213-215 Warwick Road
London, W14 8PU

Baseline Construction Method Statement
Planning Condition 16
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1. Introduction

This Method Statement covers construction works related to the substructure of Kensington Row. All works undertaken on this development will be in accordance with all relevant statutory H&S, Building Regulations, Codes of Practice and London Best Practice Guidance.

1.1. Basement Construction

All design information given in this report is given for information purposes, and is to be considered as preliminary information. All design information given will be revised to suit the final design requirements. Excavation levels given are approximate and may alter as the basement design progresses.

The works will be subject to a competitive tender and the construction methodology and programme timetable may vary, however all principles of health, safety and protection of the public outlined in this document will be maintained.

The two storey basement will be formed within a secant piled retaining wall from ground level. The formation of the retaining wall above this level will be reinforced concrete within temporary works retention as necessary. The basement walls are propped by the basement floor slabs in the permanent condition; however the design of the basement walls will also be governed by the temporary condition where the wall will cantilever and/or be propped at greater centres than the permanent condition in order to facilitate construction.

1.2 Existing Site Description & Features

The site is located within the administrative boundary of the Royal Borough of Kensington and Chelsea (RBKC) and comprises a 0.55 ha plot between Warwick Road and a railway line.Bounding the site to the north is a vacant area of private land. A large hardware store forms the southern boundary of the site. The existing site comprises three large low rise blocks and associated outbuildings. The administrative boundary of London Borough of Hammersmith and Fulham (H&F) lies immediately adjacent to the southwest extent of the site.

Warwick Road (A3220) is a busy one-way route along the east boundary of the site. Warwick Road joins Kensington High Street, which run east-west approximately 150mm to the north. The road network in the area contributes to ambient dust levels. The West London Line to the west of the site uses an electric train fleet but is also used by diesel freight trains which contribute to ambient dust levels.

The nearest running lines affected by the works belong to Network Rail and close liaison with them will be undertaken to achieve full approval of Forms A & B (for permanent works) and Form C9 (for Temporary Works) prior to any works being carried out in this proximity. Network Rail have already been informed of the works and meetings have taken place in anticipation of agreeing a BAPA for the basement construction works.
2. Design Strategy

2.1. Basement Retaining wall Strategy

This document provides the strategy for the demolition and construction of the substructure and basement of Kensington Row (KR) subject to Homebase (HB) Vacant Possession (VP) on 30th June 2014.

The perimeter wall design is based on deflections, water retention and buildability, the optimum design is based on a CFA bored Secant Pile retaining wall system installed at the existing ground level.

The secant wall consists of interlocking bored piles. Primary (female) piles are constructed first using a ‘firm’ concrete / bentonite (commonly 10N/mm²). Secondary (male) piles, formed in structural reinforced concrete, are then installed between the primary piles with a typical interlocking of 150mm.

Two types of secant wall have been considered, propped and cantilevered.

2.1.1. Propped Secant wall solution – Designed toe level (5.5m AOD)

Ideally used where the criteria of deflection is not critical due to adjacent boundary conditions such as the Network Rail / LUL boundary often limiting the deflections to approximately 20mm and the former TA site.

Typically installed Secant pile retaining wall propped at capping beam level.

This method will be used on the majority of the site, cantilevered will only be considered if a section of the site is identified as not requiring a minimal deflection criteria.
3. Pre-Start Activities

3.1. Introduction

Site establishment commenced with demolition on the 09th December 2013. Demolition will proceed from Warwick Road toward the Network Rail boundary. This will allow the maximum amount of time for the BAPA (to be done piecemeal) to be finalised with NR. Demolition notices will be served prior to commencement of demolition including a demo notice on the current substation which needs to be served two months ahead of demo.

- The works planned for the construction of the basement structure and related works will be executed in an efficient, safe and least disruptive manner.
- The health and safety of the general public, nearby residents and the project workforce will be considered at all times.
- St Edward will minimise the environmental impact of local areas affected whilst gaining access to the development.
- Hoarding will be placed around the site to minimise dust impacts on the surrounding area.

3.2. Licenses, Statutory Consents & Surveys

Prior to works commencing the following must be planned and in place:

- Appointment of CDMC in accordance with CDM Regulations
- Form F10 Notification
  Health & Safety Executive (HSE) statutory requirement for all construction sites as a requirement of the Construction, Design & Management (CDM) Regulations 2007.
- Notifications and Approvals with Network Rail Ltd.
  Due to proximity of the works (temporary and permanent) to the Network Rail running lines, and the use of plant such as cranes and piling rigs the potential for risk posed to Network Rail assets are significant and therefore a safe and well considered methodology and construction proposal acceptable to NR is essential for the works to progress.
  Prior to any works being undertaken St Edward Homes Ltd are required to submit Work Package Plans for approval
- Consultation with Transport for London (TfL)
  With traffic flows potentially increased in the area due to muck shift, material deliveries, waste removal etc, consultations will be held with TfL based on proposed Traffic Management Plan.
  The St Edward Homes Site Management teams are in regular dialogue with both RBKC Highways department and Transport for London. Any observations and requirements that maybe highlighted are being addressed by site management.
  In addition St Edward Homes have become an associate of the TFL FORS (Fleet Operator Recognition Scheme) strategy and as a contractual requirement all contractors have to gain FORS Bronze membership and adhere to TfL requirements.
- Notification of 3rd parties
  Third parties including neighbours will be consulted as necessary to discuss such issues as party walls and oversail / trespass of tower cranes.
- **Notifications to Statutory Authorities**
  Any works close to or within the legal easement of statutory services or any diversions that may be required including license applications to Thames Water to obtain temporary discharge license in nearby sewers.

- **Notification to Metropolitan Police, Fire Brigade and British Transport Police**
  Liaison with key emergency services to brief all involved on the risks and the nature of the works for the duration of the project.

- **Neighbourhood Liaison**
  It is critical that all local residents and businesses suffer the least disruption to their daily life as possible, to achieve this we feel it is essential to notify residents, local businesses, schools and colleges of the key elements of works that might affect their day to day activities and help us help them to keep the disruption to an absolute minimum. Regular consultations with key resident groups will be organised to allow the principal contractor to clearly inform the local residents and at the same time allow them to voice any concerns and help reduce them where possible.

- **Acoustic, Dust and Vibration Monitoring**
  Baseline monitoring has been carried out for the background noise and dust levels. Monitors will be established on site to record ongoing noise, dust and vibration levels to assess potential impact of the operations and provide limiting factors in which to manage the environmental impacts of the works. This will be documented in a Section 61 agreement with the RBKC.

- **Party Wall / Basic Asset Protection Agreement (BAPA)**
  Party wall notices of one month period are to be served to HB, Network Rail and Former Territorial Army (FTA). TFL will be notified that works commenced 09th December 2013. UK Power Network (UKPN) will be served a 2 months party wall notice to keep in line with legal requirements.

- **Temporary Road Closures**
  Road closures are not anticipated however they may be required in order to establish and remove the tower cranes or to deliver large items or building plant and infrastructure items. This will be agreed with TfL in advance. Notices regarding any planned closures and diversions of either roads or footpaths shall be given to RBKC, Bus Companies, TfL, the police, fire brigade and other emergency services.

- **Road Traffic**
  New highways will be constructed internally to the site boundary utilising existing and new junctions. The roads will be constructed early to provide construction site access and egress.
Construction Routes and Access

Routes for construction traffic involved in the delivery of goods and materials to and from site will be agreed with SEHL, TfL and other necessary authorities preceding each reserved matters application for a construction phase.

It is proposed that the construction vehicle movements would be restricted to the main arterial routes and specific arrangements will be required to ensure vehicles do not pass through predominantly residential areas, where possible.

The most appropriate routes for construction traffic are main Transport for London Road Network (TLRN) Routes to access the site; these would be via the Warwick Road.

Movements of larger or abnormal loads will be addressed in advance with RBKC, other relevant highway authorities and the Police in order to ensure compliance with regulations and advance notification for local residents.

The site is located close to Kensington Olympia and Earls Court underground stations and a number of London Bus services, given the sites proximity to public transport services, it is envisaged that the majority of construction personnel would travel to site by public transport.

Provision will also be made for secure bicycle parking to encourage use by the construction workforce.

Certain trades may require short-term parking on site for vehicles due to transportation of specialist equipment / plant requirements.

Site access gates will be established around the perimeter of the site and they will be used for construction access and egress to the site over the construction period.

Different gate positions will be used to suit the location of the construction works as the works progress across the site.

Wherever practicable, one way traffic routes for both on and off site traffic would be adopted to encourage smooth running traffic and minimal congestion.

Access to site will be via the gates (refer to Logistics Plan)

The flow of traffic across the site, speed restrictions, the siting of wheel wash facilities and sheeting gantries will be designed to take account of the potential presence of contaminated ground during construction activities in certain areas and in the minimisation of associated potential safety, health and environmental risks.

Personnel and Vehicle Segregation

All pedestrian routes will be clearly defined utilising temporary fencing and pedestrian route signage where necessary. Pedestrian crossover routes will have appropriate warning signs displayed, e.g. give way, vehicle crossing etc.

All site operatives will be given a specific site induction, and briefed with reference to use of designated pedestrian access ways and crossover points.

Vehicle movements may result in dust emissions or spillages and exhaust emissions, however a number of control measures can be adopted to minimise such emissions:

- Wheel washing facilities on site to minimise mud being transported on to adjacent roads.
- Damping down of site haul roads by water bowser during prolonged dry periods.
- Regular cleaning of hard surfaced site entrance roads.
- Restricting vehicle speeds on haul roads and other unsurfaced areas on site.
- Hoarding and gates to prevent dust breakout.

3.2 Enabling Works

Prior to commencement of works the following will have been undertaken: -

- Installation of St Edward standard perimeter hoarding, following agreement with RBKC.
- Dilapidation survey of existing adjacent highways, footpaths, street furniture, boundary walls and associated structures. All surveys will be undertaken and agreed with all relevant 3rd party bodies.

3.3 Substation

The team has explored the previously proposed location for the temporary substation and have come up with a strategy that is more beneficial to the scheme. This situates the substation on the middle of reservations of the permanent access road onto the site, allowing for more flexibility in terms of logistics and the construction programme.
4 Basement Perimeter Wall Construction

4.1. Introduction
A piling mat designed to a certain depth of compacted hardcore will be installed.

The team is currently proposing that the secant wall along the KR/HB boundary be omitted. Secant piling as a form of retention control will commence along the Network Rail boundary on the 28th April 2014. Piling is expected to proceed along the FTA boundary up to the Warwick Road boundary with completion of the piling work at the junction between Kensington Row and Homebase on 24th July 2014.

4.2 Secant Pile Wall
Two types of secant pile wall will be utilised on the project:
- 600mm diameter propped wall on the more critical boundaries.
- 750 / 900mm diameter cantilevered secant wall on the less critical areas.

Once the capping beam is constructed at the top of the pile along an elevation the secant wall will be propped by designed raking props at the mid-capping beam level at approximately 3.6m AOD. The restraint for the props will be provided by a designed mass concrete thrust block installed below the B2 basement level.

4.3. Sequence for installing secant piled wall.
- Probe for obstructions along the line of the secant wall
- Construct perimeter piling platform (to wall perimeter)
- Construct temporary mass concrete guide wall for secant pile retaining wall.
- Installation of 600mm hard-firm secant pile wall using CFA techniques. Male piles at 900mm c/c.
- Break down & trim secant piles (approx 7 days after initial installation)
- Locally excavate and Install formwork and reinforcement to capping beam to prepare for placement of concrete.
- Place concrete
- Strike & remove formwork.
5 Basement Excavation & Temporary works

5.1 Bulk excavation strategy
Excavation from the Network Rail end will commence on 21st July 2014 towards the Warwick Road end. The battering scope excavation method will be applied with the slope moving from the Network Rail end towards Warwick Road as excavation work continues. The battering slope method will also be used as a form of retention control along the boundary of KR and HB during the period of excavation.

As the HB vacant possession date comes to play during the current programme, it is proposed that HB substructure and basement should be constructed as a follow on from KR for continuity and proficiency of logistics by making the podium slab and basement available for loading and site logistics.

It is proposed to recycle as much of the material as practically possible. The rate of disposal from site would reach levels of approximately 50 lorries per day, excavation will commence in line with the installation of the completed retaining wall. As the excavation progresses a temporary purpose designed earth retention berm will be left in place along the face of the retaining wall to provide temporary restraint for the retaining wall and capping beam until the temporary steel raking props are installed to provide full and more semi-permanent restraint to the wall elevation.

5.2 Installation of Temporary Works
As a significant proportion of the berm is formed, temporary works will be installed to the face of the capping beam. The restraint for the walls will be provided by the construction of a designed mass concrete thrust block which would be situated below the lower level basement slab and would be removed from the capping beam and wall, once sufficient horizontal restraint is provided by the permanent suspended floor slabs.

The sequence for the temporary works installation will be as follows:

- The face of the capping beam to have a designed steel plate connected to the capping beam wall. Connections for the steel raking props and the knee brace situated in the North West corner of the capping beam to be previously installed in the capping beam by the use of proprietary cast in stud anchors to provide a good quality connection into the beam from the prop.
- An isolated slot trench to be formed in the berm to allow the prop to be placed against the face of the capping beam and allow the prop to be stabilised using the support of the earth berm.
- The props should be lowered into position by the tower crane and the prop bolted or welded into position on the capping beam.
- Once in place and located at the capping beam the remaining lower end of the prop would be cast into a mass concrete thrust block situated sub B2 level.
- Once a good proportion of the wall is propped the earth berm would then be excavated and removed (carefully to avoid damage to the raking support props).

Note: The location of the temporary props would be carefully coordinated with the permanent works design team so as to prevent any clash with any permanent works elements such as columns, walls or drainage.
Prior to removing the temporary earth berm and inducing a load into the temporary raking props the temporary works should be thoroughly checked and only once the props are deemed to be of sufficient strength will a permit to load the prop be issued. As the reduced level excavation progresses the deflection of the walls (both propped and un-propped) will be carefully monitored on a daily basis for any excessive deflections that would not be expected from the designed retaining wall. Prior to any retaining wall being loaded the design engineer will provide a schedule of permissible deflections to the principal contractor to allow the effective management of the temporary works in this location.

5.3 Dewatering strategy

Two pump stations are suggested for dewatering while the basement is brought to a waterproof standard.

The perimeter wall is designed to prevent the inflow of water; until the reinforced concrete liner walls are installed against the secant pile wall some seepage can be expected. Localised sump pumps will be installed to remove the water through settlement tanks and into the Thames Water infrastructure for discharge. The will be on the basis that a discharge license is obtained from Thames Water prior to commencement of excavations work.
6. Reinforced Concrete Basement Construction

6.1 Tower Cranes

All lifting operations on site are in accordance with the regularly updated Project Lifting Plan and all H&S documents are kept within the Project Office.

As part of the substructure works, it is proposed to use up to two tower cranes, these will comply with HSE Tower Crane regulations 2010 (refer to logistics plan).

The following measures have been put in place for the safe operation of the tower cranes.

Lifting Operations: -
- The lifting equipment and accessories will be in good working order.
- Test and thorough examination certificates for equipment below the hook of the crane.
- The site supervisor will ensure all equipment is inspected and maintained.
- Records of inspection will be maintained in the office.
- Test and thorough examination certificates will be stored in the project lifting plan.

6.1.1 Tower Crane strategy

It is proposed to carry out the basement works with the use of two luffing jib tower cranes.

<table>
<thead>
<tr>
<th>Tower Crane</th>
<th>Approximate location</th>
<th>Jib length (m)</th>
<th>Jib type</th>
<th>Max Duty (kg's)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TC-01</td>
<td>Between blocks C and D</td>
<td>55</td>
<td>luffing</td>
<td>3500</td>
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<tr>
<td>TC-02</td>
<td>In the crook of block c North West elevation</td>
<td>55</td>
<td>luffing</td>
<td>4000</td>
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</tbody>
</table>

6.1.2 Crane Safety & Logistics

The following measures will be put in place for the safe operation of the tower cranes.

Collision avoidance system

Mandatory requirement due to close proximity of cranes on an inner city development with nearby properties and proximity of Network Rail assets.

Down rated crane Foundations

Due to the requirements stipulated by Network Rail the tower crane foundations will require a mandatory 25% down rating to provide an additional factor of safety for the cranes adjacent to Network Rail assets.

Full time on site Appointed person

Due to the quantity of cranes and complexity of lifting restrictions and conditions a full time appointed person will be required on site to manage all lifting operations.
Construction of Tower crane Foundations

Similar to that of the bearing piles the tower crane foundations will be constructed at the lower level of the B2 basement level slab. The foundations to the crane bases will be piled using the same rotary auger pile rigs used as the bearing piles are installed. When the piles to the crane base are installed and are of sufficient strength the crane bases will be constructed to facilitate early installation of the tower cranes.

6.1.3 Erection of Tower cranes (TC-01 & TC-02 )

As a critical operation that requires a significant proportion of the site area to safely carry out the works coupled with the inherent restrictions set down by London Underground and Network Rail situated along the Western Boundary the erection of the tower cranes will take place over a weekend period. Prior to these works being carried out all necessary permission will be sought from RBKC and TfL.

6.2 Sub-Basement level works

On completion of the excavation works to the formation level of the lower level basement slab, this will be trimmed to the final design levels. Any below ground services will be installed and tested below the basement slab.

6.3 B2 Basement Slab Construction

Further geotechnical information is required to ascertain the optimum subs strategy which will dovetail into the proposed basement construction methodology with the Civil / Structural engineers currently reviewing this element.

Prior to construction of the foundation raft at the lower basement level, a proprietary basement tanking system and water bar will be installed at all construction joints. A typical basement slab construction is as follows:

- Trim & grade to B2 slab formation
- Cast mass concrete blinding to form a surface for applying waterproof membrane and tanking.
- Apply continuous waterproof tanking material and seal all laps (and along perimeter of secant wall/slab junction).
- Drill & resin any continuity reinforcing bars into the male secant piles.
- Install slab reinforcement to slab area (including any columns and wall starters)
- Formwork to perimeter and any box-outs necessary (around raking props)
- Clean & inspect slab pour prior to concrete operations.
- Place Concrete

Note: The placement of large volumes of concrete such as the raft foundation will be carried out by a mobile or static concrete pump.

The above process will repeat until the foundation raft is constructed.
6.4 Construction of RC Vertical Elements

When a sufficient area of B2 slab is constructed the vertical elements will be constructed to allow the upper level; basement slabs to be constructed.

The vertical elements can be divided into the following categories.

- Single sided (250 mm) RC insitu liner wall
- Double sided RC wall (shear walls and the like...)
- RC Columns (varying orientations)
- RC Cores

6.4.1 Formwork

Proprietary Formwork systems will be used with the following benefits:

- The formwork system is relatively simple to erect, clean and dismantle.
- The systems have built in platforms for safe high level access.
- Any change in shape or orientation can be accommodated.
- Complex designs of single sided wall formworks are subject to large hydrostatic forces when placing the concrete and the proprietary systems are ideal for dealing with this situation.

Typical proprietary columns Formwork system (with access platform)

Typical proprietary panelised single sided wall formwork system
6.4.2 Suspended slabs
As the vertical elements are constructed the RC suspended slabs will commence. Due to the complexity and various geometry of the basement layout a proprietary strike and erect formwork system will be used. The main benefits of utilising such a system are that they are not fully crane dependant and the lightweight components can easily be lifted and installed into position.

Proprietary panelised strike and erect slab formwork system.

6.4.3 Typical Construction sequence for suspended basement slabs
- Erect Slab formwork system (using high level edge protection).
- Level formwork system.
- Apply form box outs formers.
- Apply Formwork release agent to deck.
- Install reinforcement and any cast in accessories (including all wall and column starter reinforcement).
- Install edge board.
- Clean & inspect all elements of the structure (including temporary works support of system).
- Place concrete.
- Allow concrete to set & gain strength for eventual striking and removal of formworks system.
- Strike, clear and install temporary back propping (as per predetermined design criteria).
7 Project Specific Health and Safety Procedures

7.1 Principal Contractor Health & Safety Policy

7.1.1 Scope & Purpose

It is the prime responsibility of the Principal Contractor to: -

- Meet the Occupational Health, Safety and Environment management requirements of St Edward Homes.
- Provide protection to and notices / signage for the general public.
- Provide a safe place to work for all employees and visitors.
- Provide plant and equipment safe and fit for purpose to all employees.
- Minimise risk of injury or other hazards to employees by regularly inspecting and auditing the work procedures.
- Investigate fully all incidents or dangerous occurrences and to update the working procedures to take account of any findings relating to such happenings.
- Ensure compliance with Health and Safety Policy as it involves every aspect of the Company’s business and the working of its employees. The purpose of the manual is to describe how the policy is put into effect and to give instructions and guidance to all employees whose actions affect the safety of others or themselves.

7.1.2 Management Objectives

- To ensure that all the Companies facilities provide a safe working environment for all employees, visitors and contractors working on the Company’s premises and sites.
- To keep records which confirm the safe working arrangements which indicate where changes have been made through necessity or for general improvement.
- To minimise the risk of injury or exposure to hazards (physical or chemical).
- To minimise the cost of waste or loss of production due to mishandling of equipment, materials or incidents.

7.1.3 Object of the Health and Safety Management System

To familiarise and instruct all Company personnel in the health and safety concept as operated by the group and to demonstrate that the systems are mandatory in their application as required by statute. Clearly define the responsibilities of Company personnel within the health and safety management system. Demonstrate to the enforcing authorities the Company’s commitment to the use and review of the health and safety management system. Demonstrate to the enforcing authorities the Company’s commitment to the use and review of the health and safety management system.

To instruct contractors, and sub-contractors supplying services to the Company, were necessary, to use health and safety management systems as operated by the Company and with which they are required to comply in order to conform with the Company’s objectives.
7.1.4 Health and Safety Standards

The standard of the Company’s health and safety record is dependant upon the actions and risks taken by its employees in any sphere of the work. It is necessary that there is a full awareness of the requirements at all levels. This will be provided by in-house training for all employees and will be included in the induction training of new employees. Employees training needs will be assessed throughout their employment with us and training development schemes will be implemented.

7.2 Site Working Hours

<table>
<thead>
<tr>
<th>Start</th>
<th>Finish</th>
<th>Days applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:00Hrs</td>
<td>18:00Hrs</td>
<td>Monday to Friday</td>
</tr>
<tr>
<td>08:00Hrs</td>
<td>13:00Hrs</td>
<td>Saturday</td>
</tr>
</tbody>
</table>

Unless otherwise noted all working hours will be in accordance with the above criteria. Any works outside these hours will require prior notification and agreement with RBKC and any other relevant statutory body.

7.3 Typical Safety, Health & Environment Management Systems

Prior to works commencing the principal contractor will have in place the following SEHL management systems:

- Construction Phase Health and Safety Plan
- Site Waste Management Plan
- Traffic Management Plan
- Project Lifting Plan
- Task specific Risk Assessments and Method Statements Project Specific inductions
- Project Specific Inductions
- Task Orientated Risk Assessment and Method Statement Briefings
- Project Specific Hazards
- Working at Height and Falls from Height
- Lifting Operations
- Manual Handling
- Excavation and Existing Underground Services
- Stability and Safety within Excavations
8 Environment

8.1. Acoustic and Dust Monitoring
Baseline monitoring will be carried out for the background noise and dust levels. Monitors will be established on site to record on-going noise and dust levels to assess the potential impact of the operations and provide limiting factors in which to manage the environmental impacts of the works.

St Edward are to enter into a voluntary Section 61 agreement with RBKC and implement real-time noise and dust monitoring throughout the construction works.

8.2. Environment Considerations during Construction
Vehicle movements may result in dust emissions (by re-suspending dust from road or spilling from dusty loads) and exhaust emissions, however a number of control measures can be adopted to minimise such emissions:
- Wheel washing facilities on site to minimise mud being transported onto adjacent roads.
- Damping down of site haul roads by water bowser during prolonged dry periods.
- Regular cleaning of hard surfaced site entrance roads.
- Restricting vehicle speeds on haul roads and other unsurfaced areas on site.
- Hoarding and gates to prevent dust breakout.
- Ensuring that dusty materials are transported appropriately (e.g. sheeting of vehicles carrying spoil and other dusty materials).

8.3. Risk Assessment of Potential Air Quality Impacts
There is no formally recognised methodology for determining the effects of construction dust concentrations. Assessment methodologies therefore adopt a range of guidance, including the Mayor of London Control of Dust and Emissions from Construction and Demolition Best Practice Guidance (BPG) and Institute of Air Quality Management guidelines.

The potential air quality impacts of the construction activities at the site have been assessed using the methodology set out in London Council BPG. The main steps are as follows:
- Identify risk level of the worksite
- Determine risks and best practice measures for mitigation; and
- Undertake a Dust Risk Assessment and outline how each risk will be mitigated

8.4. Site Elevation
The level of risk attached to a construction site is dependent not only on the size and scale of a development, but also the potential impact of the development on nearby sensitive receptors. The Best Practice Guidance Site Evaluation Guidelines have been used to identify the site as a high risk worksite.
8.5. Dust Emitting Activities and Proposed Steps to Reduce Dust

Potential dust impacts from construction are associated with the number, nature and use of construction plant, the scale of dust generating site activities such as excavation works, the location and extent of stock piles on site in relation to sensitive receptors, and on construction vehicle movements both on and off site.

8.6. General Dust Control Measures

The BPM measures set out in Section 6 of the Mayor’s Best Practice Guidance will be implemented where practicable to control dust emissions from the worksite. Generic dust control measures to be used include:

**General**
- Installation of solid hoarding around site perimeter
- Choice of methodology / technique for dusty operations (including the site layout) will be considered in order to eliminate or reduce potential for dust at sensitive locations.
- All site personnel to be fully trained / briefed on the control of dust.
- Manager on site to maintain logbook of dust events, and carry out inspections; and
- Dust monitors installed on site, equipped with real-time alert function.

**Construction Traffic**
- No idling vehicles either outside or within the worksite, unless idling is necessary to carry out the works (e.g. concrete wagon).
- Hard surfacing and effective cleaning method used for site haulage routes.
- Enforcement of an on-site speed limit
- All loads both entering and leaving site to be covered
- Fixed wheel and / or vehicle washing at site exit
- Clean internal and external roads at least once a day
- On road vehicles to comply with requirements of the Low Emission Zone (LEZ); and
- Non-road mobile machinery (NRMM) used on site will operate ultra-low sulphur diesel and will preferably be fitted with suitable exhaust after treatment particulate filters.

**Site Activities**
- All plant and equipment will be well maintained and shut down when not in use.
- Avoid use of diesel or petrol powered generators by using mains electricity
- Use of regularly serviced dust suppressants / extraction and ventilation systems
- Stock piles covered to prevent wind whipping and located taking into account the prevailing wind direction to reduce the likelihood of affecting sensitive receptors.
- No burning of waste wood or other materials on site, and
- A suitable method for immediate clean-up of spillages of dusty materials in place
- Cutting equipment to be used with water suppressant or suitable extract system, and
- Notify local authority of the use of a mobile crusher on site
8.7. Risk Assessment / Method Statement Summary

A risk assessment of potential dust impacts relating to all phases of the development has been undertaken. Results of the assessment indicate that after mitigation, there are no construction activities considered to have a high-risk potential for dust impacts. There are three construction phases (listed below) which are considered as ‘medium’ risk after mitigation. All other activities are judged to carry lower risk for causing potential dust impacts:

- Façade piling and perimeter piling (03-04 months)
- Reduced level dig (03-05 months)
- Construction of basement and slabs (08-09 months)

Results of the dust risk assessments indicate that the highest risk dust emitting activities are scheduled to take place during months 01 – 11 of the 11 month build programme. During this period of works, particular attention should be given to use of localised screening / sheeting and use of damping down to control dust emissions. Following implementation of mitigation and management measures, the residual dust impacts arising from construction are anticipated to be of medium significance.

8.8. Dust Management

This section details the approach to be taken by site operators to ensure that dust emissions are minimised, dust levels are monitored and any problems or complaints are dealt with in an expedient and considered manner.

8.8.1. Dust Management Procedure

The mitigation measures stated will be adopted for the construction phase of the project. All site operatives will be trained to ensure that dust emissions are minimised and best practicable means are implemented at all time.

Information relating to dust control will be communicated through the site induction, start of work briefing and toolbox talks with supervision on site at all times. Further to this, the Site Manager will be responsible for the management of air quality and daily dust observation logs will be compiled.

The contractor will establish a phone line for residents to inform site of perceived dust issues. All complaints received will be recorded, investigated and corrective actions implemented if the complaint is valid and feedback given to the complaint. RBKC will be advised of any complaints, the actions taken to investigate the validity and any actions which have been put in place to rectify the situation if this is found necessary. Hammersmith and Fulham (H&F) will be advised of complaints from within the administrative boundary of H&F.

8.9. Site Action Levels

In accordance with the London Councils best practice guidance document, it is proposed that a Site Action Level (SAL) of 250ugm-3 is used for PM10. In addition, PM10 monitoring results should also be compared with pre-construction ambient levels and with air quality standards (AQS) limit values.

It should be noted that compliance with SAL does not offer exemptions from prosecution under legislation such as the Environmental Protection Act, through implementation of BPM could be used as a defence.
8.10. The following dust monitoring strategy is proposed: -

- Installation of two real time PM10 monitors at locations to be agreed with the Environmental Health in advance and must be in place prior to work commencing. Monitoring should allow access to the real time data.
- The monitoring system must be used to provide alerts at a level of 200µg/m³ and an action level of 250µg/m³ (as a 15 minute mean) to inform the site’s Environmental Manager (or other appropriate person) in the form of SMS text when the level has been exceeded.
- An alert level of 200µg/m³ (as a 15 minutes mean) should be used to check on site activities and used to ensure that activities will not lead to a breach.
- If the action level of 250µg/m³ (15 minute mean) is reached, works will cease and action taken to rectify immediately.
- The designated site manager will be responsible for dealing with elevated levels of PM10, investigating and logging action taken.
- Summary reports of exceedences, investigations and the remedial actions taken should be provided to Environmental Health if requested. The council will be provided with a password to enable real-time access to PM10 monitoring data.

8.11. Noise Mitigation

All works will be carried out during 0800 – 1800 Monday to Friday and 0800 – 1300 Saturday. The key activities within the Construction Phase are: -

- Piling
- Excavation, Propping and Dewatering
- RC Base Slabs
- RC Columns and ground floor slab

8.11.1 Proposed Steps to Reduce Noise and Vibration

Best Practicable Means (BPM) (as outlined in Section 72 of the Control of Pollution Act 1974) will be employed in order to minimise noise and vibration levels throughout the period of works, general measures will include the following as appropriate: -

- Careful selection of plant, construction methods and programming. Only plant conforming to relevant national or international standards, deliveries and recommendation on noise and vibration emissions will be used.
- Site hoarding and screens will provide acoustic screening.
- Doors and gates are not located opposite noise sensitive buildings. The mechanisms and procedures for opening doors / gates minimise noise as far as reasonably practicable.
- Construction plant will be located, as far as is reasonably practicable, away from adjacent occupied buildings or as close as possible to noise barriers or site hoarding where these are located between the plant and buildings.
- Static and semi-static plant / equipment (e.g. compressors and generators) will be fitted with suitable enclosures where practicable.
- Personnel will be instructed in BPM to reduce noise and vibration as part of their induction.
- Training as required prior to specific work activities
- When plant is not being used, it shall be shut down.
- Information leaflets will be distributed to local residents in advance of works commencing.

Continuous noise monitoring will be undertaken at a location representative of sensitive receptors in order to ensure the protection of the amenity of future residents. Where exceedences are likely to occur the contractor would be informed immediately and where necessary measures put in place.
8.12 Predicated Vibration Levels

Given the difficulties in accurately predicting vibration impacts associated with construction activities, it is best practice to introduce a management and monitoring programme from the outside of the main works. Careful management of on-site activities will help to mitigate vibration impact.

These management measures will include: -
- Selection of plant.
- Timing of activities in consultation with the occupiers of the properties.
- Monitoring vibration levels.

If changes to the hours of work, duration, methodology are required as a result of these management measures they will be gained via dispensations and variations.

8.13 Tolerance Levels

In accordance with BS 5228 – 2: 2009 Code of Practice for Noise and Vibration control of construction and open sites – Part 2 Vibration, Peak Particle Velocity (PPV) levels in excess of 1mm/s may be considered to represent a significant impact on the occupants of residential buildings (although high levels may be tolerated in certain instances). A higher level may be expected for commercial premises. In line with, BS6472 which suggests that the tolerance levels for commercial may be double that for residential, Peak Particle Velocity (PPV) levels in excess of 2mm/s may be considered to represent a significant impact on the occupants of commercial buildings.

Levels in excess of 1mm/s may be considered to represent a significant impact on the occupants of residential buildings and a level 2mm/s for commercial. Consequently, personnel will inform occupants in advance of works taking place. Notification will be via a leaflet drop which will inform potentially affected residents of the likely start dates of the works and the duration.

8.14 Monitoring and Reporting

In line with Best Practice Guidance for a high risk site and in accordance with RBKC Section 61 agreement the following measures have been implemented and will continue throughout all Construction phases of work as follows: -

- Continued minimum of two automatic particulate monitors to measure PM10 levels.
- Carry out a visual inspection of site activities, dust controls, site condition and records in a daily dust log.
- Identify a responsible person on site for dust monitoring and access to real time PM10 data for automatic monitors.
- Agree a procedure with RBKC to immediate and appropriate measures to be put in place to rectify any problems.

Where possible, it is intended that monitoring will be undertaken externally to minimise uncertainty that can arise from measurements taken internally. Where disturbance arises across a party wall then endeavours will be made to undertake internal noise monitoring.

The attended monitoring will be carried out according to demand. Additional attended monitoring may be carried out at a higher sampling frequency or at additional locations either upon the reasonable request of the local authority of following complaints.

Monitoring will be carried out during working hours and the data will be downloaded weekly. Results from the noise and vibration monitoring will be reported using reports.

The continuous noise and vibration monitoring equipment will incorporate an alert system which will allow instant notification should the specified threshold values be exceeded.

It is acknowledged that, for assessing human response to vibration, monitoring should be undertaken at the point of entry to the human body within the building, however for this monitoring strategy,
vibration measured either close to or at the base of the building will be used and transfer function applied where necessary to ensure that the measured vibration levels are representative of actual exposure.

All monitoring will be undertaken by competent and experienced staff, which will be given the requisite health and safety training and site access when required. Competent staff will normally be Corporate Members of the Institute of Acoustics or Association of Noise Consultants.
9 Site Logistics and Material Handling

Warwick Road is envisaged as the main construction access and egress to serve Kensington Row. A permanent internal road network designed and strengthened if required to accommodate construction traffic loading and or dismantling the tower cranes.

All site logistics will be managed by a dedicated logistics manager who will co-ordinate construction deliveries, crane and hoist booking times.

Contractors will have to pre-book all deliveries and when entering site they will be directed by dedicated traffic marshals to relevant areas.

St Edward Homes management will monitor all logistical matters on a daily basis and there will be weekly meetings for review purposes (refer to logistics plan)

- All vehicular movement on and off site will be in accordance with RBKC Planning approved Construction Phase Traffic Management Plan.
- All deliveries will be off loaded by forklift or crane within the site, and on no occasion will there be a requirement of off-loading of materials from Kensington High Street or Warwick Road.
- Flatbed delivery lorries will have suitable edge protection installed.
- Materials will be stored in designated storage areas and barriers set up to protect the materials from damage.
- Barriers will be used to direct operatives away from the area of unloading.
- All packaging materials will be disposed of accordingly (recycled if possible)

9.1. Materials Storage and Handling

Contractors and their subcontractors will be expected to maintain a tidy site and to operate a ‘just in time’ policy for the delivery and supply of materials for the works, particularly the final phase of the works when on site storage will be minimum.

Materials will be stored on site to minimise damage by vehicles, vandals, weather or theft, tanks and drums of liquid chemicals and fuels will be stored in bunded compounds. Packaging will be returned, where possible.

Tower cranes will be used for general unloading.
### 10.0 Preliminary Project Risk Assessment

<table>
<thead>
<tr>
<th>Risk/Activity</th>
<th>Initial Risk</th>
<th>Control Measure</th>
<th>Residual Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High</td>
<td>Med</td>
<td>Low</td>
</tr>
<tr>
<td>Falls from Height, slips, trips and falls</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Collapse of excavations to basement works</strong></td>
<td>✔</td>
<td>Method of permanent works to incorporate solution i.e. secant pile wall installed from ground level as opposed to conventional methods of shoring to excavations. All earthwork temporary works and permanent works support to be fully designed by competent design engineer and signed off under a strict requirement of compliance prior to the works progressing</td>
<td>✔</td>
</tr>
<tr>
<td><strong>Noise, Dust &amp; Vibration</strong></td>
<td>✔</td>
<td>Baseline monitoring carried prior to works commencing to allow principal contractor to regularly monitor and control excessive levels. Dust suppression to be used wherever possible. All vehicles exiting the site to be free from debris and loose material to keep highway clean. Limited working hours and all plant to be regularly serviced and have acoustic baffles where appropriate. Breaking down of piles to be carried out by silent hydraulic methods as opposed to percussive breaking.</td>
<td>✔</td>
</tr>
<tr>
<td><strong>Stability of structures in temporary condition</strong></td>
<td>✓</td>
<td>Full assessment of existing adjacent structures to be carried out and any necessary temporary works support to be designed and installed as necessary. Review and amend methodology of basement construction works. Regular monitoring of stability and movement of retaining walls in temporary condition Careful planning to execution of works.</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Proximity of live services</strong></td>
<td>✓</td>
<td>Detailed sub-scan survey and operation and maintenance manual from demolition contractor to be consulted. Consultation with all statutory authorities and Network Rail of all services adjacent to boundary. Physical non-intrusive survey on site prior to works being executed. Permit to work system in place prior to any works being carried out on site. Statutory authorities to isolate all services within project boundary.</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Hot works (welding, cutting and burning activities)</strong></td>
<td>✔</td>
<td>Hot works permit to be in place prior to any hot works, cutting or grinding being carried out. Avoid use of hot cutting wherever possible and all operatives carrying out or involved with hot works to be clearly briefed and fire marshall on duty during all hot works.</td>
<td>✔</td>
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</tr>
</tbody>
</table>

<p>| <strong>Movement of Heavy plant</strong> | ✔ | All areas of plant movement and pedestrians to be clearly segregated at all times and traffic management plan to be a regularly reviewed and updated. Clear and unambiguous signage in place and key locations for all personnel visitors and operatives alike. Clear instruction and update of all traffic movement to all site personnel during site induction and updates to be carried out as necessary. All reversing plant to have audible and visible indication and a banksman to be in attendance at all times. All pedestrians and general public to have clear unobstructed access to footpath and marshall and/or gate control to prevent plant leaving site coming into contact with general public and entering the public | ✔ |</p>
<table>
<thead>
<tr>
<th>Area</th>
<th>Status</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explosion &amp; Fire</td>
<td>✓</td>
<td>All hot works to be controlled in accordance with measures stipulated in hot works permit <em>(as detailed in previous section)</em>. All gas containers and LPG, propane and the like to be stored in accordance with HSE guidance HSG CS-6</td>
</tr>
<tr>
<td>Hazardous Substances</td>
<td>✓</td>
<td>All work method statements and risk assessment to address specific risks of chemicals involved in each operation and all operatives to be briefed on the safe use and disposal of respective substances. All works to be carried out in accordance with the COSHH Regulations 2002 and chemicals on site to be fully assessed relevant to task/operation. All waste and disposal of materials to be in accordance with environmental disposal guidelines stated by manufacturer.</td>
</tr>
<tr>
<td>Pollution/Contamination of existing watercourse</td>
<td>✓</td>
<td>As above. All materials deemed as hazardous/contaminated to be fully assessed in the pre-commencement site investigation report and a waste acceptance criteria (WAC) to be carried out</td>
</tr>
<tr>
<td>General public &amp; 3rd parties &amp; Security</td>
<td>✓</td>
<td>prior to any material being removed from site. Principal contractor to carry assessment of hazards to watercourses and operatives.</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>---</td>
<td>---------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>General public to be fully separated from the site by a secure timber closed boarded hoarding. All access and egress to be controlled on a 24Hr basis and implementation of active security system. Turnstiles and access and egress control to be in place at all times. All deliveries and visitors to site to be arranged with prior notice at all times.</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Cranes &amp; Lifting operations</td>
<td>✓</td>
<td>Project lifting plan to be in place and regularly reviewed and updated to allow the effective management of all lifting operations on site. All lifting operations to be undertaken in accordance with Lifting Operations and Lifting Equipment Regulations 1998 (LOLER 98). On site full time lifting coordinator and Appointed person in charge of all lifting operations. Regular coordinated lift management meetings with all contractors / managers.</td>
</tr>
</tbody>
</table>
HOMESAFE DEMOLITION DUE TO COMMENCE EARLY JULY 2014

POSSIBLE WELFARE OPTION

EXISTING SUBSTATION RELOCATED

DIRECTION OF EXCAVATION

EXISTING HOARDING LINE

TEMPORARY HOARDING LINE

PEDESTRIAN WALKWAY

PEDESTRIAN CROSSING POINT

SITE TRAFFIC

HAUL ROAD

DENOTES DIRECTION OF PILES

GATE 3 SITE ENTRANCE

GATE 1 (SLIDING GATE) PEDESTRIAN GATE & SECURITY

GATE 2 SITE EXIT

HAUARD ROAD

SMOKING HUT

FIRE ASSEMBLY POINT

COSHH STORE

WHEEL WASH

PEDESTRIAN GATE & SECURITY

DENOTES DIRECTION OF PILES
EXPANDED DATES
- MOCK UPS - 04.12.13 - 06.12.13
- BUILDING 1 - 16.12.13 - 28.03.14
- BUILDING 2 - 09.12.13 - 21.03.14
- BUILDING 3 - 16.12.13 - 21.03.14

DEMOLITION DATES
11.11.13 - START
11.11.13 - 02.12.13 ASBESTOS REMOVAL
02.12.13 - 13.01.14 SOFT STRIP OF EXISTING BUILDINGS
16.12.13 - 07.04.14 DEMOLITION
24.03.14 - 26.04.14 CLEAR SITE & FORM PILING MAT
28.04.14 PILING COMMENCES

EXISTING WALL TO BE RETAINED UNTIL MARCH 2014, TO BE DEMOLISHED IN SECTIONS & HOARDING TO FOLLOW

DEMO SEQUENCE EAST TO WEST

GATE 1
GATE 2

EXISTING SUBSTATION TO BE PROTECTED DURING DEMOLITION & REPOSITIONED DURING MAIN WORKS

HOARDING LINE
HOARDING LINE DURING DEMOLITION
DEMO LINES
STEEL PLATES TO PROTECT EXISTING SERVICES

MOCK UP

EXISTING WALLS TO BE USED DURING MAIN WORKS