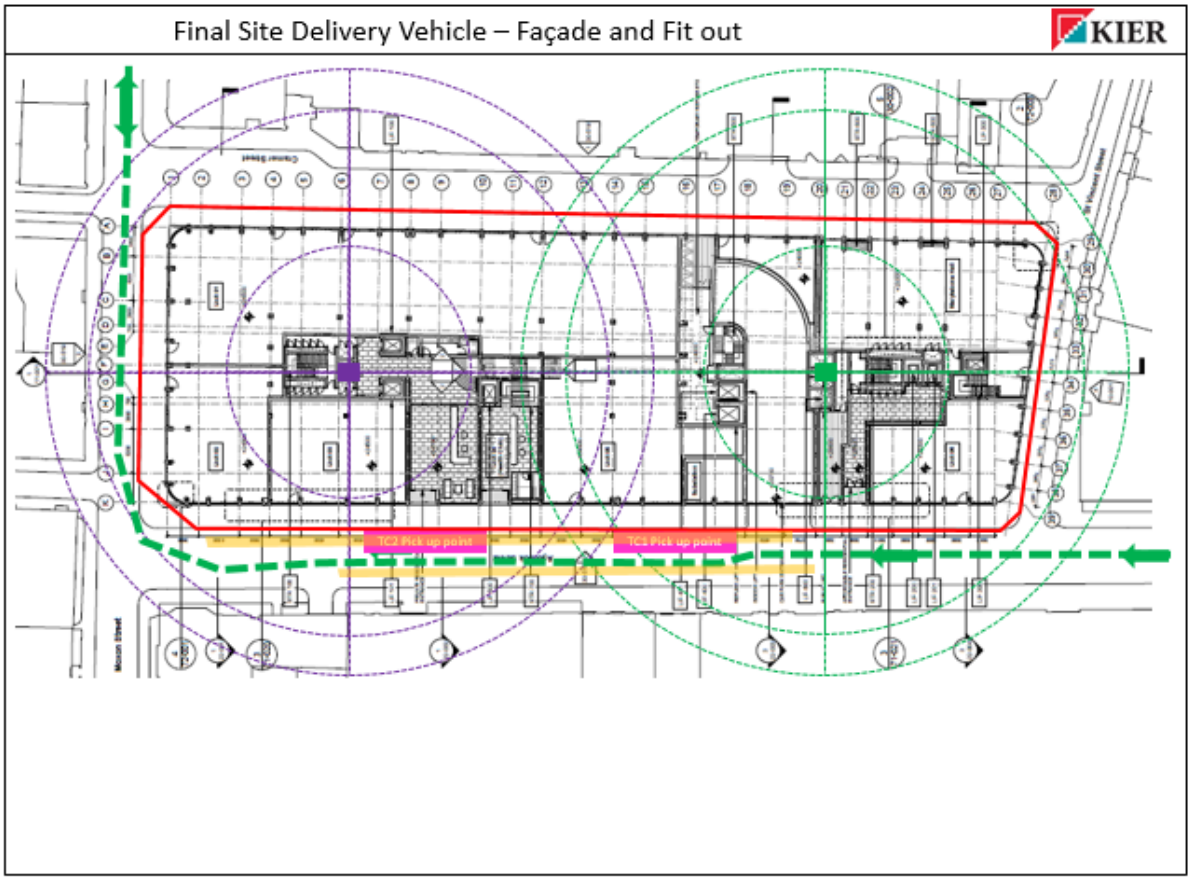
As the bulk dig continues from South to North, the second tower crane will be installed, which will be initially fed from the gantry position, with the first crane still being supplied from the small pit lane along Aybrook Street.



Stage 5 – Superstructure

As the basement works continue and the B2, B1, lower ground and ground floor slabs are installed, the temporary propping will be removed and the 'basement box' is formed. The ground floor slab will be constructed, meeting the earlier installed ground floor gantry area.

Once the ground floor slab is installed the area of roadway above the capping beam can be backfilled and the long term pit lane will be formed along Aybrook Street, utilising the parking bay zone and the final scheme pavement zone. The length of Aybrook street will form a continuous pit lane, which then allows for the superstructure to extend over the gantry area and the welfare set up to move into the below ground level of the building.



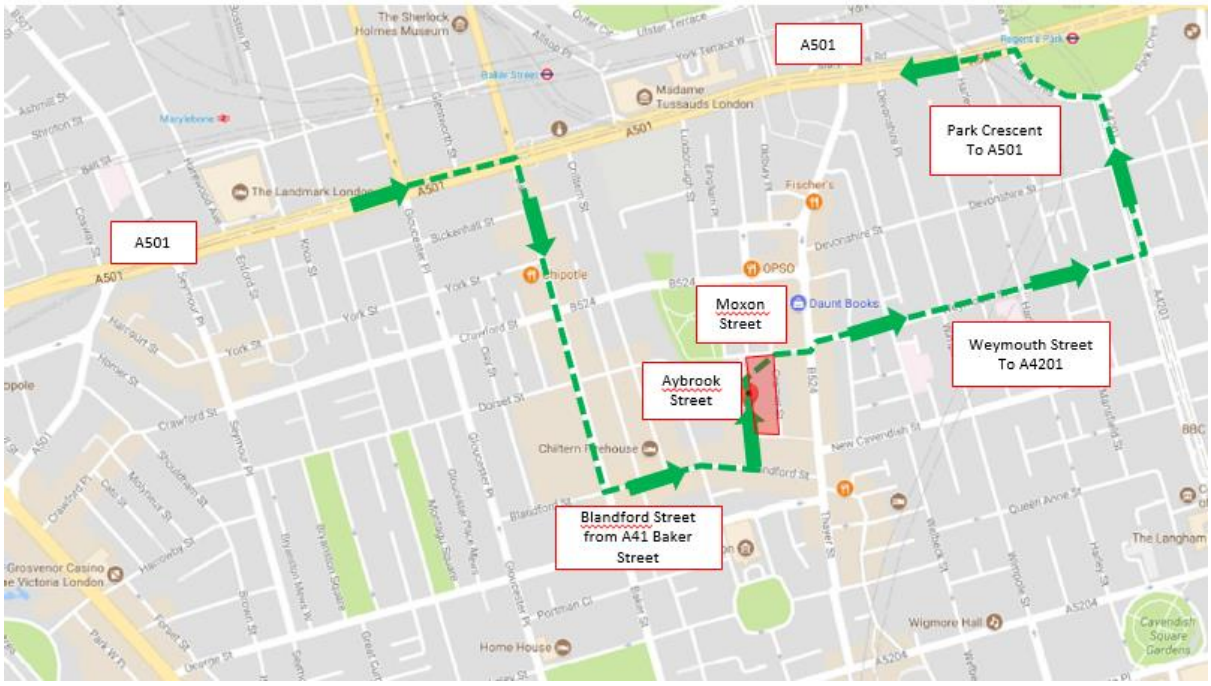
Stage 6 – Envelope and fit out

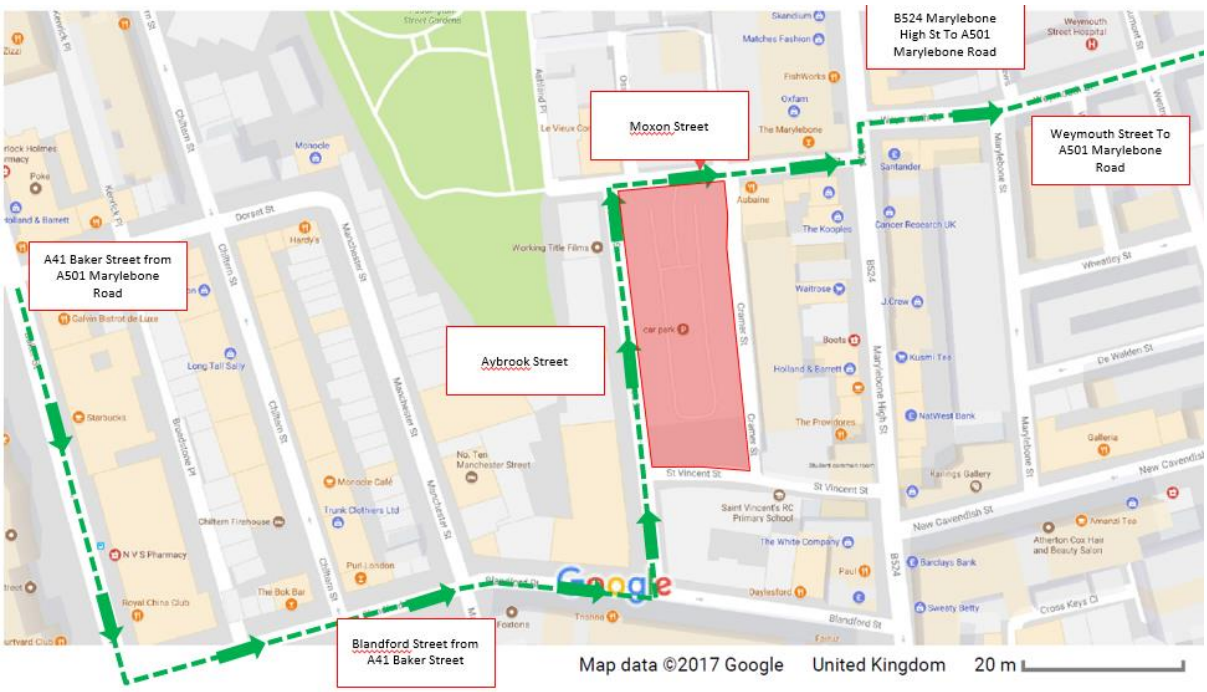
During the envelope and fit out works the construction vehicle pit lane will remain along Aybrook Street, with the potential to use the basement parking areas for site storage. The hoists will be fed from the ground floor retail space, and the tower cranes will pick up from the construction pit lane and distribute to roof levels, into the courtyard and onto the loading bays on the external scaffold.

Large scale traffic management plan

Construction deliveries will typically approach the site from the A501, turning into Baker Street and then along Blandford Street, before turning up into Aybrook Street and to the site.

On leaving the site vehicles will enter Moxon Street and then cross Marylebone High Street onto Weymouth Street, which is a wide one way road suitable for construction vehicles, then turning left towards Park Crescent and back onto the A501.

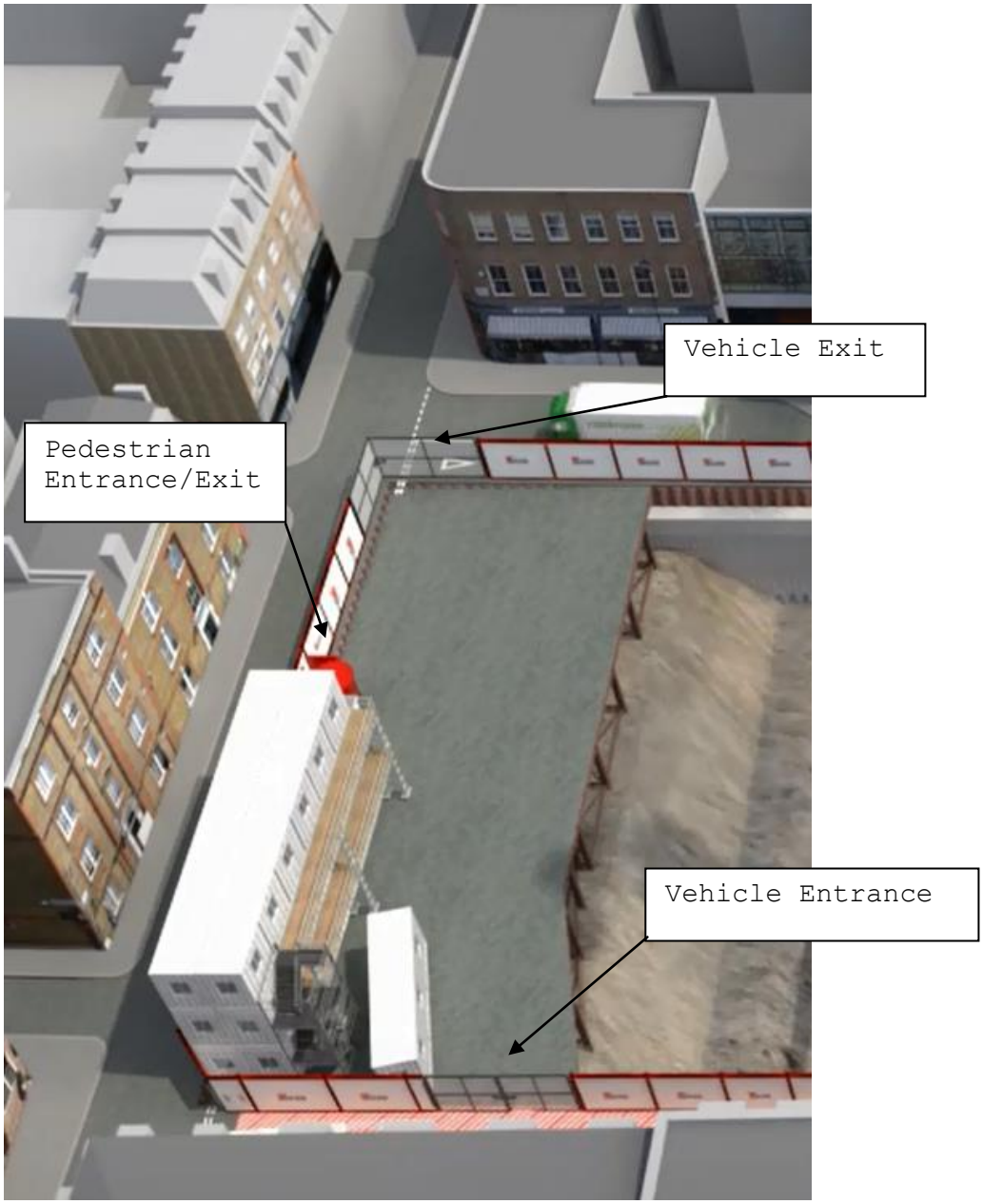




During the piling stage the access route will be from the south west corner and egress at the north east corner for vehicles. Pedestrian access will be from the north of the site with blue routes to site cabins. Throughout the basement construction the location of the site cabins will be on the gantry with the turnstiles on Moxon street. This will ensure that no pedestrian has any need to walk in front of the vehicle entrance point, which will be located to the north of Aybrook

street. The line of hoarding, at this point, will be stepping in to maintain a safe distance from all persons on site and any vehicle movement along Moxon street.

The below image represents access/ egress points once the gantry has been constructed.



Once the gantry has been constructed the vehicles will pass through the north end of site from Aybrook Street to the north west corner and will exit at the north east onto the corner of Moxon and Cramer Street. The size and orientation of the gantry ensures that there will be no need for any over lapping muckaway lorries to be waiting on Aybrook street. The gantry will be able to facilitate 2-3 lorries at the one time.

All access and egress points on site will be manned by a banksman or traffic marshal who will ensure that vehicles and pedestrians do not come into contact. A traffic management plan will

be made available in the site cabins and on a noticeboard before entering site to ensure all operatives are aware of safe areas and walk ways.

The pavements surrounding the site will be removed from use during construction as the basement structure extends out into the pavement zone. The hoarding will be situated outside the existing kerb line, guiding pedestrians to the pavement on the opposite side of the street, restricting them from walking along the site boundary. Additionally, a new pedestrian crossing is being installed on Aybrook Street, which will provide a clear and safe crossing point form St Vincents Street across to the pavement on Aybrook Street (south west of site). During non-delivery periods when the school has dropped off and pick up arrangements, the site gatesmen will assist in managing any non-construction traffic in the vicinity of St Vincents Street

Focus on Moxon Street

The pinch point for construction traffic is the short stretch of Moxon Street between Cramer Street and Marylebone High Street, this is a narrow two-way road and the shops and restaurants along this road have regular deliveries that when unloading would prevent a construction vehicle from passing. In addition to this the Waitrose deliveries access Cramer Street from Marylebone High Street against the flow of construction traffic.

Kier Construction and Concord have consulted with Westminster Council to discuss methods to prevent traffic management issues along this stretch of road and have considered the following;

- Kier banksmen to accompany all construction vehicles through this section of Moxon Street, and manage the vehicles across Marylebone High Street, taking the slight dog leg route onto Weymouth Street before returning to site
- Encourage Waitrose deliveries to take the same route as the construction traffic,(not via Marylebone High Street) noting that the access from Aybrook Street onto Moxon Street will be improved with the diagonal gate position to the site
- Potential use of a TTO to limit vehicles stopping along Moxon Street during construction hours – 8am to 6pm, noting the option to use the non-delivery times for the site during school drop off and pick up times – 8.30-9.00 and 3.00-3.30
- Conversion of the parking bay along Marylebone High Street to a delivery point for the Moxon Street retail units (and potentially a Waitrose pick up point – see Waitrose section)

We would welcome the opportunity to discuss this further with Westminster and to consult with the retail stakeholders based on their recommendations.

Delivery Management System

We will use a Datascope tool to ensure all our deliveries are forward planned and executed with precision. The Datascope tool is a Delivery Management System that has been designed to help with logistical planning and managing deliveries on construction sites.

The purpose of the Delivery Scheduler is to provide a system for web-based booking of deliveries to site and for scheduling crane and hoist requirements of each delivery. In addition, it will have the facility to provide reports to the management team in respect of the delivery schedules and hoist/crane utilisation

Both contractors and subcontractors can use this bespoke system to book allocated time slots for deliveries to site and liaise with Waitrose to book time slots for their deliveries. As well as managing deliveries, the system will provide us with CO2 reports, helping us to monitor our environmental impact.

ANTICIPATED VEHICLE MOVEMENTS

The table below highlights the outline planned deliveries for the project through the main structural phase. Delivery numbers at the base of the table are per week, and can therefore be divided by 5 to give an estimated daily rate.

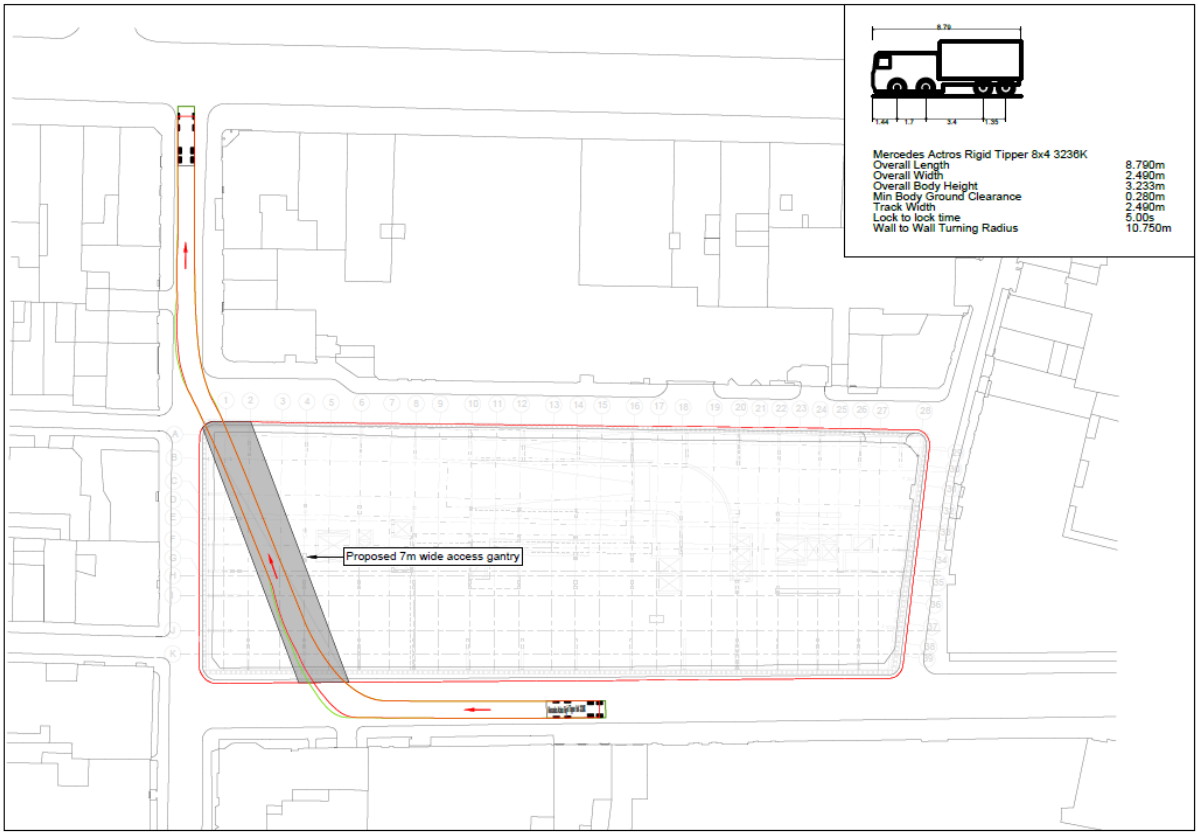
	Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 6	Wk 7	Wk 8	Wk 9	Wk 10	Wk 11	Wk 12	Wk 13	Wk 14	Wk 15	Wk 16	Wk 17	Wk 18	Wk 19	Wk 20	Wk 21	Wk 22	Wk 23	Wk 24	Wk 25	Wk 26	Wk 27	Wk 28	Wk 29	Wk 30
delivery of heavy plant	3	1	1	1	1	1	1	2	3			5	3	1	1	1	1	1	1	1	1	1	3	3	5	5	5	5	3	3
piling matt						80	80	80																						
concrete wagons				1	1	2						40	40	40	40	40	40	40	40	45	45	45	40	40	40	40				20
rebar wagons												2	2	2	2	2	2	2	2	3	3	3	4	4	2	2	2	2	2	
material deliveries		1	1	1	1	1	1	1	1			4	4	4	4	4	4	4	4	4	4	4	4	5	5	5	5	5	6	6
muck away wagons		2	2	2	2	2	2					20	20	20	20	20	20	20	20	120	220	120	135	180	220	220	140	220	220	200
pre-cast columns																														
small deliveries	5	5	5	5	5	5	5	5	5			5	5	5	5	5	5	5	5	5	5	5	12	11	14	14	14	14	14	14
cube collections												2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
skip wagons		1		1		1		1	1														5	5	5	5	5	5	5	5
mobile crane																														
sheet piles			2	2	2	2																								
formwork																														
#VALUE!																														
Total Dno of Deliveries	8	10	11	13	12	94	89	89	10	0	0	78	76	74	74	74	74	74	74	180	280	180	205	250	293	293	173	253	252	250

	Wk 31	Wk 32	Wk 33	Wk 34	Wk 35	Wk 36	Wk 37	Wk 38	Wk 39	Wk 40	Wk 41	Wk 42	Wk 43	Wk 44	Wk 45	Wk 46	Wk 47	Wk 48	Wk 49	Wk 50	Wk 51	Wk 52	Wk 53	Wk 54	Wk 55	Wk 56	Wk 57	Wk 58	Wk 59	Wk 60
delivery of heavy plant	3	3	5	3	3	3	5	3	3	3	5	3	3	3	3	3	5	3	3	3	3	3	3	4	4	4	4	4	3	4
piling matt																														
concrete wagons	20	5		38	55	23	33	37	38	42	38	8	60	75	64	42	48	74	62	62	34	50	62	62	28	55	55	55	24	38
rebar wagons		2	2	3	3	3	3	3	3	3	3	3	3	3	3		3	3	3	3	3	3	3	3	3	3	3	3	3	3
material deliveries	6	6	6	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
muck away wagons	220	130		150	200	220	100			120	120	140	140	170	200	200	100		200	150										
pre-cast columns																														
small deliveries	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
cube collections	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
skip wagons	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
mobile crane																														
sheet piles																														
formwork				2	2	2	2	2	2	2	2	2	2	2						2	2	2								
#VALUE!																														
Total Dno of Deliveries	270	167	34	225	292	280	172	74	75	199	197	185	237	282	299	274	185	109	297	249	71	87	97	98	64	91	91	91	59	74

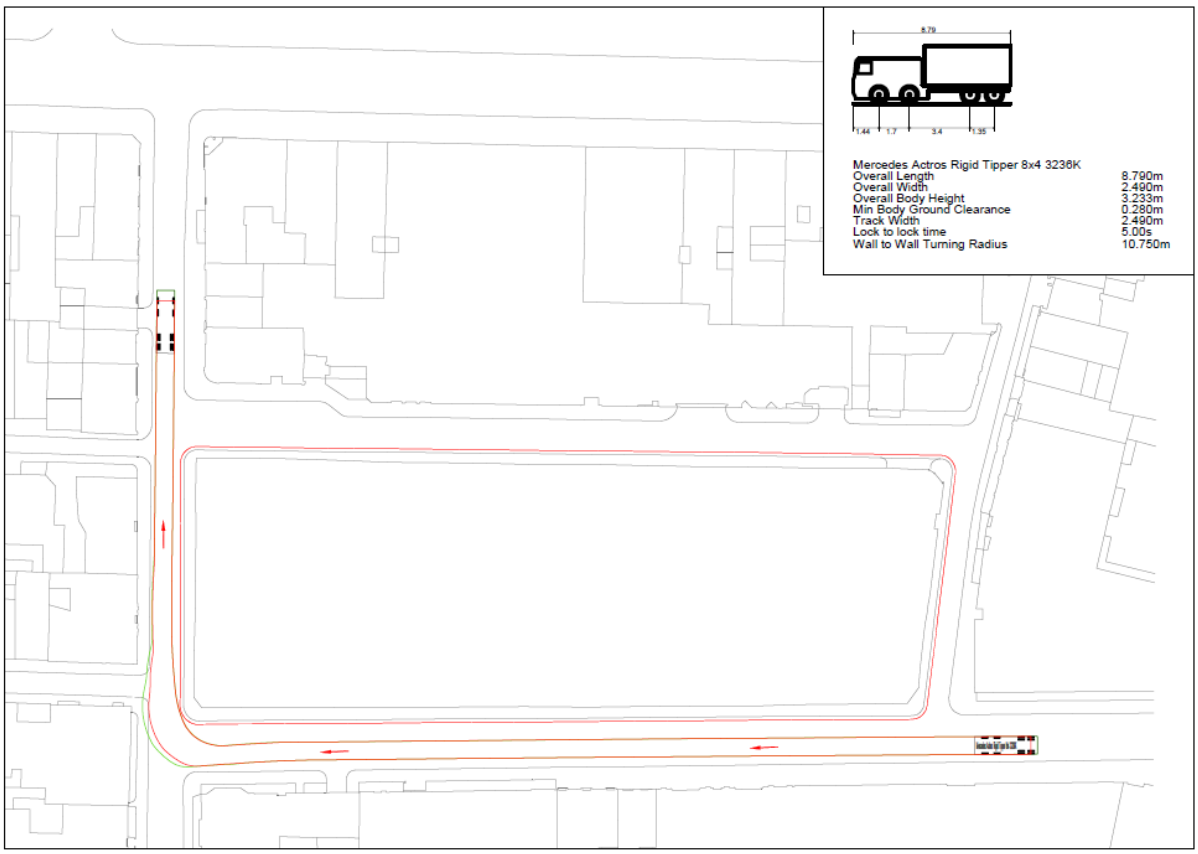
	Wk 61	Wk 62	Wk 63	Wk 64	Wk 65	Wk 66	Wk 67	Wk 68	Wk 69	Wk 70	Wk 71	Wk 72	Wk 73	Wk 74	Wk 75	Wk 76	Wk 77	Wk 78	Wk 79	Wk 80	Wk 81	Wk 82	Wk 83	Wk 84	Wk 85	Wk 86	Wk 87	Wk 88	Wk 89	Wk 90
delivery of heavy plant	4			1	1	1	1																							
piling matt																														
concrete wagons	28			40	32	44	24	64	84	28	44	24	44	52	40	32	34	32	32	32	33	22	22	44	44	44	44	44	44	44
rebar wagons	3			3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2
material deliveries	8			8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	6	6	6	6	6	6
muck away wagons																														
pre-cast columns																								2	2	2	2	2	2	2
small deliveries	14			12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	10	9	9	9	4	4	4	4	4
cube collections	2			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
skip wagons	5			7	7	7	7	7	7	7	8	8	8	8	8	8	8	8	8	8	8	8	9	9	9	9	9	9	9	9
mobile crane																														
sheet piles																														
formwork						2	2	2	2	2								1	1	1	1	1	1	2	2	2	2	2	5	5
#VALUE!																														
Total Dno of Deliveries	64	0	0	73	65	79	59	98	118	62	77	57	77	85	73	65	67	66	66	66	67	53	53	78	76	71	71	71	74	74

	WK 91	WK 92	WK 93	WK 94	WK 95	WK 96
delivery of heavy plant						
piling matt						
concrete wagons	44	44	22			
rebar wagons	2	2				
material deliveries	6	6	2		8	
muck away wagons						
pre-cast columns	2	2				
small deliveries	4	4	4			
cube collections	2	2	2			
skip wagons	9	9	9	9	9	9
mobile crane						
sheet piles						
formwork	5	5	5	5	5	5
#VALUE!						
Total Dno of Deliveries	74	74	44	14	22	14

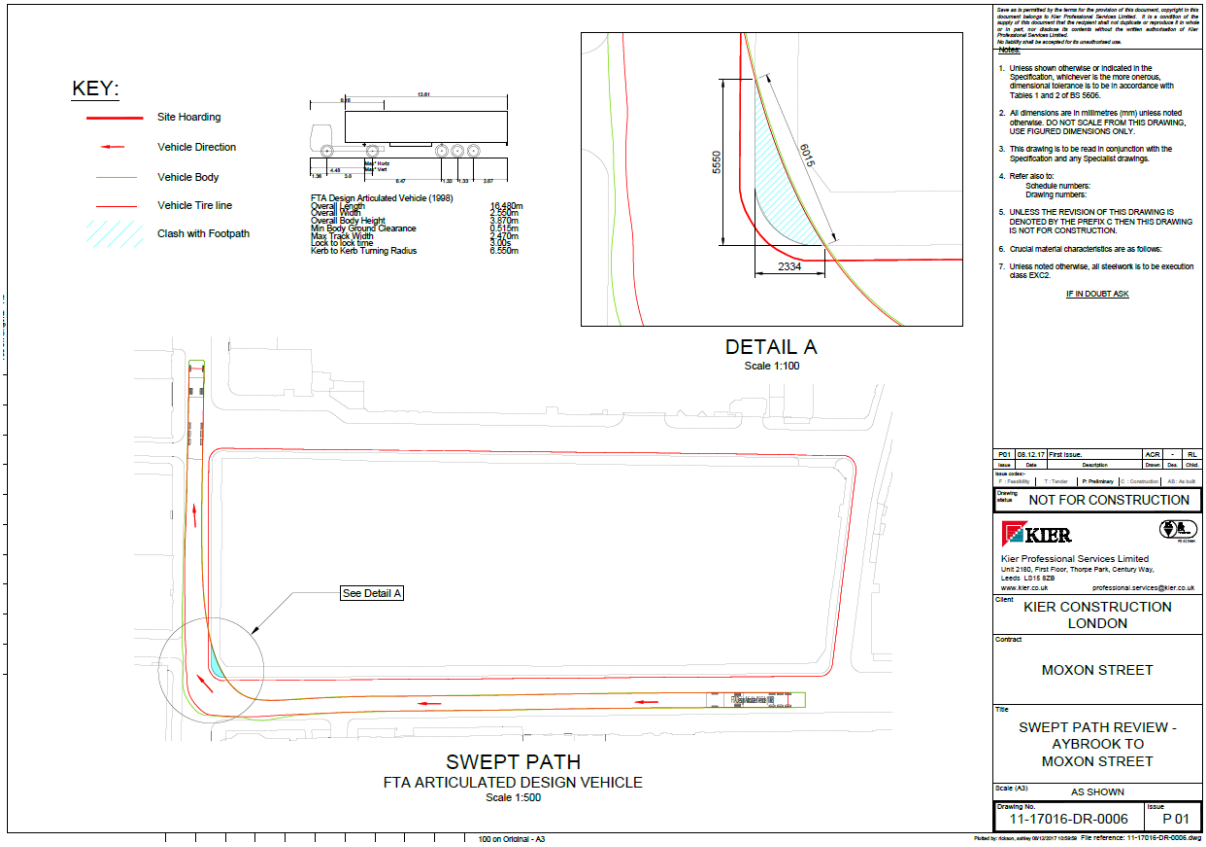
The below swept path analysis shows the different stages of site access and a range of vehicle sizes to identify that the proposed logistics is possible;

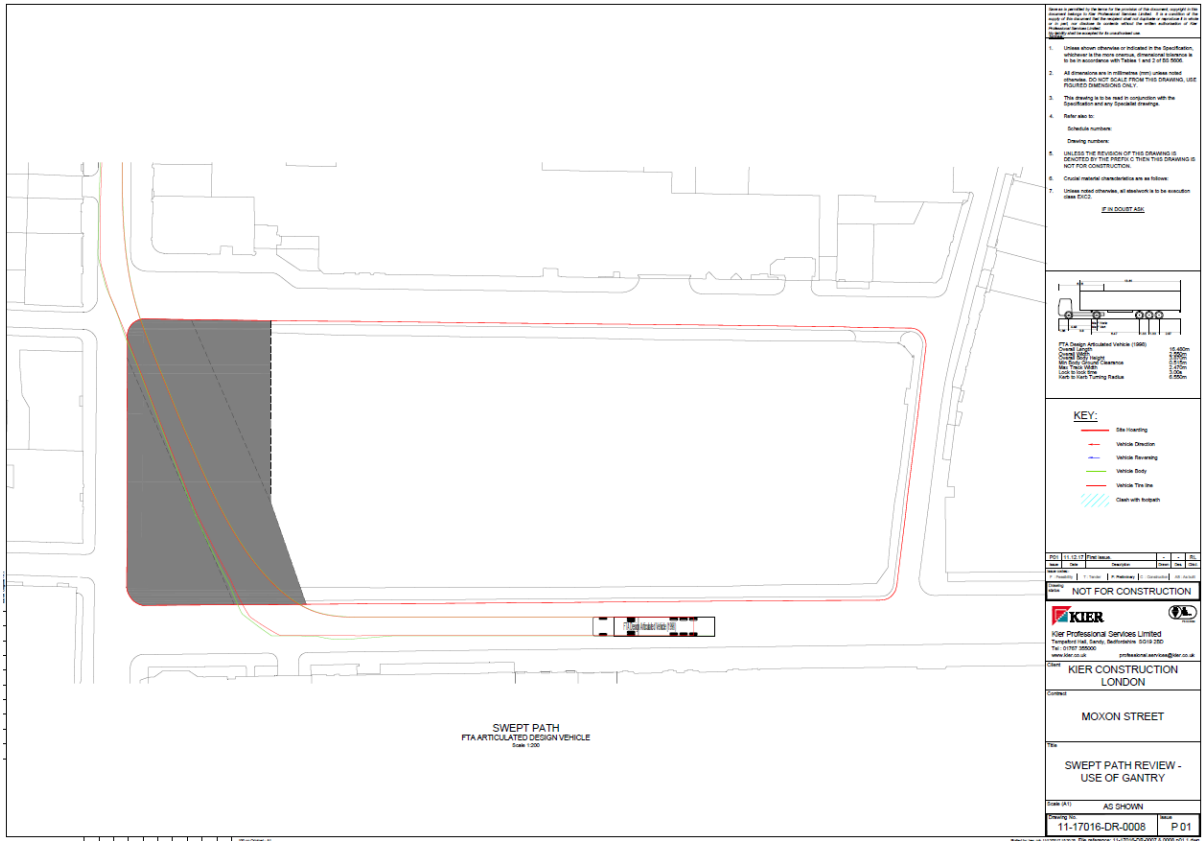


BRIDGE POSITION 1
SITE MUCK AWAY WAGONS (8x4 Tipper)
Scale 1:500



GENERAL ROAD USAGE
RIGID TIPPER 8x4
Scale 1:500





Site Establishment and Security

The site will be secured using a heras panel temporary hoarding initially, which will move locally relative to the pavement vault removal works and the piling activities. Once the piling is complete, permanent 2.4m timber hoarding will be installed. Pedestrian access to the site is controlled via biometric scanners and full height turnstiles, and a series of CCTV cameras will be installed on site with a scaffold alarm system in place for the superstructure works. During the fit out stage of the project there will be on site security out of working hours.

At the start of the project the site cabins will be situated in the middle of site to allow for the piles to be installed to the boundaries. Access will be from the south west corner with blue routes available for pedestrians. All access and egress points on site will be manned by a banksman or traffic marshal who will ensure that vehicles and pedestrians do not come into contact. A traffic management plan will be made available in the site cabins and on a noticeboard before entering site to ensure all operatives are aware of safe areas and walk ways.

Site Floodlighting

Floodlighting will be positioned on the site cabins to light the site establishment and gantry area, and will also be positioned on the tower crane masts. During the initial groundworks and piling phase, mobile floodlighting will be used with telescopic towers during construction hours where required. Where possible during the superstructure and fit out phase smaller light sources will be used to light the site typically 110 volt LED strip lighting. Lighting will be controlled and positioned so as not to create excessive light pollution and will be turned off apart from the minimum of emergency lighting requirements outside of the working day.

Consents and Licences

All consents and licences will be arranged with the City of Westminster, these include but are not limited to parking bay suspensions, hoarding, pavement and scaffold licences, approval of temporary works schemes and traffic management requirements for tower crane erections.

Craneage

Initial lifting activities will be carried out by mobile crane, using crawler cranes in attendance with the piling rigs to install rebar, and a large excavator or crawler crane used for the first levels of basement propping prior to the first tower crane being erected.

The first tower crane will be installed once the lower basement has been excavated, this crane will pick up deliveries from Aybrook Street. The second crane will be installed further north and offset to avoid any clashes. This crane will pick up materials from the gantry once constructed. The cranes are managed through a delivery scheduler, which will aid in avoiding any clashes and site delays. On completion of the cores, the cranes will be moved to the top of them, releasing the courtyard area for the link bridge works.

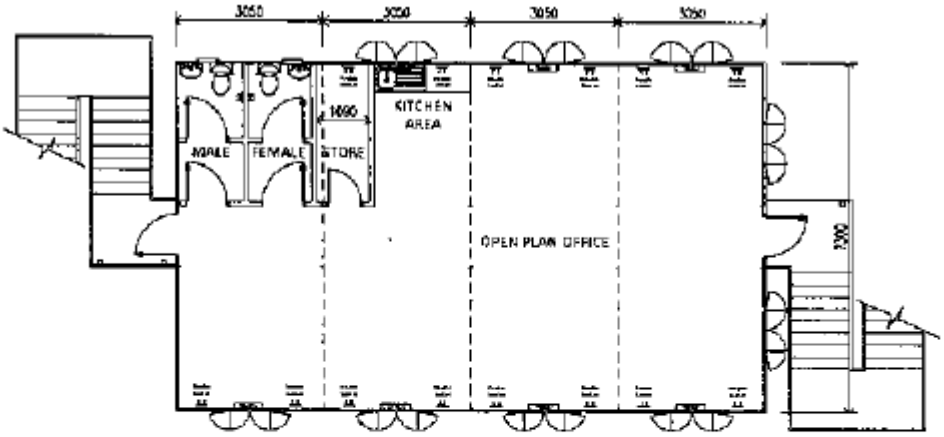
The erection of the cranes has been covered earlier in the document and the documentation detailing the cranes being used on site is covered in the appendix.

The tower cranes will be 'zoned' to ensure that no lifting can take place outside of the designated lifting zones, so that no materials can be lifted over the public spaces outside of the site. The out of service radii of the tower cranes is such that the jibs will not oversail the site perimeter when the cranes are not in use. Anti – crash software will be installed within each tower crane to prevent any lifting clashes between cranes, and a hook camera is installed to each crane hook to record all lifting activities and to assist in safe methods of work allowing the crane driver a better view of the activity.

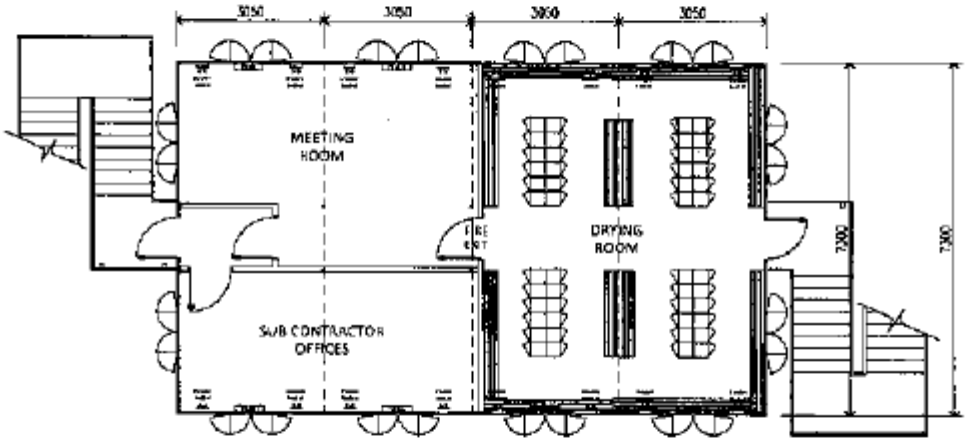
Site Accommodation

The initial site accommodation will be a double stacked arrangement of 6No cabins located centrally in the site, which will allow the piling works to the site perimeter to be carried out without needing to relocate. Once the gantry area to the North of the site is complete, a modular cabin setup will be installed, as per the below image.

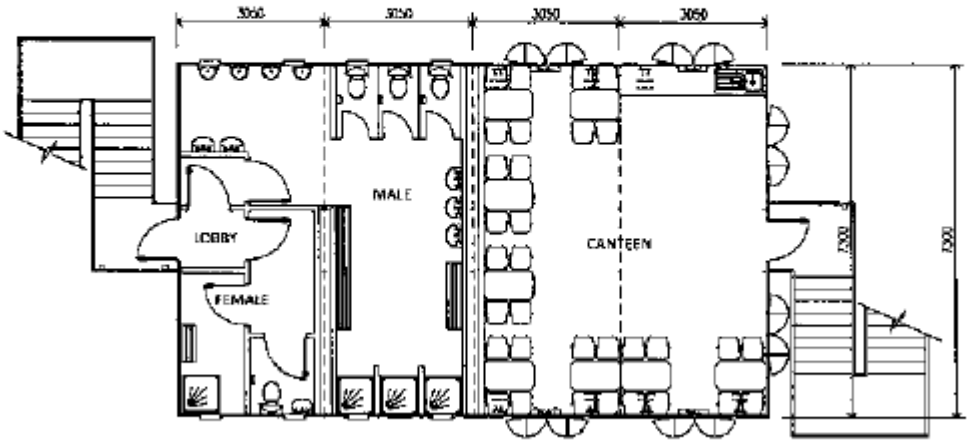
The site cabins will sit on the gantry with a separate storage area. They will be positioned along the north, parallel to Moxon Street, with the entrance on the same side. This will allow for easy access for all vehicles on site, no pedestrians will cross over the vehicle entrance and there will only be one crossing point from the site cabins to site, which will be manned at all times. Site accommodation will have a separate storage area from site, meaning waste is easier managed. Below is an image of the potential layout of these cabins, and the wider establishment requirements such as smoking and vaping areas, waste areas etc will be built around this main cabin set up.



SECOND FLOOR PLAN



FIRST FLOOR PLAN



GROUND FLOOR PLAN

On completion of the main substructure and the start of the superstructure to the south of the project, the site accommodation will move to the lower ground shell and core areas of the basement, where there will be ample space to create suitable facilities for the larger site team for the fit out stage of the project.

Working Hours

The standard working hours on the project will be;

Monday – Friday 8am – 6pm
Saturday – 8am - 1pm
Sunday – no works planned

All loading, unloading and deliveries of materials and plant to the site and removal of waste will be carried out within normal site working hours as highlighted above. A competent banksman will provide assistance to vehicles accessing and leaving the site, thereby ensuring minimal traffic disturbance and pedestrian safety.

6. Sensitive Receptors and Site Constraints

We understand the importance of building working relationships with all our neighbours and addressing their needs and concerns about having a large construction project on their doorstep and the perceived disruptions that this will bring. Kier are committed to engaging local stakeholders throughout the construction phase to minimise disruption and create genuine relationships by collaborating with the neighbouring businesses, schools and residents. We would like to create a place that the community can take pride in, and will add social value in social, economic and environmental areas of this project and leave a lasting legacy.

Dedicated Contact

We will have a dedicated Community Engagement Manager (CEM) in place who will be the main contact point for the local businesses, schools and community stakeholders. This person will be experienced in community engagement and will be available on site for the duration of the project with a dedicated contact number and email. They will be the first point of contact in terms of managing enquiries and complaints. The CEM will maintain a daily log and record all complaints and enquiries and will respond within set target times. The CEM will keep a record of action taken to address the concerns and make this information available when requested. Initial meetings (Meet the Constructors) will be held with stakeholders including businesses, schools and residents of the square, notifying them of the proposed construction programme, access arrangements and also introducing the CEM. These events will be held at a local venue to the site, in tandem with the ongoing Community Liaison Group meetings.

Following these meetings, the CEM will visit and meet with all stakeholder's face to face to introduce themselves and discuss the construction programme and communication needs in more detail and draw up an individual communication plan for key stakeholders such as Waitrose, St Vincent's RC Primary School and other businesses and residents.

There will be an exhibition/display board at a local venue containing any updates on the project and the key activities that will be happening.

24/7 hotline - emergency calls will be directed to the appropriate people and other enquiries can be picked up by the CEM if appropriate. 24/7 hotline will have cascaded responsibility and a 48-hour response rate, however, this will need to be monitored. The CEM and Project Manager will be responsible for keeping all stakeholders informed of the programme of works on site and informing them of any potential disruption in advance e.g. drilling, excessive road traffic, increased noise levels, access etc. This will be done face to face where there is unforeseen disruption and in writing in advance where we have planned activities. We will take all reasonable measures to prevent the interruption of deliveries to all businesses in the surrounding area.

The site will be registered with the Considerate Constructors Scheme to achieve 'Ultra' status. Kier's Sports Part 2 development has already been accredited to CCS 'Ultra', which underpins our confidence in re-employing measures to become a beacon of best practice at this high profile and prestigious Marylebone site.

Table 8-12 Location of Noise Sensitive Receptors

Receptor Group	Addresses in Receptor Group	Representative Measurement Location	Receptor Type
R1	1-8 Moxon House	ST1	Residential
	Osbourne House, Moxon street	ST1	Residential
	10 Moxon street	ST1	Public House/Residential
R2	26-32 Aybrook	ST2	Residential
	33 Aybrook Street	ST2	Commercial
	38 Faraday House Aybrook Street	ST2	Residential
R3	Street Saint Vincent's RC Primary School &	ST3	School
	1-12 Bourne House	ST3	Residential
R4	2 Cramer Street	ST3	Commercial
	97-101 Supermarket , Cramer street	ST3	Commercial

Figure 1: Extract from ES showing environmental plant noise receptor locations

Figure 8-1 Noise Monitoring and Sensitive Receptor Locations

ST VINCENT'S SCHOOL

Kier have allowed for non-delivery periods between 8.30am and 9.00am and 3.00 and 3.30pm on every school day, where the site gates will be locked and the gatemen will assist in managing any road traffic in the proximity of the school. We have assuming that during school holidays these non-delivery times will not apply.

Wherever possible Kier will look to carry out works interfacing or directly impacting the school during holiday periods, and will look to carry out any noisy works along the school boundary during lunch periods or after school hours wherever practical.

Kier will provide the school with turtle barriers to prevent unauthorised traffic from entering St Vincents Street during drop-off and pick-up times, and will position the hoarding along this road to provide the maximum space possible for the school collection and drop off periods.

If the school has specific requirements for traffic management, such as coaches for school trips, or specific needs for noisy works considerations such as assemblies, nativities or exams then we are happy to consider how to best assist and mitigate our impact.

Kier and Concord have had an initial meeting with St Vincent's RC Primary School to understand the school's needs and concerns relative to the construction scheme. The CEM will agree the best methods of communication and ensure all arrangements are notified to the site team, issue contact numbers and arrange frequent meetings to check progress. The table below details the method of engagement with each of the adjacent schools. We will also connect with Capital Dance school and Inter Schools.

School & Contact Details	Proposed Engagement Activities	Responsibility
St Vincent's RC Primary School **Contact** Head Teacher Marina Coleman **Email** head@stvincentsprimary.org.uk **Address** 11 St Vincent Street Marylebone London W1U 4EF **Tel** 0207 641 6110	We have had an initial discussion with Head Teacher Marina Coleman who confirmed the following engagement would be beneficial for the school • A designated contact to discuss access, safety around school times • An Initial meeting with the school to discuss access needs, signage support and safety of children, staff and parents around the site. • Assemblies with children to go through the safety on site and dangers of a building site • Raising awareness of careers in constructing through the project • Sharing the different stages of the project and what the end use will look like – maybe an art project with the school • Any site visits, viewing platforms for students • Any educational and learning activities that can be provided and facilitated through the project for Maths, English, Science, Sustainability, Health & Wellbeing • Any historical information that children can learn about linked to the site e.g. archaeology • Help with hoarding, promoting safety on and around the site • Community project with the school to help refresh classrooms by providing volunteers from site • Any competitions children can take part in	Project Manager & Community Engagement Manager

Sixth Form Site (B) **St Marylebone C.E. School** **Address** 14 Blandford Street London W1U 4AZ Contact Details 0207 563 9335 **Email** info@stmaryleboneschool.com Specialism – Performing Arts, Maths and Computing –Communication and interaction branch of Special Educational Needs (SEN)	CEM to hold Initial meeting with the school, assess level of impact of project in terms of minimising disruption and generating opportunities for learning and education through the project Agree communication methods and frequency Identify opportunities for learning & education through the project. Showcasing Careers in Construction and related sectors with Kier and supply chain. Visit from site team members to talk about the project and related areas such as history of the site, sustainability and other links to curriculum areas Involve school in keeping the community informed such as input to hoardings or with writing an article for the Newsletter Design a Maths in Construction project for the school Support with employability such as CV Workshops, practice interviews and help with personal statements	Project Manager & Community Engagement Manager
Group Inseec French Business School **Address** 32 Aybrook Street Marylebone, London W1U 4AW **Email & Contact** zmouaziz@inseec.com	CEM to hold Initial meeting with the school, assess level of impact of project in terms of access, noise, etc. Agree communication methods and frequency Identify opportunities for learning & education through the project. Showcasing Careers in Construction with Kier and supply chain. Visit from site team members to talk about the project and what we are building Ask the school if they would like to help with writing an article for the newsletter, translation into different languages for the community Design business projects with school to support other curriculum areas Support with employability such as CV workshops, practice interviews and help with personal statements Involve school in any opportunities to input to design of hoardings and community projects	Project Manager & Community Engagement Manager

WAITROSE AND OTHER RETAIL/RESTAURANT FACILITIES

Approximately two-thirds of the way along Cramer Street is the service entrance to the Waitrose store which fronts onto the High Street. This is used for all deliveries to the store, and has large trucks entering and exiting throughout the day. Maintaining this access is a key consideration for the construction sequencing. Just to the south of the Waitrose service entrance is an entrance to a private car park – access to this also needs to be maintained during construction.

Mon - Sat (Except Tuesday)	Tuesday	Sundays
7:00	7:00	9:00
7:30	7:30	10:00
11:30	12:30	14:00
12:30	16:30	
16:30		

Waitrose home deliveries are between 9:00 am and 9:30 pm, however these may be subject to change.

Other deliveries include, but not limited to, are:

Gails	Monday to Sunday between 5:00 am and 6:00 am
Poilane	Monday to Saturday between 5:00 am and 6:00 am
Warburtons	Monday to Sunday between 11:30 pm and 4:00 am
DD Kosher	every day except Sunday before 9:00 am
Iproc	Thursdays before 9:00 am with scattered deliveries throughout the week
Click and Collect	before 9:00 am every day except between exceptions to be confirmed
Newspapers	every day between 4:00 am and 5:00 am
Bifa	general waste everyday between 8:00 am and 5:00 pm
Food waste	every Tuesday between 8:00 am and 5:00 pm
Loomis	every Wednesday before 12:00 noon
Delivery Service	every day between 9:00 am and 9:30 pm
Direct Suppliers	varied times and days

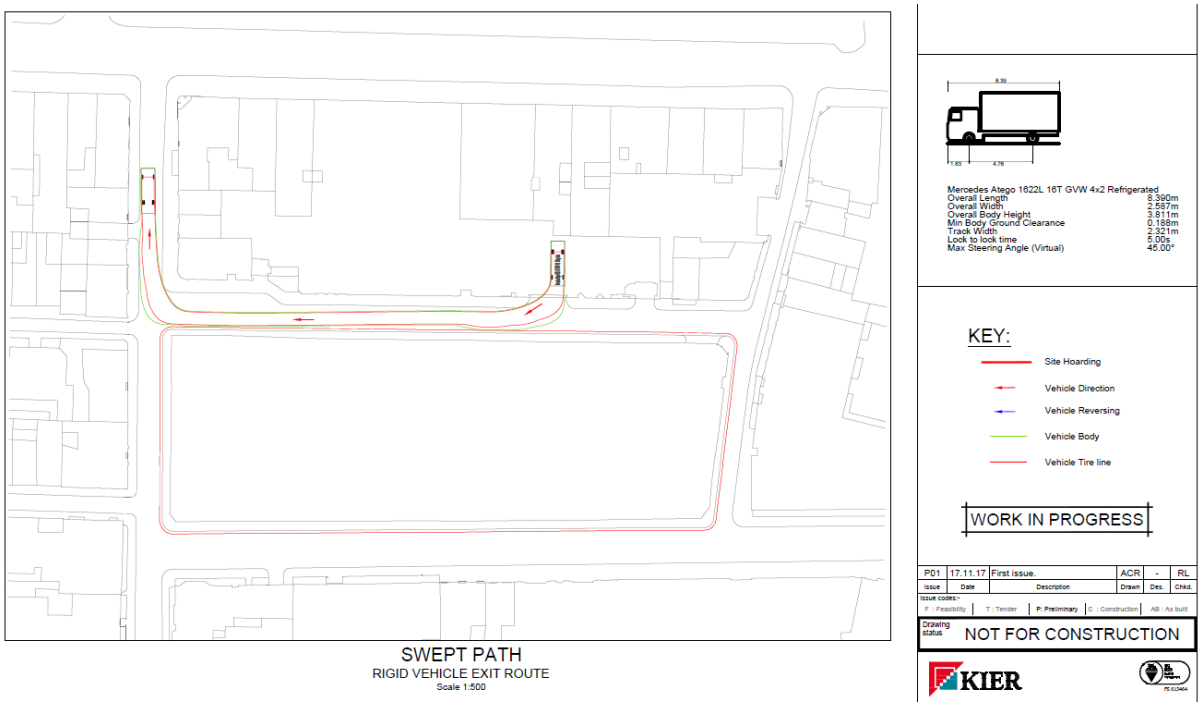
We have had initial meeting with Waitrose to share the construction programme and agree joint ways of minimising disruption. We understand that we are to ensure that access is maintained at all times during the construction process.

Any urgent information about deliveries and access can be communicated by calling the store directly and speaking to either the Branch Manager or Deputy Branch Manager who will then involve the relevant team members required, otherwise communication will be by email. If at any point during the construction works it becomes apparent that access to the delivery point in Cramer Street is limited, the contractor will inform the Employer, G&T and Waitrose in order to provide an alternative arrangement.

Delivery times to Waitrose are as shown. We understand that these times are subject to variation therefore our CEM and Project Manager will work with Waitrose and the local businesses to update these on a regular basis. Typically the first two Waitrose lorries will arrive and leave before the normal construction traffic begins at 8am. The other larger deliveries are Loomis and Biffa which are generally reversed down Cramer St and offloaded/loaded.

Where works such as the piling and pavement vault removals require the hoarding to be locally stepped out in the location of the Waitrose entrance, this will be done in coordination with Waitrose, in between scheduled deliveries if possible, and where not possible, Kier will provide offloading means and labour to assist.

Kier will coordinate a series of vehicle movement trials with Waitrose, marking out the proposed hoarding lines and assessing the ability for lorries to enter and exit the store. Our initial swept path analysis indicates that access should remain possible with our proposed hoarding line, see image below;



SWEPT PATH
RIGID VEHICLE EXIT ROUTE
Scale 1:500

FARMERS MARKET – SUNDAYS

The Market will be temporarily relocated in Aybrook Street (Sunday's Only) for the duration of the works as agreed between The Farmers' Market and Westminster. We have spoken to the Marylebone Farmers' Market and identified some areas to explore:

- Provision of clear signage on the hoardings to signpost visitors to the market as this will be hidden as a result of the works
- Advanced notice of the different phases of construction by arranging to meet a representative
- Communication of the exact hoarding lines in St Vincent Street and Aybrook Street area so that Market Traders are clear of the access route to these areas on a Sunday

We want to establish a relationship with the traders and have a constant dialogue with them from the outset of the project. The CEM and Project Manager will maintain this relationship both face-to-face and by telephone communication. We have held an initial meeting to discuss the above points and agree communication regarding logistics on a regular basis, for example, before and after Sunday markets. The Farmers' Market will ensure that the public highway is clear after use, as it will be the main transportation route to and from site.

We are now working with Westminster and the Farmers Market to coordinate parking bay suspensions and access arrangements along Aybrook Street in preparation for the site gaining vacant possession and the Market stalls moving to the road.

Residential Neighbours

Communication with residential neighbours will be essential. The CEM and Project Manager will be responsible for keeping the local residents informed of activity on site that will have an impact on them. Residents will be invited to the "Meet the Constructors" meetings and the regular Community Liaison Group. A community newsletter will be issued on a monthly basis informing residents of site news and any planned works that may cause disruption, and a website is available for the CLG to see up to date information and notices on the scheme. In addition to this, we will notify residents of increased traffic, noise levels and restricted access by letter and face-to-face visits. We will work with St Marylebone Society and The Marylebone Association to cascade information to the wider community about progress on site and any key milestones. We will also send them the project newsletter to cascade through their networks.

We will ensure that appropriate measures are put in place to protect the public by using the adjacent highways and footways at all times, particularly when works are being carried out outside the boundaries of the site, noting that the pavements immediately around the site perimeter are all removed during the construction phase.

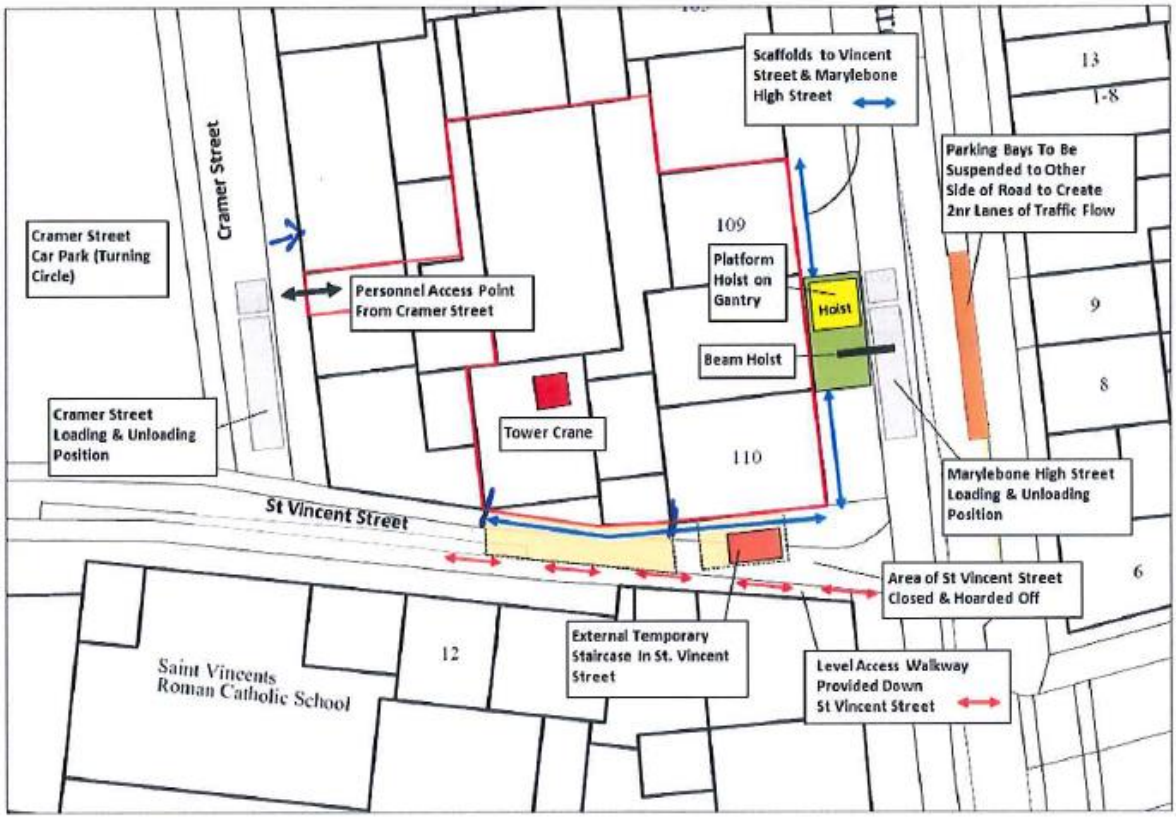
Residents can contact the site team during working hours or use the dedicated 24-hour, 7 days a week contact should they need to report any concerns out of hours.

OTHER CONSTRUCTION PROJECTS

- **Howard de Walden – 110 Marylebone High Street**

This scheme is expected to start in the Summer of 2018 and run for around 13 months. The initial demolition works will be serviced via vehicles reversing down Cramer Street, targeted to take place during the school summer holiday period, following which the main phase works logistics will be established. This will involve closing St Vincent's St to vehicular traffic between Cramer Street and Marylebone High Street, utilising the road for scaffold and staircase zones. The main offloading zone will be on Marylebone High Street, utilising a beam hoist and main hoist on a gantry as per the image below.

Overall Site Layout



On the assumption that the demolition works occur prior to the Moxon St development commencing, the interface between the two projects will be limited, other than the consideration of the compound effect of construction works on the surrounding community, particularly the school.

- **Donnington – Blandford Road**

This scheme is expected to start in March of 2019 and run for around 16 months. The building works will generally be serviced from Blandford Road, with scaffolding required along St Vincent's St for envelope works, which will require coordination with the Howard de Walden project above.

Generally other than sharing a wider scale delivery route along Blandford Road before the Moxon St scheme traffic turns into Aybrook Street, it is not anticipated that the two projects will have any real impact on each other or a compound impact on the area.

OUTLINE NOISE, DUST AND VIBRATION MEASURES

Noise predictions have been undertaken using the methodology described in BS 5228-1: 2009+A1:2014 Code of practice for noise and vibration control on construction and open sites: Part 1: Noise (BSI, 2014)

The noise levels generated by construction site activities and experienced by any nearby sensitive receptors will depend upon a number of variables, the most significant of which are:

- the noise generated by plant or equipment used on-site, or on-site activities generally expressed as sound power levels (LW);
- the periods of operation of the plant on the site, known as its 'on-time';
- the distance between the noise source and the receptor;
- the attenuation provided by ground absorption and any intervening barriers and acoustic barriers.
- reflections of noise from hard vertical faces such as walls or buildings
- environmental factors such as air absorption, refraction by wind and temperature effects.

Predicted noise levels will be presented as period LAeq levels at the nearest sensitive façade through the different phases of the project within the Section 61 application document.

BS 5228-1: 2009+A1:2014 also contains a database of the noise emissions from individual items of equipment, activities and routines to predict noise from construction activities at identified receptors. The prediction method gives guidance on the effects of different types of ground, barrier attenuation and how to assess the impact of fixed and mobile plant.

Noise Monitoring

Combined environmental monitoring stations will be provided. These will cover vibration, noise and air quality and will be suitable for external locations being IP65 protected. All will communicate to a base station which will upload to a web hosted data recording and presentation software package. The Stations require either 110v or 240v electricity supply. It is therefore proposed to locate in order that a 110v site supply can be run to each station. Station location is indicatively shown in the sketch below but is subject to agreement with WCC:

Image showing environmental station locations

PROPOSED TRIGGER LEVELS

The trigger levels are site specific and will be defined through a Section 61 agreement as a method to monitor and control noisy activities. When the noise monitors detect an elevated noise reading (averaged over the appropriate timescale) it will send an automated alert (i.e. email/text alert) to the work site manager and environmental manager so that they can take appropriate action to investigate and mitigate the impact, enabling an instant response to a potential problem.

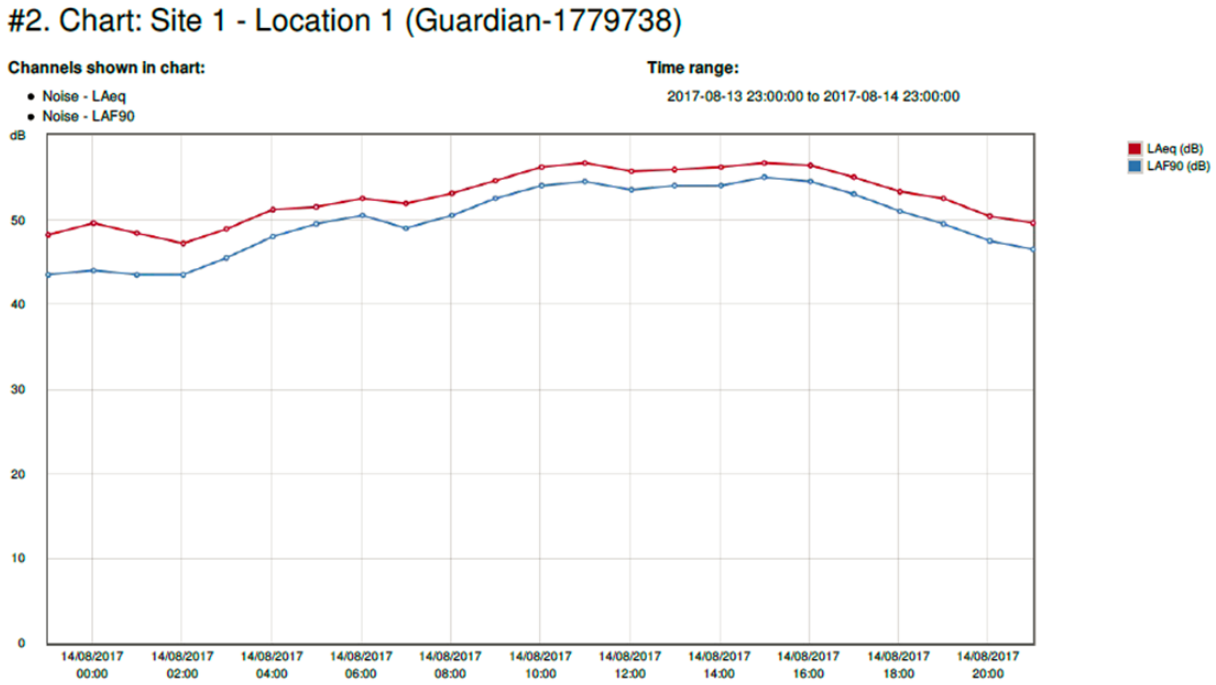


Image showing a typical example of noise data captured by the monitoring station.

Noise trigger levels will be set according to the combined noise levels for each sequence of works. When the results of the noise monitoring indicate that the combined demolition noise levels (predicted and baseline levels) are exceeded by +3 dB (amber level), and +5 dB (red level), an investigation will be initiated into the possible causes.

Status	Description	Action
Green	All monitoring data is within acceptable levels	• No action required • Continuation of demolition activity • Continuation of monitoring
Amber Level	Measured Noise levels Alert - indicating exceedance of this threshold	• Text message alert showing amber level exceedance • Project Manager to undertake visual inspection of site activities and ensure that best practice measures are in place; • Project delivery team will implement additional practicable measures where these are identified including re-sequencing of activities. • Continuation of demolition activities and continue noise monitoring
Red Level	Measured Noise Levels Alert - indicating exceedance of this threshold	• Text message alert showing red level exceedance to be sent to Project Manager and site team, notifying them of the exceedance. EHO to be notified. • Contractor to stop works and review the best practice measures in place and implement additional mitigation measures where practicable; including shortening the daily duration of the noisy activities. • Environmental Advisor will download and analyze the data and look at possible trends, relationships and correlate the Alert with work activities on site. • Project Manager to undertake visual survey to check best practice measures are in place for the work activities • Agree with EHO and implement remediation techniques (prepare method statements if required) • Environmental Manager to complete a pollution incident report log and provide instruction to re-start works only on implementation of practicable mitigation methods identified

Table 9.7 – Exceedance reporting procedure

Record Keeping and Reporting

All data from monitoring activities will be recorded and communicated on an agreed monthly reporting period. Monitoring data will be saved in electronic format and file name referenced in the relevant monitoring reports.

The graphs provided in the monitoring report will show both the trigger and actions levels and measurement data taken during working and non-working hours. Where monitoring values have exceeded trigger and action levels, a brief description of the reason(s) for this will be provided, together with any available mitigation taken to prevent recurrence.

Proposed Steps to Minimise Noise "Best Practicable Means" (BPM)

Best practicable means (BPM) as defined under Section 72 of the Control of Pollution Act 1974, and Section 79 of the Environmental Protection Act 1990, will be used to reduce noise levels at all locations.

Noise from operations and all other sources shall be kept to a minimum at all times. The following general controls shall be applied on site to minimize the effects on residents:

- No shouting;
- No stereos/radios;
- Do not leave plant idling – switch off engines;
- Do not leave plant running over night without express permission;
- Use construction methods that create minimal noise;
- Employing only modern, quiet and well-maintained equipment (all equipment must comply with the EC Directives and UK Regulations set out in BS 52281:2009+A1:2014);
- Keep all plant well maintained and fit with silencers where possible;
- Use silencers, vibration dampers, barriers, screening, and careful location of plant to minimize noise levels at the site boundary;
- Careful planning of the sequence of work in order to minimise the transfer of noise/vibration to neighbours;
- Using fully silenced modern piling rigs selecting pressed in methods or auger over higher impact methodologies
- Careful operation of the piling rig so there is no reversing of the Kelly/auger bars;
- Using electrically powered equipment run from the mains supply;
- Use of screws and drills rather than nails for fixing hoardings etc;
- Use of an alternative to percussive drills / hammer where possible
- Use of plasma cutters where cutting on site is the only alternative
- Taking steps to isolate the deconstruction works from sensitive neighbours, in order to minimise the transfer of vibration and structure borne noise;
- Erection of acoustic screens or enclosures wherever possible;
- Concrete pours and finishing must be planned to avoid overruns past the standard hours, the pour size and concrete workability must be considered. The Contractor must enter into a written protocol with the concrete supplier regarding timing of deliveries to ensure works can be completed within the permitted hours.
- The position, location and acoustic shielding of any concrete pumps must be agreed with the Pollution Control Team.
- Audible alarms must be broadband sound, including reversing alarms and other equipment such as mobile elevated work platforms.
- Pile breaking-out, pile reduction work, and concrete break-out and removal must be carried out, where reasonable and practicable, within a portable acoustic enclosure. The enclosure shall be three-sided with a roof or such other acoustic enclosure.
- As an alternative to breaking in situ, remove larger sections by lifting them out and breaking them down off site.
- Education, monitoring and discipline of the workforce; and
- Limiting the hours of noise generation.

All plant and equipment, including any which may be on hire, will be well maintained, properly silenced and used in accordance with the manufacturers' instructions and BS 5228.

The localised demolition works will use methodologies which maximize use of mini pulverisers to break concrete to reduce as far as practicable the use of percussive breakers. The site will comply with the hours of work agreed with the local authority:

- Monday-Friday 08.00-18.00,
- On Saturday 08.00-13.00 work will be limited to the following activities:

- All loading, unloading and deliveries of materials and plant to the site and removal of waste should, where possible, be carried out within normal site working hours. Any exceptional early morning or evening deliveries must have approval from the Pollution Control Team. A competent banksman should be employed to provide assistance to vehicles accessing and leaving the site, thereby ensuring minimal traffic disturbance and pedestrian safety.
- Scaffolding - this will be subject to close site management of scaffolders to avoid, as far as possible, impact noises, such as from scaffold poles and boards.
- Steel erection - using hand tools only, no power tools
- Oxy/propane cutting steel – short duration activity
- Waste Clearance - loading will be within a designated loading bay within the site at ground level behind the retained facade
- Concreting.

All noisy works will only be undertaken during the prescribed noisy hours of work laid down by Westminster City Council.

Variations to the above hours of work are subject to approval by WCC. When works unexpectedly have to be carried out after 18.00, the site management will telephone and email the EHO as soon as possible and provide the following details:

- ➢ Works to be undertaken
- ➢ Mitigation measures
- ➢ Predicted time of completion

Approval for overruns will only be sought in situations for Health and Safety or safe engineering reasons, the works cannot be practically completed in the normal working day and/or the out of hours activities applied for would have acceptable insignificant noise impacts. The reason for an over run will be fully explained and documented. All overruns will be logged. If timing allows client and Kier will inform and contact neighbours.

Cranes, Lifting of Heavy Equipment, and consequent Road Closures

The erection of fixed cranes, rigging, and use of mobile cranes on the highway and lifting of heavy equipment often has to be undertaken outside normal working hours. All these street-based activities require prior consent from both the Highways Division and the Pollution Control Team. Although it is normally the crane company's responsibility to obtain prior approval for the works, Kier will ensure this has been done. Notifications to the environmental receptors will be made prior to any works falling outside of normal working hours or if the normal pedestrian and vehicle routes outside of the site are impacted. This will be done via newsletters and displays on the hoarding, as well as through social media as appropriate.

Air Quality Mitigation Measures

Works that could potentially affect Air Quality are Piling and substructure works, superstructure works, External Works and Construction Logistics. The effects of these will be mitigated by the application of best practical measures to address the generation of dust at source and prevent the spread of dust by collecting and controlling arisings.

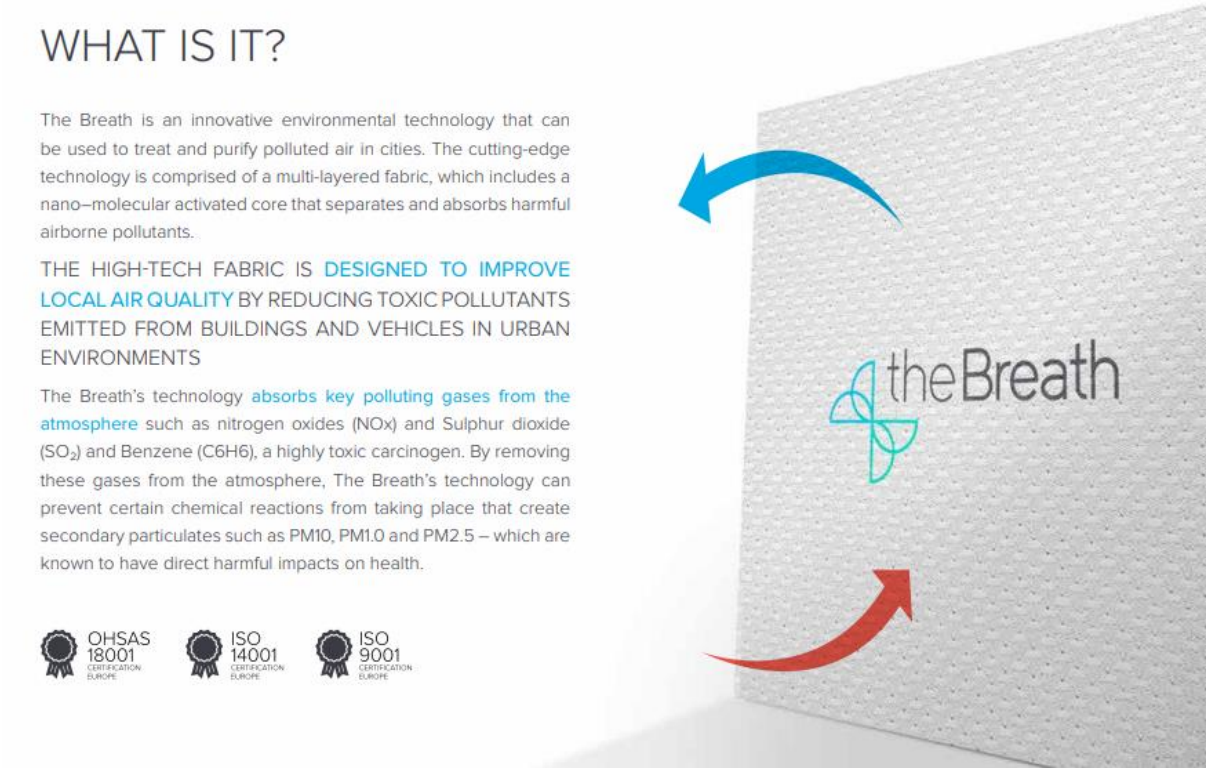
Air Quality

The environmental monitoring stations will provide continuous noise/dust/vibration data, positioned as per the layout shown in the image below. The stations will monitor PM10, PM2.5 and PM1.0 particles with a sensitivity of 1ug/m3 at intervals of 15 minutes. These locations are

deemed to be appropriate (but can be relocated as required if needed) and baseline monitoring will commence at least one month before the main phase works begin. We will ensure the equipment is maintained and calibrated in accordance with the manufacturer's guidelines. However, reliance on the results of continuous monitoring as an indicator that the site is doing all it can to reduce emissions is not sufficient due to the density and wind direction factors in Westminster. As such, a greater emphasis should be placed on control measures such as damping down and site management (e.g. no-idling policy and NRMM compliance)

Westminster has some of the worst air quality in the Country and has been declared an Air Quality Management Area for PM10 (fine particles) and nitrogen dioxide. Recent studies have demonstrated that poor air quality and dust have a significant impact on public health in London, with the equivalent of over 10,000 premature deaths in London in 2010 attributable to poor air quality; this issue is now therefore of the highest priority. Construction and deconstruction sites in Westminster are therefore expected to meet the highest possible standards for control of air pollution and dust. In July 2014, The Greater London Authority (GLA) published the Supplementary Planning Guidance document (SPG): 'The Control of Dust and Emissions During Construction and Demolition'. In order to mitigate negative impacts on air quality in the Westminster, the construction and deconstruction industry is expected to employ, as a minimum, methods detailed in the GLA SPG (and subsequent revisions)

Kier will be considering additional air quality mitigation measures such as living walls along the hoarding lines, and the potential installation of pollutant absorbing fabrics such as the breath, which we are currently using on another Westminster scheme;



An Environmental Aspect and Impact Assessment (SHEMS-FOR-GR-040) for this project has been undertaken in accordance with the Risk and Impact Management Standard (SHEMS-STD-GR-014).

The assessment looks at each site activity against the following environmental aspects:

- Emissions to air
- Emission to land
- Emissions to water
- Waste generation
- Nuisance and environmental health
- Ecology and Biodiversity
- Cultural heritage
- Use of raw materials
- Use of natural resources

Details of the control measure identified in the assessment will communicated to relevant subcontractors. Subcontractors must manage all risks associated with their work activity / package in accordance with this document.

Where the subcontractor identifies additional environmental risk, it is the subcontractor's responsibility to inform the Project Environmental Co-ordinator (PEC) and request that the Environmental Aspect and Impact Assessment is reviewed and amended.

Subcontractors will be undertaking the works on behalf of Kier. The details of the EMP and the aspects & impacts assessment will be shared with them. The subcontractors risk assessments & method statements will be reviewed on form (SHEMS-STD-GR-014) to ensure compliance.

Structural Monitoring

The general requirements for structural monitoring are:

1. Horizontal and vertical movements of the roads/pavements.
2. Horizontal and vertical movements of the capping beam.
3. Inclination of the contiguous/secant piled wall.
4. Horizontal and vertical movements of nearby buildings.

Minimum requirements for monitoring positions are set out within Schedule V.

Kier, in conjunction with a specialist monitoring consultant will design, install and implement the required monitoring in line with the requirements set out by Alan Baxter and by the subcontract propping design. We will review the monitoring results once they are received and to consider the implications of the recorded movements in relation to the ongoing construction activities. Regular reports will be produced summarising their assessment of the movements. These reports, together with the monitoring results, will be provided to the Employer's Agent (E.A.) within 3 working days of each monitoring visit being undertaken. In the event that an alert

level (see below) is exceeded this is to be reported to the E.A. immediately and in advance of the contractors report.

Alert Levels

The monitoring will be reported against a traffic light system of 'Alert levels' that relate to certain required responses. The levels and actions are to be as follows:

Green – The contractor should review the monitoring and site methodology to confirm reliability of data and any additional mitigation measures to reduce further movement.

Amber – If the Amber alert level is exceeded the contractor is to undertake a detailed review of the causes of movement and report on the site activities underway. The review should consider the rate of movement and anticipated forthcoming activities that may cause further movement. The frequency of monitoring is to be increased to a level which is to be agreed with the E.A. The contractor is to identify and implement measures to mitigate further movements and adopt these as part of the methodology. All such measures being proposed by the contractor are to be submitted in a report to the E.A. Following receipt of comments on his proposals the contractor is to implement the agreed mitigating measures. Furthermore, the contractor is also to identify the measures he will put in place to arrest the movements should the red alert level be reached and report these to the E.A.

Red – The contractor shall immediately cease any site works that may be contributing to the ground movements. The measures agreed at the Amber stage in the event of a red alert shall be implemented. He is to immediately undertake a review of the construction activities that have led to the movements and issue a report on how he proposes to progress with the works to mitigate further movements.

Prior to commencement

Kier will submit detailed method statements at least 2 weeks prior to commencing the monitoring. This will include:

☐ Example of the graphical presentation format.
☐ A method statement for undertaking the monitoring.
☐ Location and any protection measures of proposed monitoring stations and targets for the duration of the works.
☐ Method of review.

Monitoring Measurements

Movements will be measured normal to the plane of the structure being monitored and in the plane of the structure and be presented accordingly. All measurements are to be to a minimum accuracy of +/- 2mm.

Erroneous data

If a reading appears to be erroneous, i.e. if the data suggests movements not supported by the surrounding measurements, the contractor is to re-set up the equipment and immediately re-survey the point in question. If the erroneous result is repeated upon being re-surveyed the contractor is to investigate the cause. The contractor's report is to identify any erroneous readings, their cause, and the contractor's proposals for obtaining reliable monitoring records going forward.

Monitoring points/frequency

There are minimum requirements for the number/location of monitoring targets and the frequency of surveying the movements. They are as follows.

Site Stage	Frequency
Start of the works to start of demolition and piling	Fortnightly (minimum of three readings)
Start of demolition and piling to start of excavation	Weekly
During excavation	Twice weekly
During the basement construction to completion of the ground floor slab	Weekly
Thereafter until structural completion	Monthly

Alert Limits

The alert limits are to be set following the ground movement analysis and party wall negotiations.

Report Presentation/Requirements

The following are general requirements for the presentation of information in the movement monitoring reports:

☐ Reports should be presented in graphical format with the requisite Alert Levels clearly displayed. The movement of all monitoring points should be displayed with all previous readings shown for clarity.

☐ A summary should be provided at the beginning of each report indicating where any movements have exceeded alert levels or erroneous results encountered.

☐ Date and time of readings.

☐ Significant construction events that have occurred in the reporting period in the vicinity of the targets.

☐ Clear diagram indicating the direction/notation used in reporting movements.

7. Stakeholder management and communication

PUBLIC CONSULTATION

Please see schedule VII for the Statement of Community Involvement provided by Concord via Four Communications as part of the pre-submission neighbour consultation.

This has included a series of Community Liaison Group (referred to as CLG) meetings held adjacent to the site, which Kier have attended on the most recent two occasions, and will continue to attend throughout the construction phase.

Regular community newsletters will be issued and meetings will be held with any concerned stakeholders as required. Newsletters will be monthly, with additional information provided as necessary for any upcoming significant activities such as crane erections.

The behaviour and language of all those on site will reflect the sensitivity of the site and with consideration and respect for all our site neighbours. Disciplinary action will be taken against anyone found to be behaving inappropriately.

Barriers to reduce any negative visual impact of the site for the site neighbours will be suitably placed along the site perimeter. Screening will be regularly inspected for damage and maintained in good order. Lighting will enable efficient and safe working conditions. Kier will also prevent and or minimize light spillage into neighbouring buildings.

The Project Manager will establish and coordinate the commendations and complaints procedures with the client through the associated development phases. Kier will contribute to community consultations and forums as required by the client.

Any environmental complaints forwarded to the project Environmental Coordinator will be investigated and resolved as soon as possible. Any lessons learnt will be shared with the project team to prevent the same problem happening in future.

For further information relating to stakeholder considerations please see the environmental, traffic management and methodology sections within this document.

We will have a dedicated Community Engagement Manager (CEM) in place who will be the main contact point for the local businesses, schools and community stakeholders. This person will be experienced in community engagement and will be available on site for the duration of the project with a dedicated contact number and email. They will be the first point of contact in terms of managing enquiries and complaints. The CEM will maintain a daily log and record all complaints and enquiries and will respond within set target times. The CEM will keep a record of action taken to address the concerns and make this information available when requested. Initial meetings (Meet the Constructors) will be held with stakeholders including businesses, schools and residents of the square, notifying them of the proposed construction programme, access arrangements and also introducing the CEM. These events will be held at a local venue to the site, in tandem with the ongoing Community Liaison Group meetings.

Following these meetings, the CEM will visit and meet with all stakeholder's face to face to introduce themselves and discuss the construction programme and communication needs in more detail and draw up an individual communication plan for key stakeholders such as Waitrose, St Vincent's RC Primary School and other businesses and residents.

There will be an exhibition/display board at a local venue containing any updates on the project and the key activities that will be happening.

24/7 hotline - emergency calls will be directed to the appropriate people and other enquiries can be picked up by the CEM if appropriate. 24/7 hotline will have cascaded responsibility and a 48-hour response rate, however, this will need to be monitored. The CEM and Project Manager will be responsible for keeping all stakeholders informed of the programme of works on site and informing them of any potential disruption in advance e.g. drilling, excessive road traffic, increased noise levels, access etc. This will be done face to face where there is unforeseen disruption and in writing in advance where we have planned activities. We will take all reasonable measures to prevent the interruption of deliveries to all businesses in the surrounding area.

The site will be registered with the Considerate Constructors Scheme to achieve 'Ultra' status. Kier's Sports Part 2 development has already been accredited to CCS 'Ultra', which underpins our confidence in re-employing measures to become a beacon of best practice at this high profile and prestigious Marylebone site.

8. Specific Project Environmental Requirements

Unexploded Ordinance (UXO)

Due to the level of bombing in London throughout the wars, there is always a background risk from UXO. The UXO desktop study identifies a requirement for instrusive surveys which will be carried out once the site has vacant possession prior to the main works starting on site. Any outcomes of this intrusive survey will be considered and as a minimum an incident/emergency plan will be put in place should a suspect item be encountered.

External (client' / enforcing authority) requirements

- We will comply fully with Westminster Code of Construction practice as referred in the section 106 agreement

Watercourses & wells

- Protection required, existing road gullies, use of witches hat filter systems
- Concrete washouts will generally be carried out off site, however provisions will be made to use a proprietary skip for emergencies and for minor hose down activities

Waste (significant waste streams that will be generated) - refer to the SMARTWaste site waste management plan

- Hard core rubbles are to be segregated and removed as waste
- Waste exemption(s) required, i.e. U1
- Note that the site will register this project with SMARTwaste and use this for waste management
- Waste segregation will be off site due to lack of available space
- Use of prefabricated materials will be reviewed during the main build element. Precast stairs will be used.
- Litter will not be tolerated on site. There will be ongoing management regimes to ensure litter is not dropped and any litter will be collected in a timely manner
- Kier waste streams produced on site
    - Demolition waste
    - Concrete Rubble
    - Excavated substrate
    - Concrete
    - Site Welfare

- Timber eg shuttering
- Packaging and cardboard
- Plasterboard (segregated on site)
- Blockwork

- Water Use effective management
  - Uses
    - Dust suppression
    - Welfare
    - Wet Trades
    - Groundworks
    - Cleaning
    - Services testing & commissioning
  - Management of water use
    - Evaluate potential challenges and risks minimising water on site
    - Identify control and management methods
    - Adopt an emergency response plan, leaks and spills
    - Monitor consumption

We will ensure where reasonable and practicable to collect and reuse rainwater and greywater for non-potable water requirements. A substantial temporary rainwater scheme will be deployed during the construction period.

Concrete washout will be carried out at the suppliers batching plant

Percussion taps fitted to all fittings within welfare areas

All water discharge will be done legally and responsibly through discharge consents to ensure no flooding, pollution or inconvenience to others.

Contaminated ground, issues with groundwater & dewatering

- **Radon**
  - The site is located in an area where less than 1% of properties are above the Action Level.

    Therefore, no special radon protection measures will be required for new developments.

- **Contamination**
    - Based on the findings of the desk study and the anticipated ground conditions, a generally negligible to medium risk is considered for the identified receptors based on the potential for general Made Ground contamination, including the potential for asbestos fibres or Asbestos Containing Materials (ACMs) within the soil. Ground gas is suspected to pose a low to medium risk on site.
    - WAC testing carried out classifies the soils as non-hazardous and potentially inert at lower levels into the clay. Landfill sites will determine the exact classification as part of the muckaway agreements

- **Archaeology**
    - Listed buildings consent has been granted. The extent of excavation below the level of the existing basement slab will be limited and the site does not fall within an area of special archaeology priority

Materials & design

- Materials with recycled content to be reviewed with the Breeam assessor
- BREEAM, 2014 Excellent
- Use of BRE green guide to specification & a web-based resource called Greenspec
- All timber brought onto site will be sourced responsibly Use of FSC, PEFC
- Local supply chain (reducing nuisance, carbon emissions & simultaneously bringing socio-economic benefits to the immediate and surrounding area)

Sensitive neighbours (please refer to receptor section above)

- Surrounding businesses – offices, shops, residential accommodation around the island site
- Party Wall awards in place
- Regular CLG (Community Liaison Group) meetings and newsletters will be carried out throughout the project

Ecology & biodiversity

- Protected species, i.e. Badgers, bats, birds, newts – Awareness of protected species will be provided to all operatives as part of the induction process therefore anything discovered should be notified to the site environmental supervisor.
- Tree protection & tree protection orders are not required as there are no trees on or in the vicinity of the site
- A Japanese Knotweed survey has been carried out and a small area of JKW has been identified next to the existing ramp down into the car park. This will be treated and the surrounding soil removed as per the specialist recommendations at the start of the project. In the event of any unexpected discoveries of protected or invasive species that could be impacted by Kier activities, works must cease and the discovery must be reported to the relevant body.

- Environmental Manager/ SHE manager. Specialist advice from a suitably qualified ecologist may be required.

Pest Control

- The site inclusive of the welfare area will be kept clean and tidy at all times, avoiding any accumulation of waste which may encourage vermin. A checksheet system will be in place to confirm regular inspections.
- Canteen waste will be segregated and will be within a covered bin/skip
- If necessary bait boxes and traps etc will be installed and managed by a specialist contractor

Lighting

- Light spillage from the site temporary lights will be controlled via positioning and by the use of timeclocks and daylight sensors as appropriate so that out of hours light pollution is kept to a minimum
- Hoarding will be lit to WCC minimum standards and any loss of streetlights replaced with temporary equivalent streetlights in agreement with WCC
- Floodlights on the tower cranes will be positioned to light the site only and can be repositioned if required
- Lighting concerns will be kept on the CLG agenda during the construction phase and actioned as necessary by Kier.

9. GENERAL PROJECT ENVIRONMENTAL REQUIREMENTS

9.1 Waste Management

All waste will be managed in accordance with the Waste Management Standard (SHEMS-STD-GR-065) and where relevant, the Earthworks and Contaminated Land Procedure (SHEMS-STD-GR-061).

The Moxon Street project team will manage waste through the development and implementation of a bespoke version of the Building Research Establishment (BRE) SMARTWaste Plan. The project team will use this plan to identify waste streams, forecast waste volumes and identify suitable methods to eliminate, or where this is not practicable, reduce waste generated by the project.

When considering management options for identified waste streams, Kier and supply chain members will adhere to the principles outlined in the waste hierarchy below.

Kier and supply chain members will ensure waste is stored away from drains, boreholes, wells and controlled waters. Containers shall be in good condition and, where required, covered to prevent dust and litter being blown out. If there is any likelihood of stored waste contaminating the surrounding environs, all necessary steps will be taken to ensure no contamination occurs. This may include the use of containment bunds with rain shelters and the use of sealed containers, i.e. clip-top drums and fluorescent tube coffins.

Before waste is treated and / or removed from Moxon Street, all subcontractors / waste contractors must provide the project team with legible copies of the following documentation:

- Environmental permits (mobile plant licences) and exemption certificates authorising on-site crushing and screening activities;
- Waste Carriers Registration Certificates;
- Environmental Permits, (Waste Management Licences and PPC Permits);
- Notification certificate of exemption from environmental permitting.

The project team and, where applicable, subcontractors will ensure that the removal of all inert / non-hazardous waste is recorded on Waste Transfer Notes. These documents must be kept

for a minimum of two years. These documents will be stored on site and made available on request.

The project team and, where applicable, subcontractors will ensure the removal of all hazardous waste is recorded on Hazardous Waste Consignment Notes. These documents must be kept for a minimum of three years. These documents will be stored on site and made available on request.

Legible copies of all Waste Transfer and Consignments Notes, recording the removal of waste from Moxon Street must be issued to Kier. This includes waste generated on site by subcontractors.

When removing hazardous waste from Moxon Street, a premises code must be used on all Hazardous Waste Consignment Notes.

In England the code must be generated in accordance with section 4.4.2 of SHEMS-STD-GR-065 Waste Management Standard

.

The relevant code for Morley House is to be advised.

9.2 Storage of Fuel, Oils & Building Chemicals

Fuel, oil and chemicals will be managed in accordance with the Pollution Prevention Standard (SHEMS-STD-GR-064) and COSHH Standard (SHEMS- STD-GR-051).

Containers must be stored within a Spill Nappy (or similar), bund or any other suitable secondary containment system (SCS). All containers must be located in a safe place to minimise the risk of damage and locked-off when not in use.

For oil tanks, intermediate bulk containers and mobile bowsers the SCS must be able to hold:

- Where one container is being stored - a minimum of 110% of the total volume;
- Where more than one container is being stored - a minimum of 110% of the largest container's storage volume, or at least 25% of their total volume (whichever is greater);
- For drum storage, the interceptor tray must be able to hold at least 25% of the total storage capacity of the drums.

Bunded areas must be made impermeable to water and oil. The base and walls must not be penetrated by any valve, pipe or opening that is used for draining the system.

9.3 Particulate Matter (Dust) & Noise

Dust and noise will be managed in accordance with the Nuisance Management Standard (SHEMS-STD-GR-063) please see schedule VII and Pollution Prevention Standard (SHEMS-STD-GR-064) please see schedule VI.

Noise and dust mitigation strategies are identified in the sensitive receptor section above, continuous noise, dust and vibration monitoring stations are proposed to be located in two positons on site.

The location of monitoring stations will be agreed with the project team and City of Westminster, to whom any breach of predetermined levels will be notified. If In the event the trigger level is breached immediate reviews will be undertaken to ensure every measure is taken to prevent reoccurrence. Due to the number of sensitive businesses and school buildings

in close proximity, we will ensure that every necessary control measure is put in place to minimise disruption by way of vibration, noise and dust nuisance. All monitoring works will be executed in accordance with the project brief (and as agreed with the adjoining property owners). The exact location of the monitoring equipment is detailed within our Section 61 application. The locations of monitoring equipment reflect locations that are most affected by the noise from the piling and excavation, and concrete substructure and superstructure works. The meters will be configured to send text and/or email alerts to relevant personnel when action levels are triggered, thus enabling an instant response.

At least a month prior to works starting the monitoring equipment will be set up to determine background levels for comparison to those taken during construction. We will agree air quality action levels with WCC and adopt a mitigation strategy if levels are breached.

9.4 General Site Activities

With regard to nuisance, the methodology in which work activities are undertaken must apply Best Practicable Means (BPM) in order to minimise negative impact on local, sensitive receptors, such as schools and domestic dwellings. However, if measures to reduce excessive dust and noise are unsuccessful, work must stop and an alternative method devised before work can resume.

The following measures must be considered when attempting to reduce noise and dust:

- Use sheeted lorries and sealed / covered skips
- Use dust extraction equipment when drilling and cutting;
- Damp down haulage roads and stockpiled materials in dry or windy weather;
- Sweep access roads regularly;
- Locate plant and equipment away from sensitive receptors;
- Use screens, including earth bunds to act as acoustic barriers;
- Isolate plant and equipment when not in use;
- Fit white noise systems on vehicles to reduce noise nuisance when reversing;
- Keep engine compartment doors closed;
- Limit vehicle movements on-site, i.e. use of one-way system.

9.5 Previously Unidentified Issues

If one or more of the following is discovered, work in that location must stop immediately and the Project Environmental Co-ordinator (PEC) informed:

- Contaminated soils;
- Archaeological remains or features;
- Suspicious objects;
- Underground storage tanks;

- Invasive species, i.e. Japanese Knotweed;
- Protected species, i.e. badgers, bats, amphibians, reptiles and plant life.

9.6 Emergency & Incident Preparedness

In order to minimise the risk of a pollution incident, subcontractors must ensure all operatives understand the environmental risks associated with their work activity and what control measures are in place to eliminate or reduce negative environmental impact.

Major Environmental Incidents shall be reported and managed in accordance with MIRP Standard (SHEM-GR-STD-013) Environmental emergency planning must be managed in accordance with the Fire Management Site Standard (SHEMS-STD-GR-021), Appendix H of the Construction Phase Plan.

The Major Incident Response Plan must be implemented where relevant. Please refer to schedule IV

Reporting and investigation of environmental incidents must be in accordance with the Incident and Near Miss Reporting Standard (SHEMS-STD-GR-011)

9.7 Monitoring

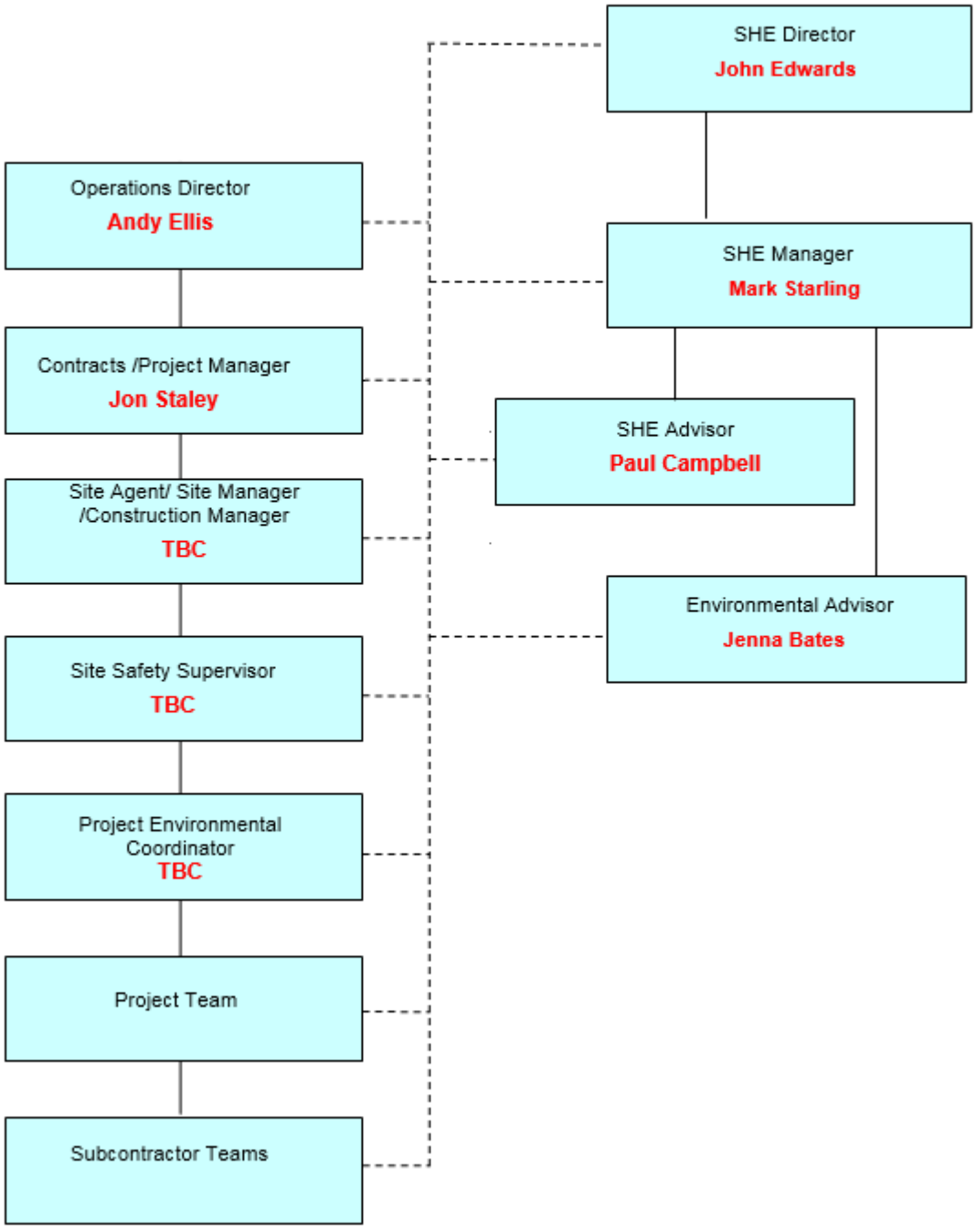
It is proposed that 2 no. unattended real-time sound level meters will be deployed on the site boundary to monitor LAeq. The proposed trigger levels are TBA subject to agreement with WCC .The noise, vibration and movement monitoring will include an online interface and email alerts to the Environmental Coordinator and Site Engineer.

Monitoring locations, action levels and results from regular surveys will be recorded. If the action value is breached, an environmental incident will be recorded and site activities and method statements will be reviewed to determine whether further mitigation is possible.

Schedule I - Environmental Aspect & Impact Assessment

Schedule II – Safety, Health & Environmental Management Structure

6.1 Project Management Organogram



Schedule III – Safety, Health & Environmental Management Responsibilities

Appointments & Responsibilities

This section defines the SHE responsibilities of key project personnel where appropriate change titles to suit business requirements:

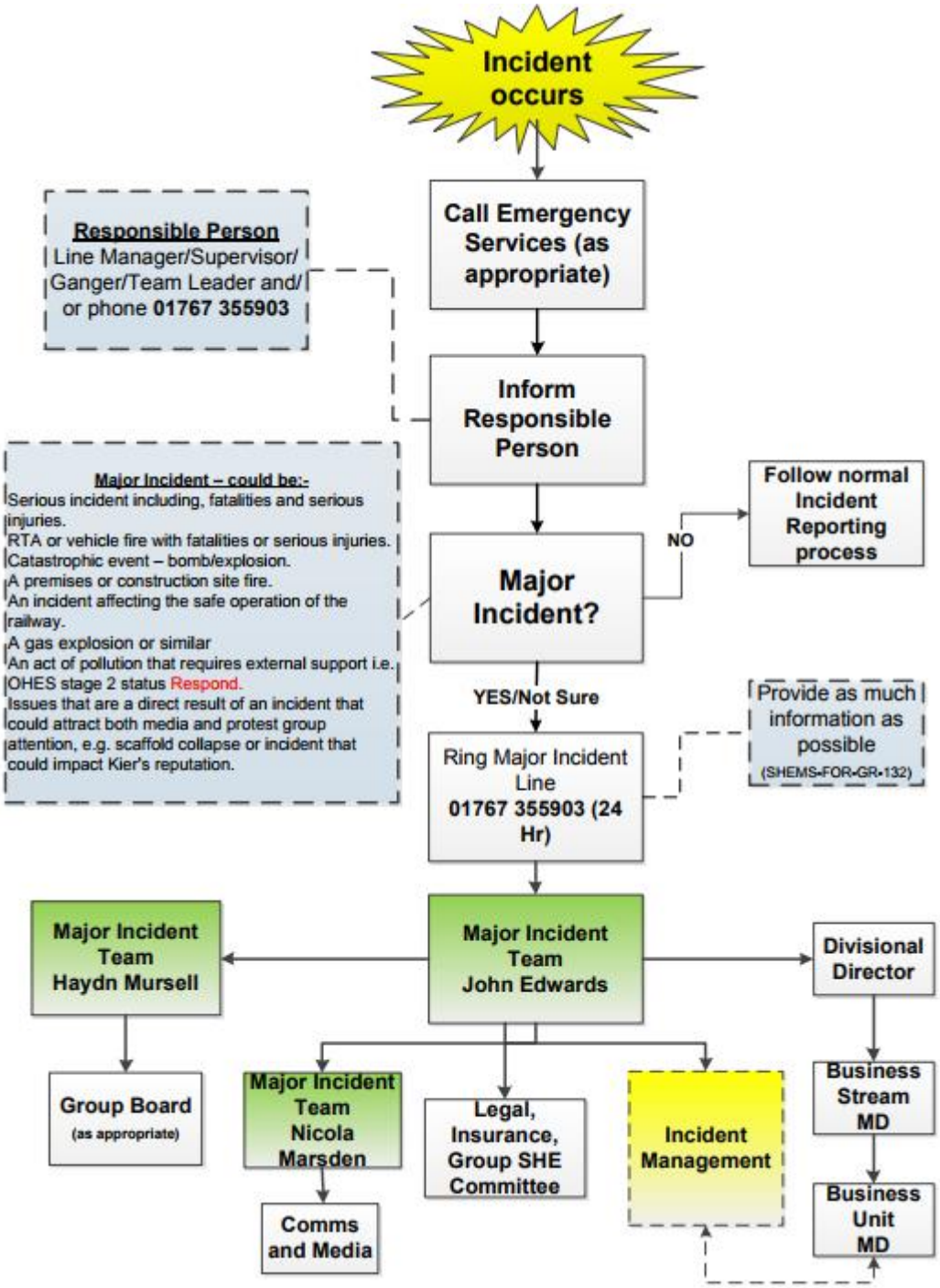
Operations Director	**Andy Ellis**
• Review and approve Construction Phase Plans; • Monitor and control the management of the plans to ensure effective implementation; • Set SHE objectives and review performance against them; • Determine strategy for achieving SHE objectives and improvements; • Ensure that works are carried in a safe manner and that adequate resources are provided to carry out all operations with due regard to SHE and welfare; • Assist in any regulatory, external or internal audit as required; • Report any SHE initiatives that they consider could lead to improvement.	
Contracts Manager /Project Manager/Operations Manager	**Jon Staley**
• Ensure that workplaces under their control are adequate with respect to health, safety, welfare and the environment; • Ensure, so far as reasonably practicable that a suitable project specific Construction Phase Plan is prepared and implemented; • Make appointments where necessary, e.g. Site Health & Safety Supervisor, Project Environmental Co-ordinator, Fire Wardens etc; • Ensure, so far as reasonably practicable, employees and contractors are competent; • Recommend training needs to suit individual and workplace requirements; • Ensure that arrangements are in place for effective consultation with staff and contractors; • Hold regular meetings with the project team to review SHE issues; • Review project management systems at regular intervals to ensure continued suitability and effectiveness; • Report to the client on SHE matters as required; • Provide regular reports on the effectiveness of the Construction Phase Plan to the Construction Director; • Assist in any regulatory, external or internal audit as required; • Report any SHE initiatives that they consider could lead to improvement.	
Construction Manager / Site Manager /Agent	**TBC**
• Organise and implement the provision and maintenance of a working environment and systems of work that are, as far as is reasonably practicable, safe and without risk to human health or the environment; • Ensure that adequate monitoring and supervision arrangements are maintained and clearly defined areas of responsibility for contractors are established and implemented; • Approval of method statements and risk assessments; • Ensure SHE notice boards display up-to-date information; • Assist in any regulatory, external or internal audit as required; • Report any SHE initiatives that they consider could lead to improvement.	
SHE Manager/Environmental Advisor	**Paul Campbell / Jenna Bates**
• Maintain effective communications with Kier's Head of Safety, Health & Environment to ensure adequate flow of SHE information; • Provide advice to the Directors to enable them to set appropriate performance objectives and improvements; • Report on the levels of performance to enable Directors to review the effectiveness of current SHE arrangements; • Advise managers on measures to ensure the effective operation of the Kier Group Health, Safety and Environment Management System and the promotion of a SHE culture; • Give advice and guidance, to any person who may require it, to promote the understanding and operation of SHE best practice; • Carry out regular inspections and audits, provide reports, give guidance and advice to managers, contractors, Health and Safety Supervisors and Environmental Co-ordinators;	

• Liaise with Kier Project Environmental Co-ordinators as required; • To assist in any regulatory, external or internal audit as required; • Report any SHE initiatives that they consider could lead to improvement.
Project Team
• Be familiar with the Construction Phase Plan and co-operate in its implementation; • Identify significant safety, health and environmental risks connected with their work package / activity; • Observe all environmental requirements and be respectful to the environment; • Report any SHE initiatives that they consider could lead to improvement; • Conduct regular SHE inspections; • Report all potential / actual SHE risks to their supervisor as soon as possible; • Assist in any regulatory, external or internal audit as required; • Report any SHE initiatives that they consider could lead to improvement.
Contractor Teams
• Be familiar with this Construction Phase Plan and co-operate in its implementation; • Report any SHE initiatives that they consider could lead to improvement; • Manage all SHE risks associated with their work activity / package in accordance with Kier procedures; • Provide completed environmental reports to the Kier Project Environmental Co-ordinator as required; • [illegible] toolbox talks to site staff (see section 4.14 for project specific requirement); • Report all potential / actual SHE risks to their supervisor and Kier Project Environmental Co-ordinator as soon as possible; • Assist in any regulatory, external or internal audit as required; • Report any SHE initiatives that they consider could lead to improvement.

Schedule IV – Major Incident Response Plan

Examples of a Major Incident are:

- **Accidents and incidents involving fatalities, serious injuries or a notifiable disease, including those where a member of the public is seriously injured or fatally injured;**
- **Road traffic accident or vehicle fire with serious injuries or fatal injuries (of either employees or public);**
- **Incidents involving a catastrophic event, third party intervention such as terrorist/activist group, including a bomb/explosion or any incident which may attract media attention;**
- **A premises/construction site fire;**
- **An incident affecting the safe operation of the railway;**
- **A gas explosion or similar;**
- **An act of pollution that requires external support i.e. OHES Stage 2 status-Respond;**
- **Issues that are a direct result of an accident/incident e.g. when working in a nuclear environment, damage caused by a scaffold collapse could attract both media and protest group attention.**


Incident occurs
Call Emergency Services (as appropriate)
Responsible Person
Line Manager/Supervisor/ Ganger/Team Leader and/ or phone 01767 355903
Inform Responsible Person
Major Incident – could be:-
Serious incident including, fatalities and serious injuries.
RTA or vehicle fire with fatalities or serious injuries.
Catastrophic event – bomb/explosion.
A premises or construction site fire.
An incident affecting the safe operation of the railway.
A gas explosion or similar
An act of pollution that requires external support i.e. OHES stage 2 status Respond.
Issues that are a direct result of an incident that could attract both media and protest group attention, e.g. scaffold collapse or incident that could impact Kier's reputation.
Major Incident?
NO
Follow normal Incident Reporting process
YES/Not Sure
Provide as much information as possible (SHEMS-FOR-GR-132)
Ring Major Incident Line 01767 355903 (24 Hr)
Major Incident Team Haydn Mursell
Major Incident Team John Edwards
Divisional Director
Group Board (as appropriate)
Major Incident Team Nicola Marsden
Legal, Insurance, Group SHE Committee
Incident Management
Business Stream MD
Business Unit MD
Comms and Media

National Spill Response Contractor Group Agreement

Kier now have in place a Group agreement with national spill response contractor OHES Environmental.
If an environmental incident occurs on one of our sites OHES is able to provide advice, and where required practical help, through their **1-2-3 Spill Response** division.

OHES are a multi-disciplinary environmental consultancy, which specialise in fuel and oil spillage clean-up and are an UK Spill Accredited Contractor. Their staff are highly experienced and many have worked previously for the environmental regulators.

With offices in Wokingham, Tewkesbury, Leicester and Risby near Bury St Edmunds, and a network of locally based spill response consultants and contractors, OHES are able to provide national coverage, 24 hours a day seven days a week.

In the event of an environmental incident, a site should call **0333 333 1123** - **Stage 1**.

The call will be answered by an experienced incident adviser, who will assess the situation and provide appropriate advice, which is free.

The adviser will determine if on-site assistance is required and, if so, a response team will be mobilised – **Stage 2, which initiates a Major Incident**.

The response team will take charge of the environmental incident and begin the clean-up – **Stage 3**.

Under the Group agreement OHES, once mobilised, are able to spend up to £5000 on clean-up costs. Any costs in excess of this will require authorisation by a Kier employee. The Group agreement also includes a schedule of rates. Full details of the service level agreement will be placed on the MyKier Procurement page.

1-2-3 Spill Response information packs, which will be distributed shortly to sites, will include posters, contact phone numbers and the schedule of rates.

Minor Environmental Incidents shall be reported in accordance with Group Standards Incident and Near Miss Reporting (SHEMS-STD-GR-011).

Other consultancy services offered by OHES cover:

- Ecology & Fisheries
- Contaminated Land
- Water Quality & Environmental Monitoring

Schedule V – Major Plant information

CFA

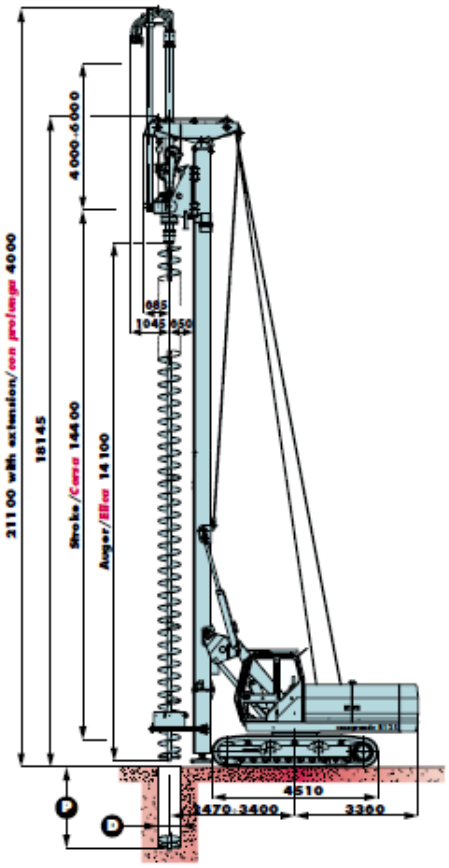
CFA rig for soft piles

General arrangement and dimensions

Composizione generale e dimensioni

B125

Arrangement with continuos flight auger
Composizione con elica continua



Borehole dimensions C.F.A.
Dimensioni di scavo C.F.A

Diameter Ø *Diametro Ø*	in *mm*	D	**24** ***600***	**32** ***800***
Max depth *Profondità max.*	ft *mm*	P	47 + 20 *14400 + 6000*	47 + 20 *14400 + 6000*
Max depth with auger cleaner *Profondità max. con pulitore elica*	ft *mm*	P	44 + 20 *13400 + 6000*	44 + 20 *13400 + 6000*
Max. extraction force *Forza max. di estrazione*	lbs *kN*		76,435 *340*	76,435 *340*

Technical information for CFA rig

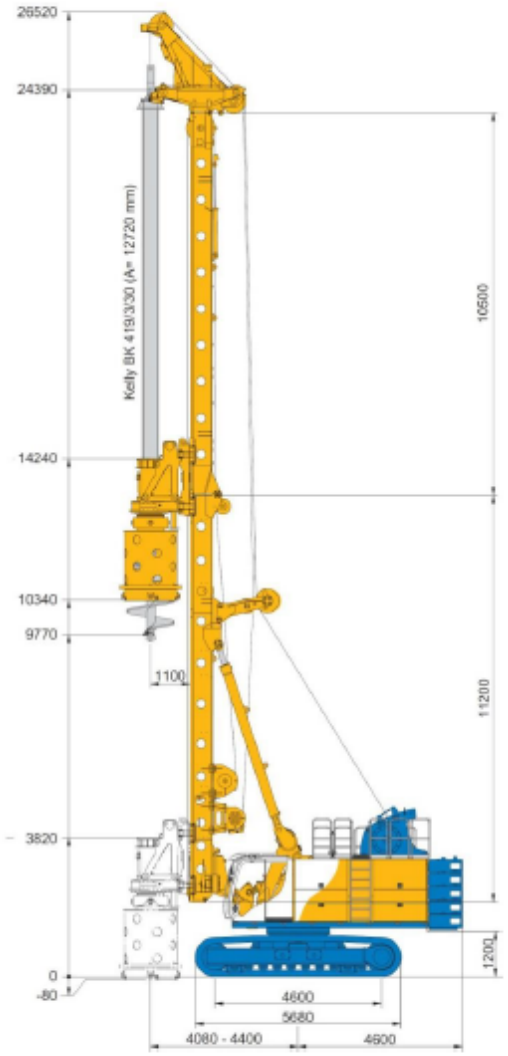
Balfour Beatty
Ground Engineering

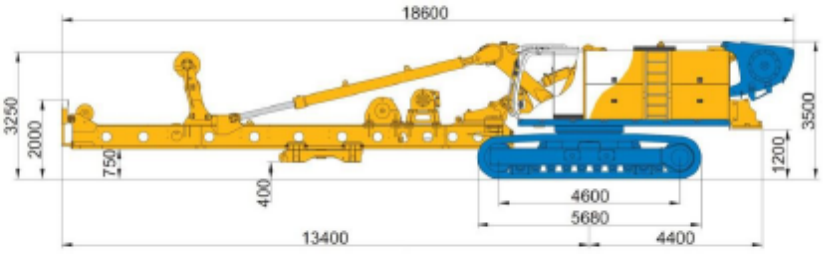
Bauer BG30
BBGE Plant Number: 1102

Technical Data	BG30
Overall height	26500 mm
Operating weight approx (no bar or tools)	94000 kg
Radius to Ballast	4600 mm
Mast inclination (backward/forward)	15/5 deg
Mast inclination (lateral)	2 deg
Rotary Drive - 1st gear (nominal)	295 kNm
Max drilling diameter (cased)	1600 mm
Max drilling diameter (uncased)	1900 mm
Crowd force (push/pull) - effective	330/330 kN
Crowd force (push/pull) - net extraction force	270/280 kN
Main winch* (effective/nominal)	274/351 kN
Auxiliary winch* (effective/nominal)	80/100 kN
Superstructure length	6900 mm
Superstructure width	3000 mm
Width with walkways extended	5400 mm
Overall track length	5680 mm
Overall track width (closed/open)	3500/4600 mm
Track shoe width	900 mm
Transport - Base weight	69500 kg
Transport - Rotary Table weight	5200 kg
Transport - Ballast weight	15200 kg
Transport - Mast weight	5000 kg
Vehicle - Base	Low-loader
Vehicle - Rotary Table and Ballast	Semi-low
Vehicle - Mast	45' Flatbed
Vehicle - Kelly bar	Trombone

Single Line Pull

Available Kelly Bars			
Number and Type	Closed/Open (m)	Digging Depth (m)	Weight (kg)
KB0070 - 4 part Locking	19.3/66.7	62.7	12600
KB0071 - 3 part Locking	14.7/38.9	34.8	6750





Important – all dimensions are approximate and subject to modification and configuration changes

SFA piling rig for temporary piles and hard piles

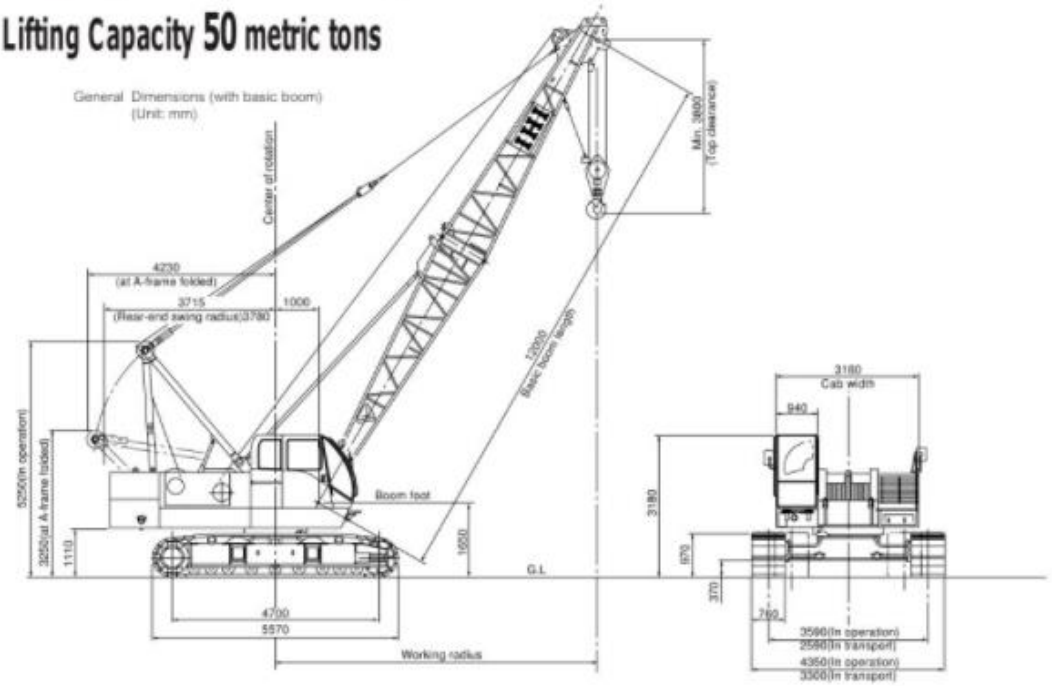
IHI

CCH500-3II

Fully Hydraulic Crawler Spanner Crane

Lifting Capacity 50 metric tons

General Dimensions (with basic boom)
(Unit: mm)



Specification

Performance	
Swing speed	3.5rpm
Travel speed	1.6km/h(1mph)
Gradeability	40%(Approx.22)
Engine	
Make	Cummins Inc.
Model	QSB6.7
Type	Water cooled, 4-cycle, direct fuel injection turbocharged and charge air cooled
Total piston displacement	6.7L
Rated output	149kW/2,100rpm
Fuel tank capacity	240L
Battery	12V x 2pcs.
Load hoist system(Main&Aux.)	
Hydraulic motor	Variable displacement axial piston type
Reduction gear	One-stage planetary gear and single stage spur gear
Hoist drum	Dual drums on inline individual shaft, independent hydraulic motor driven, lagging type with lebus grooved drum
Clutch	Internal expanding band type
Brake	External contracting type
Drum lock	Ratchet lock
Boom hoist system	
Motor	Axial piston type
Reduction gear	Two stage planetary gear
Hoist drum	Lebus grooved drum
Brake	Automatic spring-loaded hydraulically released wet type multi-disk
Drum lock	Ratchet lock

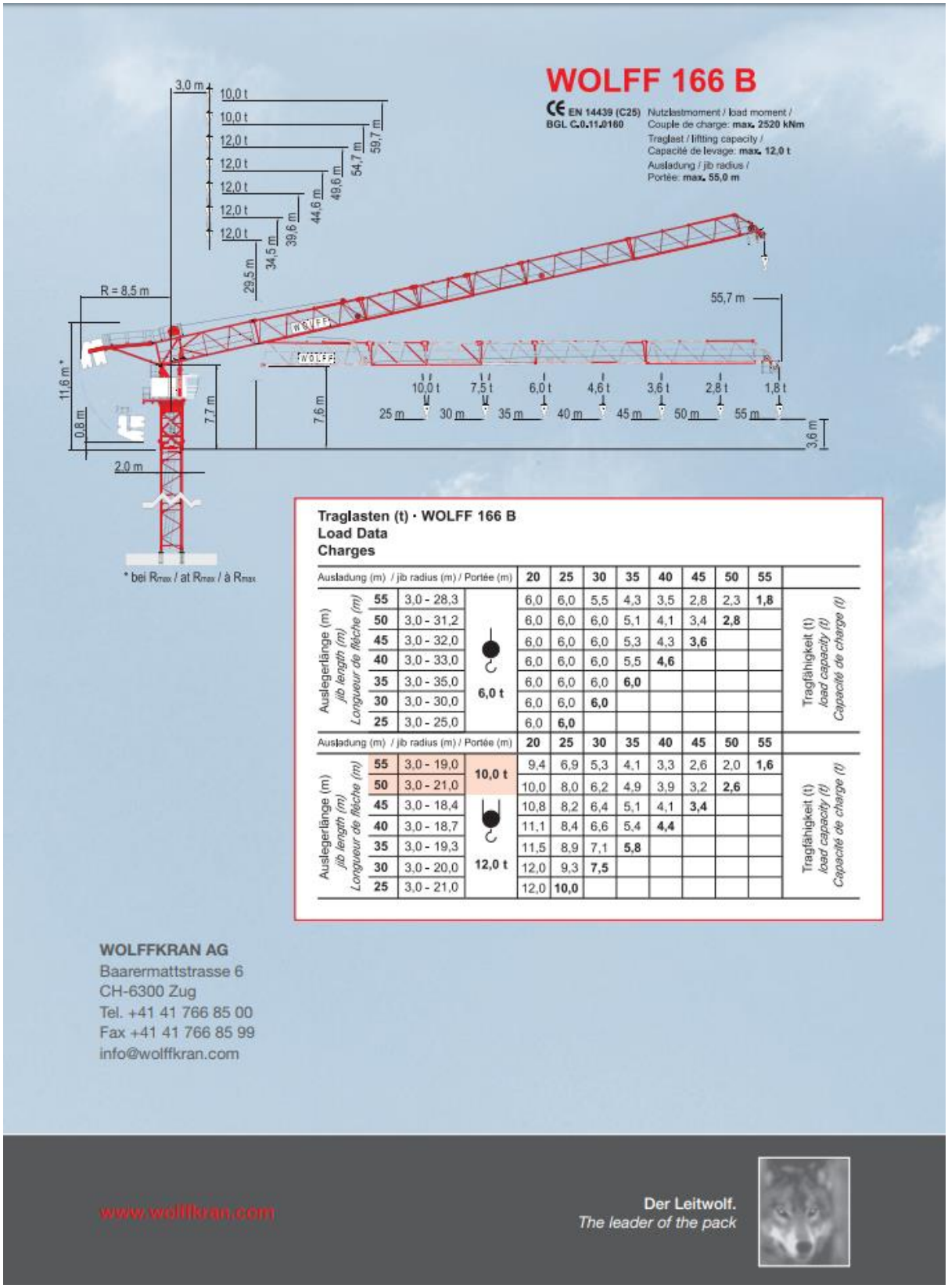
Travel speed changes depending on the load.

Standard equipment

Instrument
Engine tachometer (Hour meter)
Hydraulic oil pressure gauge (for control circuit)
Fuel level gauge
Engine coolant thermo indicator, Engine oil pressure indicator, Hydraulic oil thermo indicator } indicated by bar graph in OK monitor
Lighting
Work light 24v x 80w x 2
Room light 24v x 20w x 1
Safety device
Automatic stop for hook overwinding
Automatic stop for boom overwinding
Telescopic boom limit stop
Swing lock
Main and Aux. drum lock
Safety valve for hydraulic circuit
Counter balance valve
Control lever locking device
Standard accessories
Windshield wiper
Roof glass wiper
Sunvisor
Sun shade
Storage pouch
Reclining operator's sheat
Floor mat
Steps for operator's cab (foldable type)
Radio
Cigarette lighter
Ash tray
Rearview mirrors (R/L)
Horn
Swing warning flasher
Travel warning flasher
Low-noise cab
Bronze tinted glass
Electrical engine throttle control
Hydraulic assist brake (Main & Aux. winch)
Winch mode selector (main & Aux. winch)
Ultra low speed control
Wire mesh boom walkway (for inner boom)
Plug socket (24v)
Fuel filling pump
"A"frame (High gantry) erecting device

Crawler crane to support piling rigs

Proposed tower crane



Proposed tower crane technical data

Alimak Scando 20/30
Passenger Goods Hoist

Hoist Technical Specification

Capacity

Pay-load capacity	2000kg
Passengers	19
Speed	40m/min
Max. lifting height	150m

Cage Dimensions

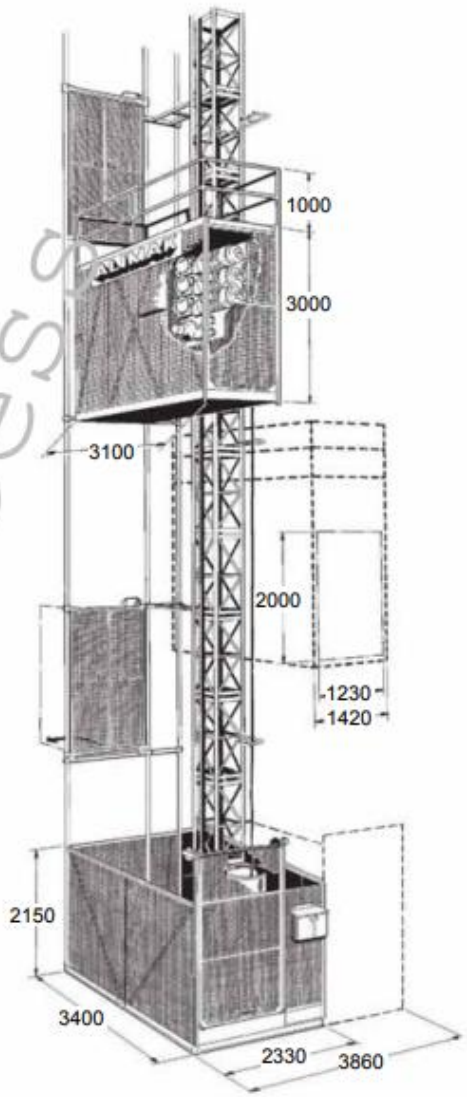
Internal width x length x height	1.3m x 3.0m x 2.6m
Door opening width x height	1.23m x 2.0m

Electrical Data

Power supply (3 phase & earth no neutral)	415V 80A
Power supply fuses	80A
Starting current	300A
Power consumption	39kVA
Generator supply	210kVA

Options Available With This Hoist

Embedment frame
Steel base plate
Landing protection panels
Landing infill plates
Heavy duty base ramps
Landing bridges
Top hat
Drop down flaps
Metal floors
"C" Door (will add 175mm to the width of the ground enclosure)



GB ACCESS
HOIST HIRE SPECIALISTS
A DIVISION OF

10 Nene Valley Business Park
Oundle, Peterborough, PE8 4HN

Tel: 01832 272 408
Email: hire@gbaccess.co.uk
Website: www.gbaccess.co.uk

GBA6004

Proposed hoist information

Schedule VI – Kier Standard Procedures Pollution control (Dust & Noise)

Group Standard **Pollution Prevention**

3.3.1 Dust

Man-made particulate matter (PM) is generated from a number of sources such as plant / vehicle exhausts and wind-blown mineral dust. Particulate matter smaller than 10 micrometres (PM10) and 2.5 micrometres (PM2.5), known as respirable dust, can penetrate the lungs, settle and cause significant health impacts.

The environmental aspect and impact assessment should identify activities with a potential to generate particulates and relevant control measures to reduce significant impacts.

On-road vehicles and plant should be in good working order. Vehicles must hold a valid MOT certificate and be taxed and insured.

All off-road mobile plant should comply with the emission standards and directives outlined within the European particulate matter emission standards (all such plant should carry an EC approval number to indicate that it conforms to the levels given in the regulations for that type of machinery).

All plant should be well maintained. Any production of visible smoke (except on start-up) should result in the machine being stopped until any problems have been rectified or the plant replaced.

Engines and exhaust systems should be regularly serviced according to the manufacturer's recommendations and meet the relevant emission standards. Exhaust filters should be fitted to plant and equipment to reduce smoke and particulate emissions.

Most of Greater London is covered by a low emissions zone (LEZ). In order to drive in this zone without paying a daily charge, larger vans and minibuses need to meet the Euro III emissions standard for particulate matter and lorries, buses and coaches need to meet Euro IV.

Plant and equipment must be sited away from the noise sensitive areas and if used intermittently shut down when not in use. Engine compartment doors should be closed. Where it is necessary suitable noise screening must be provided. Consideration should also be given to selecting work methods that do not generate vibration or excessive noise.

Construction sites, waste management facilities and surface mines can generate significant quantities of wind-blown mineral dust. These types of sites may have specific limits set by planning, contract or permit requirements. Where specific limits are in place, suitable equipment for monitoring must be used. This may include equipment for monitoring area and boundary dust. Monitoring programmes must include details of actions to be taken in the event that limits or trigger levels are breached.

Schedule VII – Kier Nuisance Management Standard Procedures (Dust & Noise)

3.2 Noise and vibration - Section 61 prior consent

Where construction work is likely to have a significant potential to impact on local residents / businesses an operating company should consider applying to their local authority for section 61 consent. This is a voluntary agreement between the contractor and the local authority on how the works will be carried out. It requires the contractor to adopt the best practicable means of carrying out the works with regard to the generation of noise (and also dust and vibration, if applicable). This should be done through consultation with the local authority EHO and the relevant environmental manager / SHE manager. For specific information on local authority requirements consult the local authority Code for Construction, if available.

Having section 61 consent in place can significantly reduce the risk of both prosecution and delay to a project as a result of local authority intervention. Before starting on site a check should be made to see if there is section 61 consent in place as it may have already been obtained by the client.

If a section 61 consent is in place, Kier must comply with the consent requirements and ensure that these are communicated to all site staff and sub-contractors and referred to in the construction phase environmental management plan

3.3 Noise and vibration - Section 60 and Section 80 notices

Excessive noise, vibration or dust and working outside stipulated hours, especially if it causes noise and / or vibration, is likely to cause nuisance to our neighbours who may then complain to the local authority's EHO.

As a consequence of such a complaint, the local authority can serve a notice, under section 60 of the Control of Pollution Act 1974, or a nuisance abatement notice under section 80 of the Environmental Protection Act 1990, on the site or premises.

Either notice can require that the activity causing the noise or nuisance is stopped immediately and the notice can impose severe restrictions on hours of work, machinery that can be used, noise limits etc. Failure to comply with the requirements of either a section 60 or an 80 notice is likely to result in a prosecution.

In the event that a section 60 or section 80 notice is received on site or at any office, Kier staff must notify the relevant Environmental Manager giving as much detail as possible about the events leading up to the receipt of the notice.

In the event that any conditions imposed on the site through section 61, section 60 or planning requirements are likely to be breached, for example if it is necessary to work outside the permitted hours, the site / project manager should contact the local authority EHO and the relevant Environmental Manager in advance to discuss how best to proceed. Any changes agreed with regard to working hours etc. should be confirmed in writing.

3.4 Dust

UK legislation allows local authorities to impose limits on dust and emissions generated by a site (including construction sites, waste management facilities and surface mining sites). Where dust escapes site boundaries and cause nuisance to others, this standard applies. Dust can also impact on local air quality and are also covered by the Pollution Prevention Standard (SHEMS-STD-GR-064).

Failure to keep within set limits can result in abatement notices being served if complaints have been received.

Where the potential exists for activities to cause a nuisance from dust or odour, Kier will ensure that suitable, adequate and effective control measures are put in place prior to the activity commencing.

Dust suppression may be required during earthworks, demolition, vehicle movements, surface mining and other activities.

Nuisance-related dust monitoring may include regular recorded visual assessments, or where there are specific limits or trigger levels, the use of specialist monitoring equipment.

In London, Supplementary Planning Guidance has been developed in relation to the control of dust and emissions. This requires projects to produce Air Quality Statements as part of the planning process. Local authority requirements should be checked to ensure relevant conditions are discharged.

This guidance also places restrictions on emissions from non-road mobile machinery.

Schedule VIII – Community Consultation Information