the crane and lifted into position above the reinforcement. The concrete will then be discharged into the element that is being cast to the correct structural level. When the building foot print is formed, the concreting process must be executed from the unloading area into conical skip or a concrete pump with static lines. At all times this operation will be controlled by a banksman. The same method will be applied to the formation of the lower ground slabs.

Superstructure works

The crane will be instrumental in the formation of the basements and superstructures as they will manoeuvre all formwork, reinforcement and concrete into position. Vertical elements such as columns, walls, core and shafts will be formed using the same method as listed above. Pre-formed shutters will be fixed into position and rebar will be placed against the shutter. Work at height equipment will be by means of an aluminium tower. For some elements access equipment, will be part of the pre-formed shutter. Depending on the nature of the super structure design, some elements may be pre-cast and brought to site ready-made and fixed into position as necessary. Repetitive column types, core walls and staircases are highly likely candidates. The use of these will depend on the conditions laid out in the employer's requirement and structural engineers specification and will be subject to the approval process.

A decking system will be used to support the slab reinforcement. The process of forming the slab will be carried out in the same way as the other concrete elements. It is anticipated that a level will be turned around every 3 ½ weeks, dependant on weather. When the concrete has reached the designed strength, the formwork will be released to allow it to be manually struck and used elsewhere on the formation of the superstructure. The slab is supported temporary using acrow props until it reaches full strength. This process will be repeated in accordance with the structural engineer's design until the required height and structure has been achieved.

At certain stages through the sub and superstructure sequence, hold points will be adhered to carry out HS&E, quality assurance checks and these will include all aspects covered by our inspection and test plan and safety procedures for this element of work.

Internal fit out works

The internal fit out will be conducted by many sub-contractors undertaking several disciplines. It is considered that the light gauge steel and outer board, screed, partitions and plastering will be carried out by one contractor who will have design responsibility for the light gauge steel. Mechanical, electrical and public health will be carried out by one sub-contractor who will have design responsibility. A carpenter will carry out all

the first and second fix of door frames, doors, architrave and skirting. A kitchen manufacturer will be employed to supply and fit kitchens. Other sub-contractors will be employed to carry out the installation of flooring, tiling decorations etc….

The internal fit out will commence as soon as the floor slab is clear of temporary back propping. Party and partition walls will be set out by Galliford Try Partnerships engineer to enable the carcassing of ventilation, public health pipe stacks, and mains cable runs to be installed prior to partitions. Timber sole plates for party walls will be introduced after M&E carcassing. Under floor heating (if required) and screeding will be carried out followed by partitions. It is thought that this sequence provides the best M&E installation, reducing clashes with other services and partition walls and ensures robust fire stopping.

The internal fit out sequence will more than likely take place in batches of apartments per week which will be confirmed on the construction programme. Each operation/ trade discipline will be given a period (circa 1 week) to complete the works to a batch of apartments. Once this is complete the operation is repeated in the next batch of apartments the following week. This approach provides continuity of work for the trades and we believe that it is the optimum way to complete many apartments using this rolling format. Apartments where hoists are located will be held back at plastering stage until most kitchens have been loaded out and then they will join in the apartment fit out sequence at the end of the programme. Following the fit-out duration there is a period for client snagging and sign off. Handover of blocks will be done per block once all the finishes are complete to apartments and communal areas ensuring all services have been tested and commissioned and third party sign offs are achieved.

At certain stages through the internal fit out, hold points will be adhered to carry out quality assurance checks and sign offs and these will include all aspects of covered by our inspection and test plan procedures for each trade.

External works

An external works sub-contractor will attend site to carry out the hard and soft landscaping works under their method statement and risk assessment in accordance with our programme and sequence of handovers to ensure the site is complete in terms of paving, planting and public realm works.

Road works carried out under S278 agreement by licensed street works sub-contractor and strict traffic/pedestrian management procedures to ensure public safety and minimise disruption.

Please Note a Noise Impact Assessment was carried out on :

08/01/2015: NIA (Noise Impact Assessment: Ramboll/ EC Harris)

Predicted Noise and Vibration levels

Noise and Vibration monitoring will be carried out during the construction phase as standard and mitigation measures employed as per guidance contained British Standard documents and particularly parts 1-5. GTP will also ensure guidance in respect of permanent installations and identified in Ramboll NIA is met.

6.1. Operation Noise Assessment – Residential Amenity

6.1.1. In order to protect the residential amenity the glazing should achieve at least R_w 33dB and the external façade excluding the glazing R_w 50 dB. In addition a natural ventilation strategy is not appropriate and mechanical ventilation is to be implemented.

6.2. Operation Noise Assessment – Plant Noise Assessment

6.2.1. The following mitigation measures should be taken into account by the design team at the detailed design stage:

- Where possible, installing the fixed plant internally;
- Selection of low noise emission plant;
- Use of enclosures, acoustic louvres and acoustic barriers;
- Selection of appropriately sized attenuators; and
- Operating plant installations at reduced duty during night-time periods.

6.2.2. It is recommended that the noise levels from fixed plant installations should be considered once details of the building services plant are known and it is therefore suggested that noise emissions from plant associated with the proposed development are controlled to protect residential amenity.

The following activities and respective audible noise levels and controls will need to be in place to lower the levels to an acceptable level. Audible levels should be 80-85dB however specific construction works can be greater. Please note these levels will be considerably decreased in respect of distance to the boundary and receptors and the presence of structures and hoarding.

Concrete pours are generally the audible noise from the diesel pumps, these can be up to 102dB

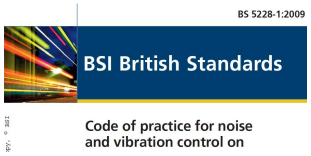
Pilling on site can be between 75dB to a max of 95Db.

The generators will depend on the size; most generators will be about 90dB to 98dB however we can have dual power generators that change to battery through the night to reduce the noise

Ground works, as there are a lot of items being carried out and will depend on the machines being used. The loudest noise is from a petrol saw which can create 114dB however this is short duration works and again control will be put into place. On average 20T excavators can create 102dB when in use.

Controls that will be needed will include the hoarding which will act as an acoustic barrier, we can use acoustic panels around generators, audible noise will be limited to hours set out in the planning conditions,

Other controls are regular monitoring at designated places around the site agreed with the client.



BS 5228:2009

All Site Management Staff are fully trained in respect of Building Standards and Approved Codes of Practice documents associated with Noise and Vibration Control on Construction Sites. The relevant documents are available for download via the Galliford Try Portal.

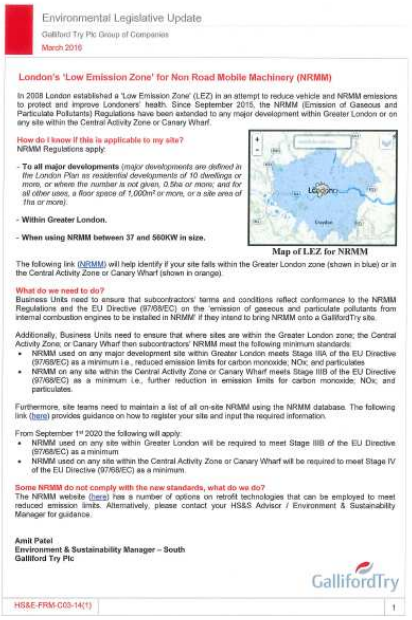
Links and references to these documents including implementation guidance and GTP procedures to comply are contained within the Site Construction Environmental plan, Environmental Nosie monitoring guidance, Nuisance Management guidance documents.

All Site Management staff receive further training in the form of Environmental Awareness training and hold appropriate construction related qualifications including and not limited to Degree level study, CSCS, SMSTS Qualifications.

Dirt and Dust

Reduction in dust pollution and other airborne debris will be achieved by: -

- Establishing air quality procedures to minimise dust generation and control plant and vehicle exhaust emissions. All sites will comply with NRMM Regulation Requirements as detailed in BU update below and will register all Non-Road Mobile Machinery on the database. Please also see below location of Project within London's Low emission zone.



Environmental Legislative Update

Galliford Try Plc Group of Companies

March 2016

London's 'Low Emission Zone' for Non Road Mobile Machinery (NRMM)

In 2008 London established a 'Low Emission Zone' (LEZ) in an attempt to reduce vehicle and NRMM emissions to protect and improve Londoners' health. Since September 2015, the NRMM (Emission of Gaseous and Particulate Pollutants) Regulations have been extended to any major development within Greater London or on any site within the Central Activity Zone or Canary Wharf.

How do I know if this is applicable to my site?

NRMM Regulations apply:

- **To all major developments** *(major developments are defined in the London Plan as residential developments of 10 dwellings or more, or where the number is not given, 0.5ha or more; and for all other uses, a floor space of 1,000m² or more, or a site area of 1ha or more).*
- **Within Greater London.**
- **When using NRMM between 37 and 560KW in size.**

Map of LEZ for NRMM

The following link (NRMM) will help identify if your site falls within the Greater London zone (shown in blue) or in the Central Activity Zone or Canary Wharf (shown in orange).

What do we need to do?

Business Units need to ensure that subcontractors' terms and conditions reflect conformance to the NRMM Regulations and the EU Directive (97/68/EC) on the 'emission of gaseous and particulate pollutants from internal combustion engines to be installed in NRMM' if they intend to bring NRMM onto a GallifordTry site.

Additionally, Business Units need to ensure that where sites are within the Greater London zone; the Central Activity Zone; or Canary Wharf then subcontractors' NRMM meet the following minimum standards:

- NRMM used on any major development site within Greater London meets Stage IIIA of the EU Directive (97/68/EC) as a minimum i.e., reduced emission limits for carbon monoxide; NOx; and particulates
- NRMM on any site within the Central Activity Zone or Canary Wharf meets Stage IIIB of the EU Directive (97/68/EC) as a minimum i.e., further reduction in emission limits for carbon monoxide; NOx; and particulates.

Furthermore, site teams need to maintain a list of all on-site NRMM using the NRMM database. The following link (here) provides guidance on how to register your site and input the required information.

From September 1st 2020 the following will apply:

- NRMM used on any site within Greater London will be required to meet Stage IIIB of the EU Directive (97/68/EC) as a minimum
- NRMM used on any site within the Central Activity Zone or Canary Wharf will be required to meet Stage IV of the EU Directive (97/68/EC) as a minimum.

Some NRMM do not comply with the new standards, what do we do?

The NRMM website (here) has a number of options on retrofit technologies that can be employed to meet reduced emission limits. Alternatively, please contact your HS&S Advisor / Environment & Sustainability Manager for guidance.

Amit Patel
Environment & Sustainability Manager – South
Galliford Try Plc

GallifordTry

HS&E-FRM-C03-14(1) 1

This map shows the area of the Non-Road Mobile Machinery (NRMM)

- Undertake air quality sampling to ensure that we are not impacting on the existing air quality levels as per Camden requirements TBC.
- Ensuring that all materials transported to and from site are in enclosed containers or fully sheeted.
- Ensuring stock piles of topsoil etc. are kept below hoarding heights and kept damp in dry windy conditions. Once weeds and grass have grown again on the piles this will reduce the risk.
- Damping down during dry periods. Ensuring materials have a minimum of packaging.

- Ensuring all polystyrene and similar lightweight materials are weighted down.
- Making sure all dust generating materials are adequately packaged.
- Ensuring all vehicles leaving the site have received a jet wash and wheel clean and that loads are covered where spoil or demolition material is being removed.
- Providing regular road cleaning using road sweepers or brushes to control dust and mud.
- Keeping the loading drop heights of spoil into Lorries as low as possible.

Noise and Hearing Protection zones

A noise meter will be kept on both sites always to check noise levels at the site boundaries during certain operations. Inside the sites, and closer to noise sources, hearing protection zones will be set up, where hearing protection must be provided and worn if noise levels reach 80 – 85 Db.

Careful planning and use of appropriate plant and equipment normally keeps these requirements to few and very short periods.

Please also refer to previous sections and Appendices for Noise, Vibration and dust

Air Quality Risk Assessment

Please see below extract from AQA Assessment Intended Ramboll/ EC Harris November 2014 LOCAL AIR QUALITY ASSESSMENT. Site identified as presenting a predominantly low risk during all phases, and medium risk during Earthworks.

6.1.11 There are no nationally or internationally designated ecological sites within 500m of the application site that may be sensitive to increased dust deposition.

6.1.12 The sensitivity of the area surrounding the development was determined to be 'High' for dust soiling and health effects in line with IAQM Guidance.

Assessment of Potential Impact

6.1.13 The risk of potential air quality impacts from demolition, earthworks, construction and trackout (the transport of dust and dirt from the site onto the public road network) was assessed according to guidance developed by IAQM. The summary of risk effects before mitigation was determined to be 'Medium' risk for earthworks and 'Low' risk for demolition and construction, as shown below in Table 9.

Table 4 Summary Risk of Dust Effects with no Mitigation

Source	Dust Soiling Effects	Ecological Effects	Human Health Effects
Demolition	Low risk	N/A	Low risk
Earthworks	High risk	N/A	Medium risk
Construction	Medium risk	N/A	Low risk
Trackout	Medium risk	N/A	Low risk

6.1.14 On the basis of the determined level of risk and sensitivity of the area, the overall significance of the effects was deemed to be not significant with mitigation in place. This impact will also be short term and temporary for the duration of the construction phase.

Construction Vehicles

6.1.15 The maximum number of construction vehicles anticipated to visit the application site during the construction phase will be lower than the 200 HGV movements per day that EPUK Guidance[29] states when an air quality assessment for construction vehicles would be necessary. Therefore this has been scoped out of the assessment.

London Plan

London Plan Supplementary Guidance and specifically Pgs. 88-93 GLA mitigation measures checklist have been reviewed. Most points raised are carried out by GTP as standard. Real-time dust monitoring and locations to be discussed and agreed with Camden. Site termed predominantly Low-Risk by AQA and medium risk for a short period.

Ground Conditions and Contamination

Per the ground assessment report (Charlie Ratchford Extra-Care Scheme, Crogsland Road, Camden Phase 1 and Phase 2 Ground Condition Assessment) there is presence of a small volume of Made Ground within the site as identified below.

Groundwaters The measured concentrations of potential contaminants, as summarised on **Table 2**, are below the selected assessment criteria for assessing potential groundwater impacts on surface waters and generally below the UK drinking water quality standards. The exceptions included elevated concentrations of sulphates and slightly elevated concentrations of selenium and ammoniacal nitrogen. It is expected that the elevated concentrations of sulphates result from the solution of natural minerals present within the soils on the Site. A specific reason for the marginally elevated concentrations of selenium and ammoniacal nitrogen is not known but it is just as likely to reflect the background quality of the groundwater in the vicinity of the Site owing to the general urban environment, as any contamination actually arising from the Site. As such the measured concentrations do not in themselves represent a particular concern for the proposed development.

6.1.4 Off Site Disposal

For the soil samples analysed, the measured concentrations of potential contaminants are generally below the assessment values appropriate for a residential land use. As such, the natural soils on the Site are not likely to contain significant concentrations of contaminants and in accordance with the criteria set in Part 3, of the Landfill (England and Wales) Amendment Regulations 2004, the natural soils at the Site are likely to be classified as inert waste.

With regard to the Made Ground, this material may contain slightly elevated concentrations of potential contaminants. If this material is to be disposed of or re-used off-site then discussions with the Landfill Operator and further testing, including Waste Acceptance Criteria (WAC) testing, may be required to determine the actual classification of the material to be disposed of off-site.

Complaints

Galliford Try take complaints very seriously and have procedures in place to respond to all complaints in an efficient and pro-active way. Please see below examples of documentation and guidelines for our site teams within our quality control documentation to enable swift and effective resolution to the satisfaction of the complainant.

Documentation

- FM-QAM-241 Improvement Report
- Register of Complaints - FM-QAM-251 Improvement Plan or similar
- H&S complaints - HS&E-FRM-C03-04 Notification of Enforcement Authority Contact / External H&S
- Complaint
- Environmental related complaints - HS&E-FRM-A01-02 Environmental Incident Report Form
- Other complaints - FM-QAM-261 Complaint Record

Please see further information below in respect of how the site is managed in a considerate manner in addition to on site facilities provided as standard.

Induction / Site rules /consultation

Every person who enters the site will receive a specific project induction from Galliford Try Partnerships site management before they can leave the compound/office area and commence work on site.

Inductions will introduce the project with a description of the project risks and a review of the individual's competency. An Occupational Health Questionnaire must be completed by all operatives as part of the site induction process. Site inductions in languages other than English where appropriate will be provided and site signage is multi lingual to assist in communications.

Site access passes will only be distributed following site induction by Galliford Try Partnerships management personnel. All site operatives and visitors will be inducted prior to commencement on site in a clearly defined facility without exception.

- Induction talks for operatives new to the site will include site rules which cover among other things:
- Behaviour toward others on site and nearby
- Drugs and alcohol
- Smoking areas
- PPE and safety issues
- Welfare facilities and use of
- Security issues

- Emergency procedures
- Good and bad practice
- Considerate Constructors requirements and good neighbourliness

Regular consultation meetings will be held with the workforce to assess safety performance on site and review where improvement can be made. These meetings will be open to all on site, in addition to this we will actively encourage the use of a 'comment box' so that site observations can be forwarded and actioned in a confidential manner. Regular 'tool box talks' are to be undertaken by Galliford Try Partnerships and sub-contractors alike.

Health Safety and Environment

To minimise risk and control exposure, our Health, Safety and Environmental (HS&E) Department will give advice at planning stages on all activities and all HS&E requirements. HS&E is diligently monitored throughout our projects and reported to the main board.

Galliford Try Partnerships treats safety as a highest priority and has developed a successful programme of initiatives to improve awareness and performance on all our projects. Great results have been achieved by actively encouraging site operatives to think in a manner that assesses personal safety and the safety of others, not only on site but also throughout their lives.

The layout of the site accommodation ensures that all staff, visitors and operatives will have the ability to store and retrieve the correct PPE before entering the construction areas. Staff will operate the HS&E policies and procedures to all aspects of the build. Copies of the policies and procedures are available on request.

Fire/ Evacuation Procedures

Galliford Try Partnerships will formulate a specific fire/evacuation plan based on the information yielded from the fire risk assessment and the Construction Fire Safety Plan as described in our company's procedures ref HS&E-FRM-F01-01 and 02 respectively. Staff will be trained to become fire marshals so that the plan can be executed. Office accommodation, welfare facilities and the construction site will be fitted with the relevant fire safety equipment such as fire alarm panels, heat/smoke alarms and fire extinguishers. The evacuation point is to be designated as soon as vacant possession of each site is available.

First Aid

The majority of Galliford Try Partnerships site management are qualified first aiders and as a company, we strive to increase the percentage of competently trained site staff. The site will have first aid attendance always. We also expect subcontractors to provide their own first aiders. All first aiders will have clear identification on their hard hats.

Plant and Equipment

Plant hirers will be requested for the whole body vibration levels of equipment they provide and these levels should also be recorded on the Vibration Register V01-04 along with the duration of operation by the operator and the frequency of maintenance required. Checks will be made that the plant selected is the best available option and is suited to the terrain and the task. Checks will be made that the plant has been subjected to regular maintenance and plans are in place to ensure regular maintenance continues whilst the vehicle is on hire.

Checks will be made that the plant selected is the best available option and is suited to the terrain and the task. Checks will be made that the plant has been subjected to regular maintenance and plans are in place to ensure regular maintenance continues whilst the vehicle is on hire.

NRMM Statement

a) Construction time period (mm/yy - mm/yy): TBC :

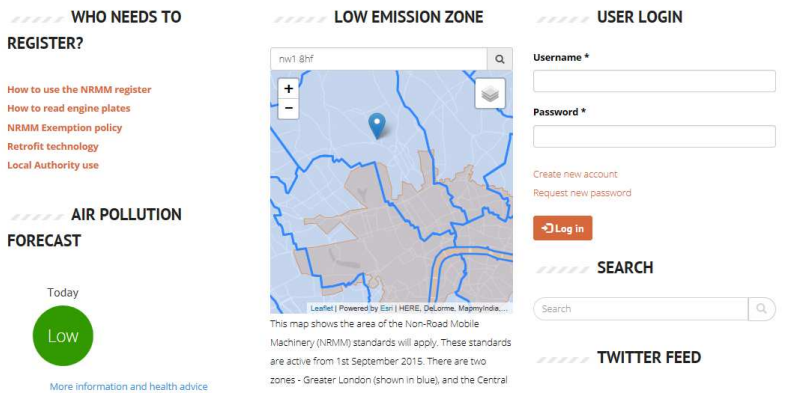
b) Is the development within the CAZ? (Y/N): No please see diagram below

c) Will the NRMM with net power between 37kW and 560kW meet the standards outlined above? (Y/N): Y

d) Please provide evidence to demonstrate that all relevant machinery will be registered on the NRMM Register, including the site name under which it has been registered: TBC

e) Please confirm that an inventory of all NRMM will be kept on site and that all machinery will be regularly serviced and service logs kept on site for inspection: Yes

f) Please confirm that records will be kept on site which details proof of emission limits, including legible photographs of individual engine plates for all equipment, and that this documentation will be made available to local authority officers as required: Yes



Agreement

The agreed contents of this Construction Management Plan must be complied with unless otherwise agreed in writing by the Council. This may require the CMP to be revised by the Developer and reapproved by the Council. The project manager shall work with the Council to review this Construction Management Plan if problems arise in relation to the construction of the development. Any future revised plan must be approved by the Council in writing and complied with thereafter.

It should be noted that any agreed Construction Management Plan does not prejudice further agreements that may be required such as road closures or hoarding licences.

Please notify that council when you intend to start work on site. Please also notify the council when works are approximately 3 months from completion.

Signed: ……C..Jackson (GTP)……

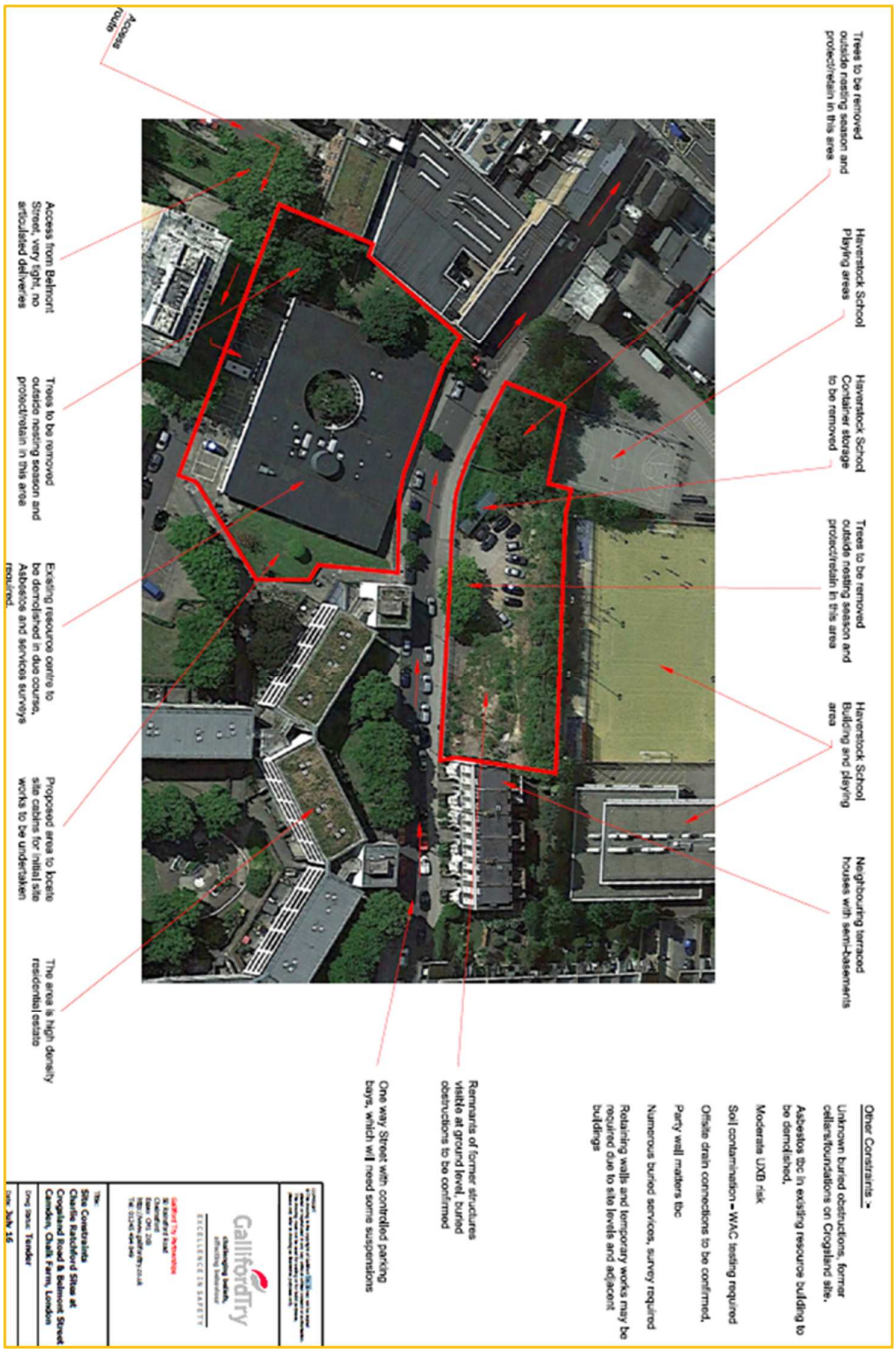
Date: ……12/11/18……..

Print Name: ……Christopher Jackson……..…..

Position: ……Site Manager……

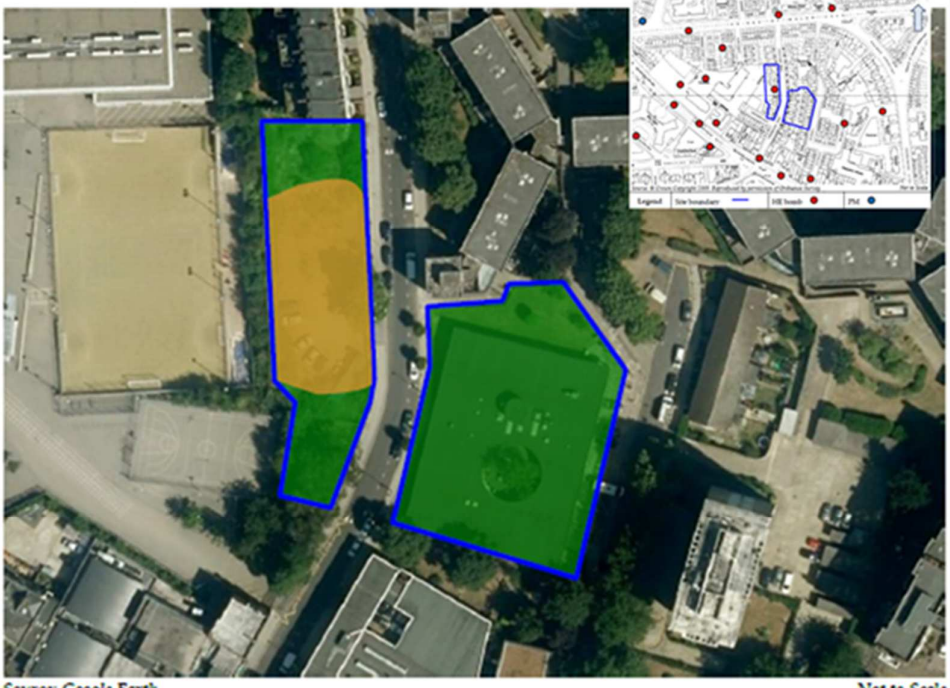
Please submit to: planningobligations@camden.gov.uk

Appendix 1: Site Study



Appendix 2: Extract from Zetica ref: Zetica Ltd – Report No. P4808-14-R1-A

Figure UXO hazard zone plan of the Site



Source: Google Earth *Not to Scale*

Legend	Very Low	Low	Moderate
	High	Very	

Table 4 Risk mitigation for assumed Site activities

Hazard Level	Typical Future Activity on the Site			
	None	Shallow Excavations (<1.0m)	Deep Excavations (>1.0m)	Boreholes or Pile Construction
Very low	Ensure suitable records and procedures are in place to highlight the risk should future development be planned.	Ensure site staff, are informed as part of the site safety induction that the potential presence of UXO cannot be discounted. Appropriate action is required to be detailed within site procedures.	Ensure site staff, are informed as part of the site safety induction that the potential presence of UXO cannot be discounted. Appropriate action is required to be detailed within site procedures.	Ensure site staff, are informed as part of the site safety induction that the potential presence of UXO cannot be discounted. Appropriate action is required to be detailed within site procedures.
Low	As very low.	As very low. + It is considered prudent to include some UXO awareness training in site inductions.	As very low. + It is considered prudent to include some UXO awareness training in site inductions.	As very low. +Clearance certification for borehole or pile locations would be considered prudent only if a zero tolerance to risk is adopted.
Moderate	As very low.	As very low. +Non-intrusive investigation methods considered prudent where practical. +EOC Operative supervision is considered prudent.	As very low. +Non-intrusive investigation methods considered prudent where practical. +EOC Operative supervision is considered prudent.	As low. +Clearance certification for borehole or pile locations would be considered essential.