

## Traffic Management and Impact Minimisation

Typical examples of how we aim to minimise our impact through construction include;

### ➤ Preliminary Traffic Management Plan

Providing a clear and universal TMP prior to commencement will enable our suppliers/hauliers and subcontractors to effectively plan their route to and from site to avoid impacting on the immediate community in terms of congestion but in an environmental sense. Clear access routes and transparency in respect of site constraints will assist in avoiding abortive and unnecessary deliveries and effective use of JIT deliveries further promote a plan with the environment in mind.

Our Traffic Management plans, requirements will be included in supply chain orders, subcontract orders, be included in our L02-06 Information for Hauliers and deliveries document, be included in our Construction Phase Health and Safety Plan and will be available in our onsite Traffic Management plan and displayed on site.

### ➤ Construction Phase Traffic Management Plan:

Our Traffic Management Plan will be a live document that is refined and evolves as the scheme progresses. Key elements of the TMP are outlined below;

- Site traffic will be separated from pedestrian traffic where possible always. Traffic management will be carried out in accordance with our company's procedures ref HS&E-STD-T02. At the stages of substructure formation, pedestrian routes will be established separately from vehicular routes. These routes will be managed and updated by the sub-contractor carrying out the substructure works. Pedestrian routes will form part of the overall traffic management plan managed by Galliford Try Partnerships.
- There may be a requirement for service diversions, which will be programmed accordingly. This will be carried out through careful liaison with all utility services ensuring it is completed as efficiently as possible causing minimal disruption to the local area.
- The groundwork's sub-contractor will be contracted to reduce level dig, carry out pile probing and pile mat formation for the ground bearing piles and ground

floor formation. Plant and machinery as stated in the ground worker's method statement and risk assessments will be delivered to site and will manoeuvre within the site boundaries to carry out the afore mentioned operations.

- Waste aggregates will be stored in specific locations on each site so that 15m<sup>3</sup> lorries can take loads away from the material delivery area. Crushed materials will be used from the stockpile that has been generated on site. It is assumed that crushed materials will need to be imported.
- Banks men will be employed to facilitate machine movement. Vehicular and pedestrian traffic routes will be separated physically and it is anticipated that the groundwork's sub-contractor will manage the routes at this stage and the traffic management plan will form part of the overall traffic management plan managed by Galliford Try Partnerships.
- The piling sub-contractor will attend site once the pile mats are ready to accept the rigs and commence ground bearing piles. Plant and machinery as stated in their method statement and risk assessment will be delivered to site and off loaded into each site. The agitator will be positioned to allow concrete lorries to deliver within the delivery area. The piling rigs and supporting 360 machines will operate from one end of site to the other, setting the piles in the ground and removing spoil arisings. Vehicular and pedestrian traffic routes will be separated physically and it is anticipated that Galliford Try Partnerships will manage the routes at this stage.
- When the piles are ready for the tower crane, the crane will be delivered in sections, progressively erected, used, dismantled and taken away under Galliford Try Partnerships method statement and risk assessment. It is envisaged the tower crane will be delivered to the site, and lifted into place by a supporting mobile crane stood on Crogsland Road, it is anticipated that this operation will almost certainly require a road closure. We may need to agree a temporary road closure with Camden. Vehicular and pedestrian traffic routes will be separated physically and it is anticipated that Galliford Try Partnerships will manage the routes at this stage. The tower crane will assist in the formation in the sub structure and superstructure. Banks men will be employed to ensure that the plant on the ground will not interfere with the movement of the tower cranes.
- The groundwork's sub-contractor will continue to break down piles, form pile caps, drainage, basements and the lower ground slabs. Banks men will be employed to facilitate machine movement. Vehicular and pedestrian traffic routes

will be separated physically and it is anticipated that the groundwork's sub-contractor will manage the routes at this stage and the traffic management plan will form part of the overall traffic management plan managed by Galliford Try Partnerships.

- An external works sub-contractor will attend site to carry out the landscaping works under their method statement and risk assessment. Trades proceeding the superstructure will deliver materials to site and will unload at the designated delivery area. It is anticipated that there will be plant operating in controlled zones, distributing materials to and from storage to the hoisting area. Pedestrian routes to the storage area will be physically separated. This route will be separated from the vehicle route by road barriers for safety purposes and to prevent pedestrians straying into vehicular zones. These routes will be managed and updated by Galliford Try Partnerships.
- As construction progresses as listed above (and as necessary), the traffic management plan will be developed. Scheduled meetings to discuss and coordinate vehicular activity/deliveries with neighbouring parties affected by the works will be held so that it will not otherwise affect their business, commuting or enjoyment of their property.

➤ Materials/Plant Deliveries

All deliveries of plant, equipment and materials will be unloaded and loaded as described in the traffic management plan extract and shown in our site logistics strategy in section 22. The deliveries are to be scheduled in advanced so that the appropriate arrangements for unloading/loading and storage can be considered to encompass health and safety requirements. This statement is to be read in conjunction with the traffic management plan and the gateman's method statement and risk assessment.

The material unloading areas will be controlled by the gateman. Materials within this area will be stored in a safe manner as described in our company's procedures ref H03-02 MS/001 while plant, equipment or materials are taken to its intended storage location. There will be allocated material storage areas within the site boundary

however the projects size constraints will place emphasis on JIT deliveries (Just in time).

Deliveries and waste materials leaving the site will predominately be plant and equipment for the enabling works and the initial site set up. All deliveries will adhere to our traffic management plan. This is also attached within the appendices section of this submission. This will be the same for all our major plant deliveries / collections. This plant would initially involve piling rigs and tower cranes moving onto concrete pumps, tele-handlers and mechanical hoisting as we progress through the scheme.

The site will incorporate a tbc volume of 15m<sup>3</sup> wagons daily and will be removing reduce level dig material during ground works stages to adjust the site to formation levels. Imported crushed 6F2 grade material will be delivered to site in 15m<sup>3</sup> wagons at a rate tbc daily following this to allow us to produce a piling mat to a designed depth and bearing capacity.

In the period when piles are being bored/cast, the vehicles delivering materials will reduce while concrete is being poured. A volume of concrete wagons on turn around will attend site daily. There will be a piling rig on site for a period prescribed in the construction programme to install RC Piles to the required diameter for the structure.

Following this, and daily there will be concrete wagons servicing the construction of the concrete foundations, pile caps, basements, walls and structural frame. On a weekly basis during this period, articulated/ wagons/ rigid vehicles will deliver formwork and associated materials. Depending on whether vertical members or slabs are being poured. It is anticipated at this stage based on available information and SPA that articulated access to Crogsland Road will be avoided.

In terms of façade and internal works - On a regular vehicles and other associated lorries will attend site delivering materials such as bricks, windows, mechanical and electrical materials, plasterboard, doors, kitchens, skirting, flooring etc. This will be all associated material for the internal fit out stages of the scheme. To reduce the amount of material on site our aim is to incorporate modular pod construction where possible, which could range from Bathrooms to Utility Cupboards pods where these will be fabricated off site and delivered complete. This will not only aid our programme but also reduce the amount of material deliveries and storage we would need if this was to be constructed traditionally.

Subcontractor deliveries will be controlled using the site delivery schedule and by booking subsequent hook times for each crane, these control measures will be conveyed to the subcontractor in their contract. Subcontractors not adhering to this procedure will have their delivery turned away.

Deliveries are to be controlled in such a way that they do not cause a nuisance on Crogsland Road or indeed any nearby road identified in the Traffic Management Plan. Delivery vehicles are not to park on the pavement along any of the roads except in designated loading areas. We have yet to establish exact loading/distribution points with the local authority, to be agreed with Camden and indicated on our logistics plans.

### ➤ Site Waste Management

A site waste management plan will be developed for the scheme. All sub-contractors will be required to clear all their waste throughout the day and at the end of each working day to avoid it becoming a health and safety hazard. Facilities will be provided for each subcontractor to store and remove the waste. Wheelie bins will be located on each floor of each block and at various locations for sub-contractors to store waste. Wheelie bins will be labelled with the appropriate European waste code and checked on a regular basis to ensure compliance. Manual handling of the wheelie bins must be observed to avoid accidents. The wheelie bins will be man handled through the corridors to the hoist run off at each level of the blocks.

We will be adopting on site waste segregation even though the waste transfer company will operate the segregation of waste at the waste transfer station. Skips will be positioned on the slabs as they progress upwards and the sub-contractor carrying out the sub and superstructure works will coordinate this. Once following trades are introduced to the scheme, skips will be positioned on the podiums levels and within the car park areas. Operatives will be required to follow the intended pedestrian route to the intended waste area and empty the wheelie bin into the relevant skips. Galliford Try Partnerships will be responsible for sweeping the corridors and the staircases to minimise the effects of dust. Galliford Try Partnerships will also be responsible to ensure the call off the skips to ensure effective waste disposal and ensuring that there are enough bins throughout the building. The sub-contractor carrying out the sub and superstructure will be required to remove their own waste from site. They will be using their own license waste transfer and waste management company.

➤ **CO2 / Site Impacts**

Galliford Try utilise a variety of techniques to ensure our Site Management staff record and report accurate Site Impact information to Senior Management and the Board. Such mediums are summarised as follows;

➤ **CO2 Site delivery calculation Tool;**

All site deliveries are recorded and submitted monthly to identify the emissions generated by our operations.

GallifordTry		Site Delivery CO <sub>2</sub> Emmissions Monitoring Calculation Tool							Linden HOMES		Doc 3 of 3	
										Total Amount of CO <sub>2</sub>		
										416.7106		
Date	Type of Delivery Vehicle Only Enter One from Below			Number of Drops (Only Enter One from Below)		Distance delivery has traveled from	Distance delivery has traveled to and from site			CO <sub>2</sub> calculator		
	Van	7.5t	Articulated	Single	Multiple	Single	To Site	From Site	Total CO <sub>2</sub>			
02.10.17	1									3.066		
02.10.17		1		1		16		6	1	19.232		
02.10.17	1			1		8				3.504		
03.10.17	1				1			1	1.5	1.095		
03.10.17			1	1		18				23.67		
03.10.17		1		1		7		1	2.5	8.414		
04.10.17	1					7				1.533		
04.10.17		1		1		7				8.414		
05.10.17		1		1		7				8.414		
05.10.17		1		1		4				4.808		
06.10.17	1				1			2	1	1.314		
06.10.17		1		1		7				8.414		
09.10.17		1			1			7	3	12.02		

**Help on Filling in this Form**

- 1 Enter the Date of the delivery
- 2 Enter a "1" for the type of delivery either "Van", "7.5t", or "Articulated"
- 3 Enter a "1" for the type of Drop, Single or Multiple
- 4 Enter the Distance Travelled for a Single Drop Delivery in miles
- 5 Enter the Distance Travelled for a Multiple Delivery To Site in miles
- 6 Enter the Distance Travelled for a Multiple Delivery From Site in miles

➤ **Visitors Calculation tool;**

All site operatives, site management and visitor data is collected to calculate the impact of travel to and from the project

GallifordTry												Daily Signing in Register CO <sub>2</sub> Calculation tool		
Project Name:		Devon's Road		Job no.		H1583								
Date completed:		27/07/2017												
Means of Travel	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec		
Total miles by CAR	11745	14726	15764	16354	15363	16357	14357	12286	8274	3876				
Total miles by TRAIN	47675	102290	173150	146444	164523	165375	157486	91126	61184	92647				
Total miles by BUS	904	1684	1794	1226	1152	1125	968	316	504	457				
Total miles by VAN/MINIBUS	11843	20702	13576	6920	7651	7852	6930	17634	15285	1276				
Total CO <sub>2</sub> by CAR	1497.87	1877.965	2009.91	2240.135	1946.039	2095.9175	1830.9175	1566.72	1054.935	494.18	0	0		
Total CO <sub>2</sub> by TRAIN	2324.0588	4991.5125	8441.0625	7139.145	8020.456	8062.0313	7877.4425	4442.46	2982.72	4516.5413	0	0		
Total CO <sub>2</sub> by BUS	39.759	72.2015	76.91775	52.58475	49.382	48.234375	42.3605	13.5455	21.609	19.593875	0	0		
Total CO <sub>2</sub> by VAN/MINIBUS	1612.1294	2816.05975	1888.8765	901.1475	1041.452	1068.8535	929.73375	2460.428	2626.9405	173.6955	0	0		
<b>Total Kg of CO<sub>2</sub></b>	<b>5472.8161</b>	<b>9759.33875</b>	<b>12416.7693</b>	<b>10432.99</b>	<b>11057.41</b>	<b>11264.637</b>	<b>10480.054</b>	<b>8423.167</b>	<b>6886.2043</b>	<b>5204.0206</b>	<b>0</b>	<b>0</b>		

**Data Entry Guidance**

Enter the total number of miles by Car, Train, Bus and Van/Minibus for each Month

Train 0.078kg/km  
 Bus 0.0696 kg/km  
 Car 0.204 kg/km  
 Van 0.2178 kg/km

➤ **Water, electricity and fuel consumption**

All consumption data is collated monthly to accurately reflect the sites demand on supplies and assist in formulating improved strategies for sustainable building.



Water Supply	Opening Water Meter Reading Before Use			2378		Month and Year of Meter Reading			30/10/17											
	Oct-17	Nov-17	Dec-17	Jan-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May	
Meter Readings (litre)	2378																			
Monthly Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Water Targets (litre)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Electricity Supply	Opening Electric Meter Reading Before Use			956864		Month and Year of Opening Meter Reading			30/10/17											
	Oct-17	Nov-17	Dec-17	Jan-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May	
Meter Readings (kWh)	956864																			
Monthly Totals (kwh)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Targets kwh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Gas Supply	Opening Gas Meter Reading Before Use (kWh)						Opening Gas Meter Reading Before Use (m³)						Month and Year of Opening Meter Reading							
	Jan-00	Jan-00	Mar-00	Apr-00	May-00	Jun-00	Jul-00	Aug-00	Sep-00	Oct-00	Nov-00	Dec-00	Jan-01	Feb-01	Mar-01	Apr-01	May-01	Jun-01	Jul	
Meter Readings (kWh)	0																			
Meter Readings (m³)	0																			

### Delivery Management and Control

The outline construction programme will show in principle the methods that will be adopted throughout the construction and handover process. Essentially, it enables progress to be measured by all parties, but invariably it will be supplemented with short term programmes to suit site conditions as they transpire. These will dictate material and subcontractor requirements with schedules created, verified and agreed in advance of all planned works. *Online delivery booking system to be considered. TBC*

This will enable us to achieve

- An economic construction cost.
- An optimum construction period.
- The integration of renewable energy systems into an energy efficient construction system.
- Construct the schemes in a safe and considerate manner within the sites surroundings.



## Design and procurement

Design and procurement of sub-contractors and materials will be organised to ensure that the best possible start dates are achieved and compliant with the programme to allow trades and materials to be on site as necessary. It is essential that the design programme issued to consultants ensures that the design is released in stages ensuring that the procurement of sub- contractors can be done with complete information and in order of priority.

Design development and coordination of RIBA stages 3 and 4 will allow key sub contract packages to be let to meet the demands of the programme. Consequently, it is our intention to have the design for the foundations, sub structure, superstructure, roofing,

Mechanical, Electrical and public health, windows and elevation treatments to allow the procurement of said trades to be placed as per the procurement schedule.

Our standard procurement process is employed at the tendering stage to ensure that the any one party in the supply chain can carry out the job with the correct experience, health and safety record; professionalism, human resources and financial backing. Once the contract has been awarded to supply material, labour or both; the site team then manages the on-site processes such as HS&E procedures, quality, programme and progress, ensuring continuity of works and measurement of works and remuneration.

Operations listed below are not an exhaustive list, but are the highlights of the project. All elements of work will be subject to sub-contractors detailing their method statement and risk assessments per site conditions. Their works will be carried out in accordance with said documentation and they will be audited against their programme, method statements and risk assessments. Material consolidation and off site holding areas will be considered and tbc.

## Access and Egress

As construction progresses, vehicle access onto the site will become unavailable and we propose (in agreement with Camden Highways) to suspend some of the current parking bays along Crogsland Road adjacent the site for use as an unloading bay, which we will strictly control for public safety.

As construction progresses we will install scaffolding to access the facades, which will be monarflex sheeted for safety and privacy.

We would install double gates across the site entrance which will be manned by gatemen always. This will ensure that construction traffic is taken off the public highway where possible and safely into the site area where practicable, unloaded and provide a controlled exit back onto Crogsland Road and out to Haverstock Hill.

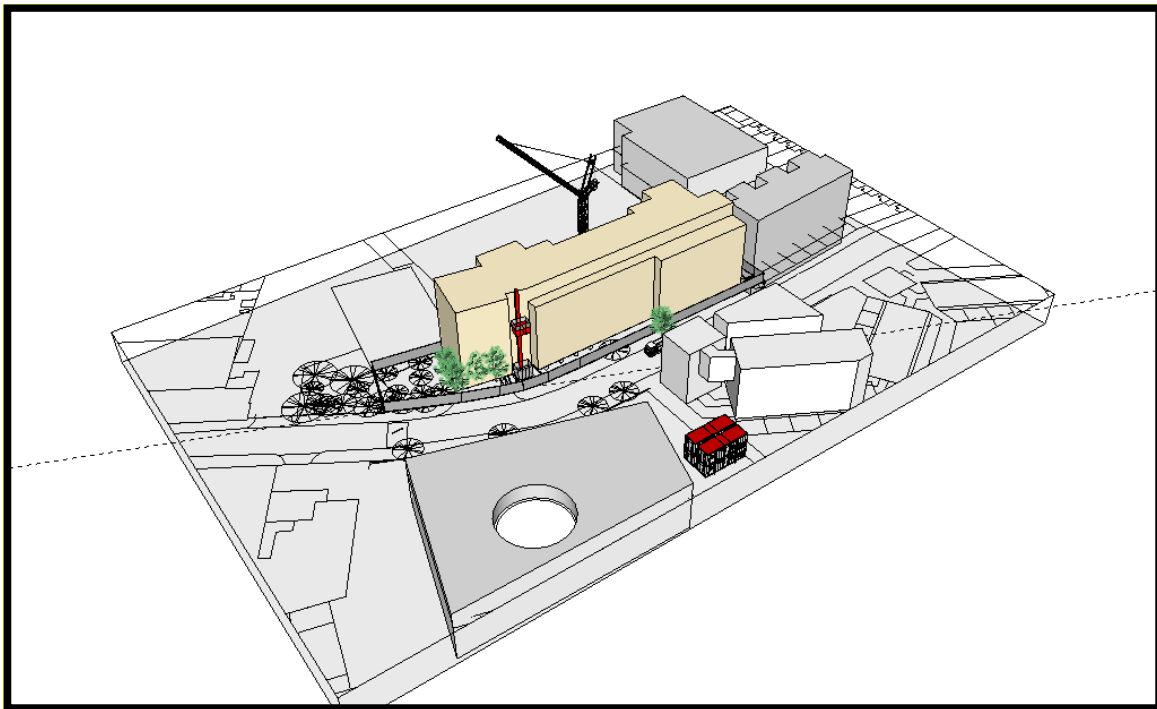
The gateman will be the first security checkpoint for all operatives, deliveries and visitors. The gateman will maintain radio contact with the Logistics Manager and Traffic Marshall to control deliveries and vehicles gaining access and egress from the site. Detailed log sheets of all arrivals and departures will be maintained. It will be critical that all deliveries are planned and co-ordinated (booked in) in advance of site attendance to manage construction activities effectively and minimise disruption.



### Site Set Up and Logistics

Vertical access to the building will be achieved by use of a tower crane, with a luffing type jib, there will potentially be an out of hours over sail of the Haverstock School boundary and counter jib overhang of boundary (the school have been provided details of this and subject to agreement with Camden). A goods hoist will be used to transport materials to the upper levels. Please note that with continuous dialogue with our contractors and specialists we aim to further develop and refine our distribution strategies.

We include below, our preliminary 3D logistics plan to give an indication of how the site will look during construction: -



Our site logistics pictorially indicate in conjunction with the Logistics Plan and SPA: -

- Indicative Construction routes
- The site boundaries, hoarding lines, gates, access points
- Security measures which will evolve as construction progresses
- Materials unloading/ delivery bays and storage areas

- Site possession stage welfare
- Main works phase site accommodation will be positioned in temporary cabins for the duration of the scheme with welfare facilities will be designed to provide sufficient space and toilets, canteen etc for the site management teams and workforce to deliver to our programme.
- Car parking for site managers/operatives will not be possible on this small site and will necessitate the use of public transport given the immediate proximity of Chalk Farm Station.
- Crane position (over sail and loading from suspended footpath (loading bays in suspended bay areas) please also see SPA.
- Façade access (Scaffold)
- Vertical transportation (Hoist)
- Parking bay suspensions required subject to agreement
- Footpath Closure Required subject to agreement

A pedestrian entrance will be formed with a single gate and will also be controlled by site reception and a biometric turnstile to ensure security. Pedestrian routes to the temporary site compound will be physically separated from the general site area. This route will be separated from the vehicle route by road barriers for safety purposes and to prevent pedestrians straying onto the site.

Welfare facilities and site offices for the principal contractor and all subcontractors will be potentially located within the boundary of the land opposite (Belmont Street) or potentially within the existing resource centre subject to approval by Camden and within a secure compound. Operatives can only access the site working areas after receiving induction training and passing through the security turnstile. Site notice boards will be displayed at the site entrance and will display the project contact details, access and egress procedure, site rules and all necessary health and safety information.

Please note that our logistics plans require further refinement upon consultation with Camden, Highways and Licensing.

### [Emergency services routes and access by third parties](#)



Access for emergency services will be via the site access routes and emergency escape routes. Local Emergency Services will be notified of the access points before work starts on site and in due time before access arrangements are relocated. A gateman permanently located at the main site entrance will ensure that safe access routes are always maintained for emergency services.



A fire brigade lock will be installed to the main gates for out of hour's access by the Emergency Services and UK Power Networks. Access through Crogsland Road for Haverstock school will be maintained always as discussed during a meeting with the Site Manager.

### Material Distribution

Sub-contractors are responsible for their own deliveries and material distribution. The sub-contractor will adhere to delivery times, using the delivery schedule managed by Galliford Try Partnerships. Any delivery which is not on the schedule at least 48hours prior to its arrival may be turned away. Materials will be stored in a location nominated by the site team and that is marked on a development plan.

As the crane is required to unload/load deliveries and distribute them around the site, hook times are to be agreed with the banksman. The banksman will be operating a daily diary and all trades are to consult him on hook times required. During the construction of the superstructure, trades cannot be guaranteed hook times because the formation of the superstructure takes precedence. Galliford Try Partnerships have no liability with the non-performance of the crane due to inclement weather and it malfunctioning.

There will potentially be tele-handlers on site which will be used to unload / load deliveries. These will predominately be unloading the materials within our site boundary where possible although they will also have to unload from Crogsland Road, depending on the delivery type (and strictly subject to prior agreement with the Local Authority). They will then manoeuvre around the site distributing the material to its correct location.

No materials will be distributed from outside our agreed parameters. The façade and structure will be fed and constructed from within the curtilage of the site and protected scaffold zones.

Materials will be distributed from the unloading areas to various loading areas on the frame or to ground /podiums for storage.

We envisage there will be a passenger goods hoist installed to the East elevation with access to all levels during construction.

Passenger/goods hoist will be situated at the base of each block to distribute materials to the relevant levels. It is likely that many of the operatives will gain access to the higher levels of the buildings via these hoists. Items such as kitchens, MEP equipment, flooring and waste will be transported via these hoists. External materials such as cladding and roofing contractors use must be distributed via the hoist and the tower crane. Access to the external envelope of the buildings will be via scaffold.

### Material Storage

The materials used for forming the sub structure will be stored on the footprint of the site in a manner that is appropriate but, under the direction of Galliford Try Partnerships site team. As the structure advances, out of the ground it will mean that there is less space for storage on the ground. The sub-contractor carrying out the superstructure must consider just in time deliveries as there is limited room to store materials on site. Where possible, materials will be stored in designated hoist flats, ground floor compound area, agreed material storage area outside of the hoarding subject to footpath closure.

### Timber storage

Timber will be ordered in a 'just in time' manner to avoid damage from the elements. Timber once delivered will be temporarily stored in racks constructed by the scaffold contractor and away from the elements. Doors and the like will be delivered and loaded out to a storage area and if possible installed straight away to avoid damage from the elements or other parties.

### Plasterboard storage

Plasterboard will be ordered in a 'just in time' fashion and will be loaded out the same day as delivery to avoid storage and damage by the elements. Plasterboard not stored correctly is prone to leaching, giving rise to the problem of paint discolouration and

subsequent costs due to additional priming agents needed to be used. This will be made clear to the sub-contractor in their order, that leaching and or damaged board due to poor delivery and storage methods will be at no cost to Galliford Try Partnerships.

### Light Gauge Steel, Cement Particle Board

Light Gauge Steel and Cement Particle Board will be ordered in a just in time fashion and delivered to site in quantities which is relevant to the working programme, so that where possible and reasonably practicable, the deliveries will be loaded out to point of use so as to minimise the amount of storage space required.

### Mechanical, Electrical and Public Health

Material deliveries will be monitored so that over ordering and excessive use of space is not an issue. Second fix items shall be loaded out as soon as they are delivered to prevent damage or theft whilst they are stored.

### Carpet

An area on the ground floor of each building will be specified so that it can be used for carpet storage and cutting, this will be indicative to site activities.

### Bathroom / Utility Cupboard Pods

The Bathroom and Utility Cupboards pods will be fabricated off site if appropriate and delivered complete ready for installation. These will be delivered in accordance with a detailed delivery schedule ensuring minimal storage is required on site. The aim is to distribute these directly up into the units. There will be a small amount of material storage that is required and this will be located within the ground floor areas ensuring they are protected always.

### COSSH including paint and cleaning materials

A COSHH store shall be kept on site in a ventilated area and shall be made fit for purpose in accordance with the Control of Substances Hazardous to Health regulations 2002.

### Site Management

We have organised the site management / project management team to allow the Contracts Manager to oversee all aspects of the project on site. He will be the main point of contact for the client and the contract administrator. The Contracts manager will



coordinate design and procurement. Direct communication and management of the project will be run through the Project manager via the Contracts Manager. As a lot of the Project manager's / Contracts Managers time will be spent dealing with design and commercial aspects, the Project manager's / Contracts Managers will be jointly responsible for executing the aspirations and the company procedures for delivering the scheme. The Site Manager will be responsible for all site management on the scheme.

The Site Manager will be responsible for the packages and will report directly to the project manager/ Contracts Manager who will have overall coordination.

### Swept Path Analysis

SPA provided as Appendices

Please note the following key observations;

- Rigid Vehicle access only North Crogsland Road
- Width restriction to South Crogsland Road and cycle lane present
- Crogsland Road is a two-way street, albeit motor vehicles can only enter from Prince of Wales Road. Crogsland Road is also a local cycle route in both directions and cyclists can enter from Chalk Farm Road / Haverstock Hill and Prince of Wales Road.
- Parking Bay suspensions and Footpath closure required and TBC with Camden.
- Wheel wash facilities will be employed when appropriate and additional measures will be employed as necessary (drain covers/ protective mats).

### ➤ **Highway interventions**

- **Please note TTO likely to be required and subject to agreement with Camden**
- **Footpath Closure as above**
- **Crane over sail of footpath and Out of Hours over sail of Haverstock School**
- **Parking Bay Suspensions Required as above**

# Environment

## Noise/ Nuisance Management

Operations that generate noise will predominantly be associated with the enabling and substructure phases of our works including excavating, piling, breaking down pile caps to form capping beams and works associated with the frame erection including concrete pumping, cutting of reinforcement and any drilling activities. Further; items of plant such as generators, excavators and pneumatic rollers will also generate noise.

Operations that generate noise will be carried out in accordance with site operating hours and as per the Construction management plan. Activities generating noise and vibration and involve either manual handling or exposure will be limited as per policy and guidelines for use. The Site Management team at Charlie Ratchford will aim to keep noisy activities to a minimum and mitigate the environmental impact of nuisance activities.

## Key site activities: -

### Enabling works

It is anticipated that on week 1 Galliford Try Partnerships will secure the site to allow proceeding sub-contractors to set up hoarding and temporary site accommodation and welfare facilities. During this period, we will also be carrying out any services diversions, isolations and lowering works. This will be done in careful liaison with utility companies.

The site will be secured with hoarding and will facilitate the signage/advertising required by the client throughout the development. Sets of gates will be set up in suitable locations to allow for vehicles access and egress. Viewing portals will be situated along the hoarding to provide visibility for residents so that our works are transparent. It is anticipated that the crossover works for the scheme will be completed early in the project.

Liaison and agreement with Camden will be required to seek comment/approval to use Crogsland Road for the duration of the works to enable safe working access and deliveries onto the site area, off the highway and to suspend the footpath and required parking bays to maintain sufficient vehicle access/ security will be set up at the earliest opportunity to deter any unauthorised visitors and encourage a level of security. Relevant health and safety notices, construction information and third party information such as CCS will be displayed at prominent positions on the hoarding.

The hoarding, notice boards and CCTV will be maintained throughout the contract by site staff on a regular basis. A Galliford Try Partnerships engineer will set out the main grid/stations and the sub-contractors engineer will then set out lines and levels. The entire area will be CAT scanned with a generator for services. Scanning will be undertaken in a zig-zag fashion perpendicular to the trenches and reference will be made to existing service drawings. Any locations will be sprayed on the ground and marked in the drawing with survey reference. Once services have been removed, we will asbestos survey any remaining structures, soft strip and demolish all unrequired hardstanding's. It is likely we will crush and stockpile concrete and masonry arisings to a grade suitable for re-use across the site during the works for piling mat etc.

### Substructure works

The pile mats will be formed in increments of 150mm layers using the material that has come out of the crushed arisings and imported fill. The design of the pile mats will be in accordance with the piling sub contractor's design. The material will be spread evenly with the 360 diggers and tracked across. The mats will then be compacted with the appropriate compaction roller to the prescribed number of passes to each layer of crushed concrete. This process will be repeated until the relevant depth and bearing capacity has been achieved. A banksman will control vehicular movement and the sub-contractor will manage the physical barrier in line with the traffic management plan.

Following the formation of piling mats. Galliford Try Partnerships will provide the main setting out grid/stations and the sub-contractor will then set out each pile in advance of the piling rig moving into position. Galliford Try Partnerships will undertake the relevant quality assurance checks to make sure that the piles have been set out correctly. Piling will then commence. A banksman will guide the piling rig so it moves into location and sets the auger over the pin indicating the location of the centre of the pile. The banksman will signal the rig driver to lower the auger to ground level. The piling rig driver can then commence boring to the required depth.

Depending on the type of piling the concrete will be pumped via the piling rig or a separate concrete wagon will discharge concrete into the pre-formed hole. A 360 machine will be in attendance under the control of a banksman to remove the spoil and or concrete once the rig has reached the desired depth. The reinforcement cage is then inserted in position manually whether it is lifted by machine or by operative. An operative or machine will then push the reinforcement into the wet concrete either by stepping on the helical bar or the 360-machine bucket pushing the top of the reinforcement cage. The reinforcement cages will be assembled on site in a separate area segregated away from the main works.

Reduce level dig will then commence when a permit to dig has been issued. A 360 machine will commence excavation. A banksman will be in attendance controlling the movements of the machine and the extent of the excavation. If any services are unearthed they will be supported and protected as necessary. The ground will be reduced in increments to avoid low/high spots. If water is encountered, then a trench will be formed and water pumped from it and disposed of appropriately. It is anticipated that all spoil will be loaded straight into 15m<sup>3</sup> wagons for removal off site.

When the piles are cured, and tested for integrity, they are then reduced to the correct level to be then formed with pile caps. The ground will be excavated around the piles and blinded with concrete. The piles will be marked to the level required. An operative will grind a mark on the pile with a circular saw to facilitate the breaking down to the correct level process. DE bonding sleeves will cover the rebar to coincide with the level of the pile where it needs to be reduced in height to aid with the process and keep the pile integrity intact. A pneumatic pile splitter will be attached to a 360 machine which will be placed over the top of the pile to the marked level. This will then squeeze the concrete off the reinforcement cage. The last final trimming will be carried out with a hand-held air breaker. Operatives carrying out the breaking down of the piles will observe hand arm vibration regulations. The rebar will be cut to the correct length to ensure the lap required for when it is tied into the foundation is sufficient by design. Pre-fabricated reinforcement cages will then be lifted into place by means of the 360 machine or the tower crane. Reinforcement for pile caps will be formed in a designated area away from the location required. Slabs reinforcement will be formed insitu. Cage for pile caps will be surrounded by sacrificial formwork and backfilled to hold them into position.

The choice of concrete placement will depend on the access to areas; however invariably the method used will be via a conical skip. Concrete wagons will discharge concrete into the conical skip, the conical skip will be lifted either by the 360 diggers or