Noise, Dust and Vibration Assessment

Project Address:

14 Clareville Street, SW7 5AW

May 2017
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Background and Objectives

The proposed project at 14 Clareville Street involves:

- Excavation of front and rear gardens to form lightwells in conjunction with creation of new basement
- Internal layout reconfigurations
- The existing rear extension built in 1978 is to be lowered by 752mm to level out the lower ground floor
- New terrace to the raised ground floor.
- Lowering and levelling out of the garden with new stepped access from the lower ground floor

The site is in close proximity to a number of potentially sensitive noise dust and vibration receptors and these include:

- Residential, uses along Clareville Street.
- The general public.

The minimisation of the potential environmental impacts including noise, vibration, dust and other environmental nuisance in relation to the proposed demolition and construction works has been dealt with in this assessment, the CTMP and the CMS.

These have all been submitted as part of the supporting documentation to the planning application as submitted to the Royal Borough of Kensington and Chelsea RBKC.

This Noise Dust and Vibration Assessment will be provided to contractors tendering for the works and they will be required to adopt the recommendations of this document. In the event that changes to the
working method are proposed by the contractors; the contractor will be required, following
authorisation of the Client team, to agree the changes with RBKC Executive Director, Planning and
Borough Development in consultation with the Director of Environmental Health.

Jo Cowen Architects Ltd, Green Structural Engineering Ltd, the client and the main contractor will be
committed to ensure that all works will be undertaken in accordance with all relevant legislation,
best practice guidance, British Standards and the requirements of RBKC. This will also be made a
requirement for the sub-contractors tendering for the works.

Particular reference will be made to BS5228: Code of Practice for Noise and Vibration Control on
Construction and Open Sites; The Control of Dust and Emissions during Construction and Demolition

The Contractor will be required to register the site with the UK’s “Considerate Contractors Scheme”.

1. PROPOSED METHODS

Proposed methods of demolition for concrete include the use of non-percussive techniques and only cutting machinery or hand methods. All other demolition shall only take place by hand. All excavations for underpinning will be carried out by hand, using only non-percussive hand tools and for basement formation by hand or utilising a micro excavator.

Spoil will be removed using a conveyor belt system out of the front of the house to a narrow bodied wait and load lorry. The entire route will be covered and protected with hoarding/sheeting as required. The waste will be removed once the wait and load lorry is full. The full lorry will be removed from site before a new, empty lorry will arrive on site. The process is not continuous and the vehicles will only be there periodically during the day when spoil is being removed from the site, during the permitted hours of operations.

The basement enclosure will be formed using cast in-situ concrete in the form of underpins. No piling is to take place.

A series of general best practice measures to be adopted during demolition and construction are provided within this document including neighbourhood liaison, personnel training, vehicle use and maintenance and general site procedures to minimise noise vibration and dust generation.
1.1 Introduction

This assessment has been compiled, in support of the planning application for the above development, to advise on the measures, in accordance with the best practicable means, to be used to minimize construction noise vibration and dust that could arise as a result of these works.

The purpose of the assessment is to provide information on the potential sources of noise, vibration and dust that may arise from the demolition of the existing buildings and the construction of the new development together with recommendations for mitigating or preventing potential nuisance.

Once planning permission is granted, the appointed contractor will be fully responsible for the implementation of this plan and it will be necessary to resubmit this plan on the basis of changes that may arise following the detailed engineering design of the works; the actual construction programme and proposed methodology; or conditions prevailing at that time.

Whilst the contractors who will be undertaking the demolition and construction works have not been appointed and the detailed engineering design has not been undertaken, this document provides details of the likely works and best practice methods that will be adopted in order to minimise the potential for the demolition and construction to result in dust or noise and vibration impacts.

The project consists of the excavation of front and rear gardens to form lightwells in conjunction with creation of new basement; the existing rear extension built in 1978 is to be lowered by 752mm to level out the lower ground floor; new terrace to the raised ground floor; lowering and levelling out of the garden with new stepped access from the lower ground floor and internal layout reconfigurations throughout.

The site is in close proximity to a number of potentially sensitive noise dust and vibration receptors and these include:

- Residential properties along Clareville Street in particular adjoining properties and their garden areas;
- The general public.

The most sensitive time periods are likely to be evening / night-time for residential uses.

The contractor undertaking the demolition will be responsible for determining the most appropriate method of demolition and finalising the plant and equipment to be used. This document, however, draws on information from Green Structural Engineering who have provided information on the likely approach to demolition and construction.

This report is divided into the following sections:

- Legislation, Planning Policy and Guidance;
- Description of site setting and receptors and current conditions;
- Description of works - Key Activities;
- Mitigation and best practice methods.
2. LEGISLATION PLANNING POLICY AND GUIDANCE

1.2 Legislation

Various strands of national, regional and local planning policy and guidance are relevant to the site redevelopment. These include (but are not limited to) the following:

<table>
<thead>
<tr>
<th>Legislation and Regulations</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Protection Act 1990, Pollution Prevention and Control Act 1999,</td>
<td>Noise and Dust nuisance is defined as a statutory nuisance in Part III of the act, Sections 79-82 address Statutory Nuisance</td>
</tr>
<tr>
<td>Pollution Prevention and Control (England and Wales) Regulations 2007</td>
<td></td>
</tr>
<tr>
<td>Control of Pollution Act 1974</td>
<td>The principal legislation relating to noise is derived from the Control of Pollution Act 1974, although law related to both Statutory and Common Law can be relevant in the event that excessive noise nuisance is caused by an activity.</td>
</tr>
<tr>
<td>The Noise Emission in the Environment by Equipment for Outdoor Use Regulations 2001</td>
<td>The intention of the legislation is to control and monitor noise of equipment for use outdoors so as to reduce noise nuisance. The scope of the Outdoor Noise Directive comprises a wide range of construction plant and equipment, equipment for gardens, for lifting, pumps, drills, saws etc.</td>
</tr>
<tr>
<td>Clean Air Act 1993</td>
<td>Emitting dark smoke from bonfires is an offence under this act</td>
</tr>
<tr>
<td>Building Act 1984</td>
<td>Applies to demolition of buildings and requires prior notification to the local authority and production of a method statement before the work begins</td>
</tr>
<tr>
<td>Regulation and Law</td>
<td>Description</td>
</tr>
<tr>
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<tr>
<td>Health and Safety at Work Act 1974</td>
<td>The purpose of this act is to secure the health, safety and welfare of person at work and to protect against risk to other persons from these activities. Under this act the Health and Safety Executive (HSE) issue sets of guidance notes.</td>
</tr>
<tr>
<td>Control of Asbestos Regulations 2012</td>
<td>Activities involving asbestos must be reduced to as far below the control limit asbestos (0.1 asbestos fibres per cubic centimetre of air) as possible.</td>
</tr>
<tr>
<td>The Non-Road Mobile Machinery (Emissions of Gaseous and Particulate Pollutants) (Amendment) Regulations 2011</td>
<td>Sets out requirements to reduce emissions from diesel engines of non-road mobile machinery</td>
</tr>
</tbody>
</table>
1.3  Policy

<table>
<thead>
<tr>
<th>Policy State</th>
<th>Description</th>
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<tbody>
<tr>
<td>National Planning Policy Framework</td>
<td>States that planning policies should sustain compliance with and contribute towards EU limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and the cumulative impacts on air quality from individual sites in local areas.</td>
</tr>
<tr>
<td>RBKC Basements SPD, April 2016</td>
<td>Emphasises the relevance of CE6 part B, makes reference to the potential construction impacts.</td>
</tr>
<tr>
<td>RBKC Consolidated Local Plan, July 2016</td>
<td><strong>Policy CE 5 Air Quality</strong>  The Council will carefully control the impact of development on air quality, including the consideration of pollution from vehicles, construction and the heating and cooling of buildings. The Council will require development to be carried out in a way that minimises the impact on air quality and mitigate exceedances of air pollutants.  <strong>Policy CL5 and CE 6 Noise and Vibration</strong>  The Council will carefully control the impact of noise and vibration generating sources which affect amenity. The Council will require new noise and vibration sensitive developments to mitigate and protect occupiers against existing sources of noise and vibration.  To deliver this the Council will:  - require that noise and vibration sensitive development is located in the most appropriate location and protected against existing sources of noise and vibration, through careful design, layout and use of materials, to ensure adequate insulation from sound and vibration;  - resist developments which fail to meet local noise and vibration standards;  - resist all applications for noise and vibration generating development and plant that would have an unacceptable noise and vibration impact on surrounding amenity;  - Require that development protects, respects and enhances the attributes of the special significance and tranquillity of tranquil quiet areas.</td>
</tr>
<tr>
<td>Source</td>
<td>Description</td>
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<td>----------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>The London Plan 2011</td>
<td>POLICY 3.2 Improving Health and Addressing Health Inequalities New developments should be designed, constructed and managed in ways that improve health and promote healthy lifestyles to help to reduce health inequalities.</td>
</tr>
<tr>
<td>The Control of Dust and Emissions during Construction and Demolition Supplementary Planning Guidance Mayor of London July 2014</td>
<td>Outlines measures to be undertaken and requires Dust Risk Assessments to be carried out.</td>
</tr>
<tr>
<td>RBKC Code of Construction Practice, April 2016</td>
<td>As of April 2016 all construction projects will be subject to the code. All developers and contractors will be required to develop a communication strategy for neighbour liaison. The occupiers of neighbouring premises must be informed of any works, within a reasonable time period before they start, to provide as much notice as possible of any unavoidable noise or vibration they are likely to be exposed to. All sites must be assessed and characterised as either Category 1, 2 or 3. A site’s character will determine the extent of neighbour liaison, noise monitoring and whether a S61 Prior Consent is required.</td>
</tr>
</tbody>
</table>
### 1.4 Guidance

<table>
<thead>
<tr>
<th>Standard/Document</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BS 6069 Part 2 ‘Characterization of air quality’</td>
<td>Dust is the generic term which the British Standard document BS 6069 (Part Two) uses to describe particulate matter in the size range 1 – 75μm (micrometres) in diameter.</td>
</tr>
<tr>
<td>BS 7445: 2003 ‘Description and Measurement of Environmental Noise, Part 2: Guide to the Acquisition of Data Pertaining to Land Use’</td>
<td>Defines parameters, procedures and instrumentation required for noise measurement and analysis.</td>
</tr>
<tr>
<td>BS 5228-1: 2009 Noise and Vibration Control on Construction and Open Sites Part 1 Noise, Part 2 Vibration.</td>
<td>Part 1 Annex C provides guidance on noise levels produced by site equipment and activities and Part 1 Annex D provides a method for estimating noise from construction sites; Part 2 provides a guide to vibration levels produced by site equipment and activities.</td>
</tr>
<tr>
<td>BS 8233:2014 ‘Guidance on sound Insulation and Noise Reduction for Buildings-Code of Practice’.</td>
<td>Provides criteria for the assessment of internal noise levels for various uses including dwellings and commercial properties and recommended internal noise levels.</td>
</tr>
<tr>
<td>GLA and London Councils 2006’ ‘Best Practice Guidance: The Control of dust and emissions from construction and demolition</td>
<td>Provides best practice guidance on the control of dust from sites</td>
</tr>
<tr>
<td>BS 6472-1:2008 ‘Guide to Evaluation of Human Exposure to Vibration in Buildings, Part 1: Vibration Sources Other Than Blasting’</td>
<td>Presents recommended frequency weighted vibration spectra (for continuous vibration) and vibration dose values (VDV) (for intermittent vibration) above which adverse comment is likely to occur in residential properties.</td>
</tr>
<tr>
<td>BS 5228:2009 Part 1 Noise, Part 2 Vibration ‘Noise and Vibration Control on Construction and Open Sites’</td>
<td>Provides an industry accepted guide for noise and vibration control and includes sound level data for individual plant as well as a calculation method for noise from construction activities. The standard also provides advice on potential noise limits from construction sites.</td>
</tr>
<tr>
<td>BS 7385:1993: ‘Evaluation and Measurement for Vibration in Buildings - Part 2: Guide to Damage Levels from Ground Borne Vibration’</td>
<td>Presents guide values or limits for transient vibration, above which there is a likelihood of cosmetic damage.</td>
</tr>
</tbody>
</table>
1.5 Standards to be adopted

Preliminary target criteria are proposed below for dust, noise and vibration, however, it is acknowledged that best practice methods should be adopted at all time to minimise the potential dust, noise and vibration.

Dust is the generic term which the British Standard document BS 6069 (Part Two) used to describe particulate matter in the size range 1 – 75μm (micrometres) in diameter. Dust nuisance is the result of the perception of the soiling of surfaces by excessive rates of dust deposition.

There are currently no standards or guidelines for dust nuisance in the UK and this reflects the uncertainties in dust monitoring technology, and the highly subjective relationship between deposition events, surface soiling and the perception of such events as a nuisance.

Under provisions in the Environmental Protection Act 1990, dust nuisance is defined as a statutory nuisance. Complaints about excessive dust deposition would have to be investigated by the local authority and any complaint upheld in law for a statutory nuisance to occur.

The regulation of dust deposition is, however, generally managed by suitable on-site practices and mitigation rather than by the determination of statutory nuisance and/or prosecution or enforcement notice(s).

An informal criterion for dust deposition of 200 mg/m²/day (as a 30 day mean) is however often applied in the UK as an indicator of potential nuisance for sensitive receptors.

Noise, in the context of this study, can be defined as unwanted or undesirable sound derived from sources such as road traffic, industries or construction works, for example, that interferes with normal activities, including conversation, sleep or recreation. Vibration is related to noise resulting from the transmission of low frequency energy through, typically, the medium of ground or buildings. It results in small movements of the transmitting medium, which can cause discomfort if the movements are large enough. In this document the potential for noise and vibration to be generated during demolition and construction is considered.

BS 5228 provides practical information on noise and vibration reduction measures, and promotes a ‘best practice means’ approach to control noise and vibration. The calculation method provided in BS 5228 is based on the number and types of equipment operating, their associated sound levels, and the distance to receptors, together with the effects of any screening.

The types and numbers of construction plant will be finalised following the completion of the engineering design and during the tender period. Ultimately there will be a trade off between maximising the number of plant and equipment on site within the constraints of the site and project programme.

BS 5228 provides further guidance on acceptable levels of construction noise within Annex E and provides example criteria for the assessment of significance of construction noise impacts. One of the potential suggested criteria within BS 5228 refers to the DoE Leaflet AL72: Noise Control on Building Sites from 1976.
1.6 General Noise Dust and Vibration Control Measures

The Best Practicable Means (BPM) (as defined in Section 72 of the Control of Pollution Act 1974) [1] will be used to reduce noise and vibration levels at all times. Where practicable the control measures set out in BS 5228:2009 + A1:2014 Part 1 [2] and BS 5228:2009 + A1:2014 Part 2 [3], Section 8 will also be implemented.

Generic noise, dust and vibration control measures include:

- choice of methodology/technique for operations (including site layout) will be considered in order to eliminate or reduce emissions at sensitive locations;
- fixed items of construction plant will be electrically powered in preference to diesel or petrol driven;
- wherever practicable fabrication will be undertaken off site;
- noisy plant will be kept as far away as possible from sensitive areas;
- each item of plant used will comply with the noise limits quoted in the relevant European Commission Directive 2000/14/EC/United Kingdom Statutory Instrument (SI) 2001/1701 [4] where reasonably available;
- equipment will be well-maintained and will be used in the mode of operation that minimises noise;
- equipment will be shut down when not in use or throttled down to a minimum during waiting period;
- all materials will be handled in a manner that minimises noise; and
- deliveries will be arranged on a just-in-time basis in order to prevent vehicles queuing outside site.
2. DESCRIPTION OF SITE SETTING AND RECEP'TORS

14 Clareville Street is a two-storey terrace house consisting of lower ground, raised ground and first floor level.

The overall setting of the site is considered to be quiet residential. The most sensitive time periods are likely to be night-time for residential use.

The closest properties to the development are the adjoining residential properties on 16 Clareville Street and 14 Clareville Street.
3. DESCRIPTION OF THE WORKS

Full details of the proposed development and construction methods are provided in the planning application drawings and supporting information including the Green Structural Engineering Construction Method Statement for the development. This provides details of the excavation, temporary works and construction techniques, including details of the potential impact of the subterranean development on the existing and neighbouring structures, based on the type of geology and hydrology found in the area.

3.1 Overview of Development

The project consists of the excavation of front and rear gardens to form lightwells in conjunction with creation of new basement; the existing rear extension built in 1978 is to be lowered by 752mm to level out the lower ground floor; new terrace to the raised ground floor; lowering and levelling out of the garden with new stepped access from the lower ground floor and internal layout reconfigurations throughout.

Access Arrangement

A Construction Traffic Management Plan has been compiled for the site development works this confirms the following:

Spoil will be removed using a conveyor belt system out of the front of the house to a narrow bodied wait and load lorry. The entire route will be covered and protected with hoarding/sheeting as required. The waste will be removed once the wait and load lorry is full. The full lorry will be removed from site before a new, empty lorry will arrive on site. The process is not continuous and the vehicles will only be there periodically during the day when spoil is being removed from the site, during the permitted hours of operations.

The spoil will be loaded quickly and easily between the hoarding and the wait and load lorry located within the temporarily suspended area in front of the property. This makes the exchange process safe and quick. At all times the procedure will be overseen by a suitably qualified Banksman.

In Clareville Street, the conveyor will extend directly from the site to a position where it can discharge waste material into the waiting waste vehicle. For their safety, pedestrians will not be able to pass between the site and parked lorry. Qualified banksmen will be present at all times to ensure pedestrian and vehicle movement around the construction vehicle.

Whilst the exact sequence of the underpinning and retaining wall construction will be confirmed by the Contractor as it will relate to their sequence of construction, it is likely that in order to safeguard the existing structure and the neighbouring properties the original party will be underpinned with a combination of mass concrete and reinforced concrete underpins. Once cured, the first level of underpins can be braced and the remaining excavation carried out down to basement floor level.

3.2 Demolition

Dust suppression will be employed, by the most appropriate method available, to minimise the release of dust during any demolition works. Care will be taken to ensure that this does not result in run-off of sediment laden waters into drains or neighbouring properties.
The demolition of existing concrete shall be undertaken using non-percussive techniques and only cutting machinery or hand methods shall be used.

3.3 Excavation

The excavations for underpinning will be carried out by hand, using only non-percussive hand tools to ensure that at any time during the works the integrity of the superstructure is not compromised.

All excavation will be carried out by hand or utilising a micro excavator. Spoil will be removed using a conveyor belt system out of the front of the house to a narrow bodied wait and load lorry. The spoil will be loaded quickly and easily between the hoarding and the wait and load lorry located within the temporarily suspended area in front of the property.

Any compaction of hardcore shall only be carried out using non-vibrating methods.

3.4 Basement Formation and Underpinning

Where the boundary is shared with 16 Clareville Street and 14 Clareville Street, the existing footings will be underpinned using simple mass concrete underpins that ensure the existing walls above remain structurally independent to the new basement box. A separate RC liner wall will be constructed inboard to resist all lateral earth loading.

3.5 Superstructure

Above the RC ground floor basement capping the upper floors are likely to consist of steel beams and joists.

The contractor may put forward alternative solutions to suit his programme and method of working. These will be reviewed by the design team but no proposals will be considered unless they can satisfactorily demonstrate that they satisfactorily minimise any noise and vibration that may affect the neighbouring properties.

All cutting, grinding and sawing should be restricted on-site and pre-fabricated material and modules should be brought in where possible. In cases where such work must take place, spraying water, preferably from a water efficient spray pump, over the material as it is being cut greatly reduces the amount of dust generated.

Compressors omit higher levels of noise, vibrations and dust. Therefore, renewable, mains or battery powered plant items will be used at 14 Clareville Street.

3.6 Site Specific Noise and Vibration Control Measures

Control measures detailed below have been developed using the architect’s site plans:

- plant which is considered to introduce the risk of potential noise effects to be limited to working between 08:00 – 18:00 hrs Monday to Friday only, for high impact work this is limited to 09:00 – 12:00 hrs & 14:00 – 17:00 hrs Monday to Friday only;
• breaker usage to be limited to only where absolutely necessary; where practicable concrete slabs to be levered;
• hoarding to be installed around the conveyor to minimise noise emitted when loading;
• concrete pumps will be located so as to minimise potential adverse effects at sensitive receptor locations whilst taking into account logistical restrictions;
• all deliveries to and from the site will gain access via Clareville Street;
• where possible rebar will be cut to the required lengths prior to site delivery to minimise any necessary site trimming;
• hydraulic or pneumatic shears will be used in preference to angle grinders when trimming rebar where practicable; and
• all HGV movements associated with the worksite will only take place during normal working hours, unless otherwise agreed and approved RBKC.

3.7 Site Specific Dust Control Measures

• dust generated by the construction process will be suppressed via a fine directional spray jet of water aimed at the source;
• wetting down of material to be transported by conveyor;
• cutting equipment to be used with water suppressant and/or suitable extract system;
• no burning of waste wood or other materials on site;
• the stockpiling of dust generating materials on site will be minimised;
• powders will be sealed when not in use;
• immediate clean-up of spillages of dusty materials in place;
• wet brushing techniques will be used for cleaning;
• regular checks for visual observation of dust and soiling within 50m of site;
• all mobile vehicles should comply with the standards of the Low Emission Zone;
• dust deposition and/or soiling monitoring during construction phase;
• no vehicle idling (unless required e.g. concrete wagon); and
• use of mains or battery powered plant where practicable.
4. MITIGATION

The evaluation of the suitability of the contractors to undertake the project will include an assessment of the ability of the contractors to manage their works in an environmentally responsible manner that preserves the reputation of the Client and is protective of the public and the surrounding neighbourhood.

This Noise, Dust and Vibration Assessment will be provided to contractors tendering for the works and they will be required to adopt the recommendations of this document, RBKC’s CL7 Policy and the BS.

As part of the tender requirements the contractor will be required to conform to all relevant legislation and guidance including British Standards. Particular reference will be made to BS5228 and the Mayor of London’s SPG: The Control of Dust and Emissions during Construction and Demolition (July 2014). All relevant measures identified in this document should be followed including but not limited to the below.

4.1 Neighbourhood Liaison

It is recognised that early liaison and effective communication with people who may be affected by the works is essential to maintain good neighbourhood relations. The local residents association and neighbouring properties have been notified of the works and comments welcomed on construction methods detailed in the CTMP. This is explored further in the Neighbourhood Consultation Statement submitted with this application.

The maintenance of good relations with neighbours and implementation of a programme of ongoing liaison and respect with regards to the local environment and residences will form an important aspect of the successful management of the project.

The names and contact telephone numbers and email addresses of all Site personnel with responsibilities for both supervision and management of the Works shall be notified to the Director of Environmental Health (DEH) or the Officer and will be displayed on the site hoarding.

The following actions will be taken:

- Prior to the commencement of any site works, occupiers surrounding the site will be notified of the nature and duration of works to be undertaken. The name and contact details of a person responsible for the site works will be made available for enquiries and complaints for the entire duration of the works and updates of work will be provided regularly.

- Any complaints will be logged, fully investigated, and responded to quickly, advising what action has been taken. If necessary, complaints will be reported to the relevant department of the RBKC;

- Regular Monthly Newsletters will be distributed around the neighbourhood; and

- A Public notice board will be located on the site hoarding providing contact details of the Site manager, a 24 hour telephone number for emergencies, and details of the site working hours.
4.2 Air Quality and Dust Risk Assessment

In accordance with The Control of Dust and Emissions during Construction and Demolition Supplementary Planning Guidance (SPG) Mayor of London July 2014 an Air Quality and Dust Risk Assessment has been undertaken for the project at this planning stage to provide a summary of the risk to soiling, health and the natural environment from the proposed demolition, earthworks, construction and trackout activities.

In accordance with Chapter 4 of the Mayor’s SPG the risk category of these works has been evaluated following the general principles of the Institute of Air Quality Management’s (IAQM) 2014 Guidance on the Assessment of Dust from Demolition and Construction.

The proposed works are of a small scale and the dust emission magnitude is considered to be Small. However due to the proximity of the neighbours and without mitigation measures they could result in nuisance at a local level and present a cumulative impact.

**Demolition** – The scale of the demolition is Small (<20,000m³, <10m above ground) however it is acknowledged that the construction material has some potential for dust to be generated;

**Earthworks** - The scale of the earthworks is Small (the site area is <2,500m², the soil type is sand and gravel, small numbers of earth moving equipment will be used, the total material to be moved will be <10,000 tonnes);

**Construction** - The scale of the construction is Small (<25,000m³);

**Trackout** – The potential impact is Small as the materials are to be directly transferred into waiting vehicles on the road, and no tracking on road is to be carried out by any excavation plant.

The Sensitivity of the receptors are considered to be Medium due to the immediate proximity neighbouring garden areas and residential uses (with 1-10 receptors <20m from the property).

The Human Health Impact sensitivity is considered to be Low based on an assumed Annual Mean PM10 concentration of <28µg/m³ (RBKC Modelled Annual Mean Concentrations of Particulate Matter).

The Ecological Sensitivity of the area is considered to be Low.

Based on Tables 4.6-4.9 of the Mayor’s SPG the risk categories are as follow

<table>
<thead>
<tr>
<th>Potential Impact</th>
<th>Risk</th>
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<tbody>
<tr>
<td></td>
<td>Demolition</td>
</tr>
<tr>
<td>Dust Soiling</td>
<td>Low Risk</td>
</tr>
<tr>
<td>Human Health</td>
<td>Low Risk</td>
</tr>
<tr>
<td>Ecological</td>
<td>Low Risk</td>
</tr>
</tbody>
</table>
5.3 Demolition and Construction Monitoring

Throughout demolition and construction, a programme of monitoring shall be implemented to ensure that condition limits are not exceeded and that all the relevant thresholds.

The site management shall carry out regular site inspections to monitor compliance with air quality and dust control procedures, record inspection results, and make an inspection log available to the local authority when asked. Increase the frequency of such monitoring if circumstances that may result in higher emissions (e.g. prolonged dry weather) occur.

5.4 Training

The contractors operating on site will be expected to demonstrate that they have undertaken appropriate training of their staff to ensure that they are aware of the measures that are to be taken on site to minimise noise, vibration and dust generation.

All employees should be advised regularly of the following, as part of their training:

- The proper use and maintenance of tools and equipment and in particular, sound-reduction equipment;
- The positioning of machinery on site to reduce the emission of noise to the neighbourhood and to site personnel;
- The avoidance of unnecessary noise when carrying out manual operations and when operating plant and equipment;
- The protection of persons against noise;
- The operation of sound measuring equipment (selected personnel).

5.5 General Measures to be adopted

Hours of Work

The following standard permitted hours would be followed for Site work: 08:00 to 18:00 hours (Monday to Friday);

09:00 to 13:00 hours (Saturday); and

No working is permitted on Sundays or Bank Holidays.

High impact activities

There is minimal percussive work and boring equipment taking place at 14 Clareville Street. We are not piling but rather underpinning by hand. However, any which is likely to propagate noise and vibration within adjacent residential dwellings, shall only be carried out between:

- 09:00 - 12:00 (Monday to Friday);
- 14:00 - 17:00 (Monday to Friday) or at other times as agreed; and
- At no time Saturday or Sunday.
Noisy Work

As per RBKC Code of Construction Practice - Minimising the Impact of Noise, Vibration and Dust adopted in April 2016 the following hours for noisy work audible outside the site boundary will be observed:

- 08.00 and 18.00 Monday to Friday, and
- At no time Saturday or Sunday.

Pre-site preparation

Prior to the commencement of the works the specialist ground works contractor will provide detailed method statements for all aspects of the construction for approval by the engineer. These statements will address all the site specific procedures described in the previous sections to necessary to minimise any noise and vibration that may affect the neighbouring properties. The contractor shall also:

- Identify responsible person in charge of environmental matters;
- Erect solid barriers at the site boundary;
- Erect effective barriers around dusty / noisy activities; and
- Ensure machinery, fuel and chemical storage and dust generating activities are not located close to boundaries and sensitive receptors if at all possible.

Vehicles

- The frequency of vehicle movement will be confirmed by the chosen contractor and approved by the council before works commence;
- All mobile vehicles associated with the demolition / construction should comply with the standards of the London Low Emission Zone;
- Avoid unnecessary revving of engines, all vehicles should switch off engines when not required - no idling;
- Manufacturers’ enclosure panels need to be kept closed;
- Start up plant and vehicles sequentially rather than all together;
- Care should be taken to site equipment away from noise-sensitive areas;
- Where possible, loading and unloading should also be carried out away from such areas;
- The movement of plant onto and around the site should have regard to the normal operating hours of the site and the location of any noise sensitive receptors as far as is reasonably practicable;
- Where possible minimise noise from audible reversing alarms by planning vehicle movement routes around site;
- All loads entering and leaving site to be covered;
- The exposure of wheels to soil will be limited. On this basis wheels will be hand cleaned when required. A wheel wash will be provided to minimise dirt on the public highway; and
• The footpaths adjacent to the site will be cleaned each evening.

Equipment

• Non-road mobile machinery (NRMM) of net power between 37kW and 560kW shall conform to the requirements set out in Chapter 7 Mayor of London’s SPG The Control of Dust and Emissions during Construction and Demolition (July 2014);

• Compressors and generators – the compressor or generator Manufacturers’ enclosure panels need to be kept at the center of the site and not on the road. It should be kept closed, with the metal casing acoustically dampened and an acoustic screen shall be placed between the equipment and noise sensitive areas; Compressors should be kept at the center of the site, on dampers

• Concrete mixing and batching – where possible this should be done behind a barrier and when filling with aggregate this should not be allowed to fall an excessive height. Concrete mixer drums should not be hammered.

• Noise Reduction Enclosures – where noise reduction enclosures are employed they shall follow the guidance provided in section B2 of BS5228-1 to the satisfaction of the Director of Environmental Health or Officers nominated by him.

Demolition

• Sheet and screen buildings with suitable material and where possible strip inside building before any areas of demolition begin;

• Ensure that a specialist contractor removes any asbestos before demolition;

• Materials should be removed from site as soon as possible.

• All brickwork and concrete demolition work is to be constantly watered to reduce any airborne dust.

• Demolished materials are to be moved to a stockpile area prior to removal via conveyor belt to a waiting construction vehicle.

• The pavement in front of the property is to be washed and cleaned down each day.

• Any debris or dust / dirt falling on to the street and public highway will be cleared as it occurs by designated cleaners and washed down fully every night.

Chutes

• Minimise drop heights to control the fall of materials by using variable height electrical conveyors or chutes;

• Regularly damp down surfaces with water;

• Completely enclose chutes whenever possible

Waste Disposal / Burning

• No bonfires;

• Segregate waste at source and recycle/dispose of in accordance with legislation.
Excavation and earthworks

- All dusty activities should be damped down, especially during dry weather;
- Temporarily cover earthworks if possible;
- Minimise drop heights to control the fall of materials; and
- Only remove secure covers in small areas during work and not all at once.

Stockpiles

- Make sure that stockpiles exist for the shortest possible time;
- Do not build steep sided stockpiles or mounds or those that have sharp changes in shape;
- Keep stockpiles or mounds away from the site boundary, sensitive receptors and surface drains; and
- Wherever possible, enclose stockpiles or keep them securely sheeted.

Cutting and grinding

- Ideally, cutting, grinding and sawing should not be conducted on-site and prefabricated material and modules should be used;
- All equipment should use water suppressant or suitable local exhaust ventilation systems;
- Use dust extraction techniques where available;
- All other equipment should be fitted with water suppressant systems;
- Use local exhaust ventilation; and
- Service all fans and filters regularly to ensure they are properly maintained.

Concrete Pours

- In order to avoid overruns past the site operating hours the pour size and concrete workability shall be considered.
- The Site shall enter into a written protocol with the concrete supplier regarding timing of deliveries to ensure works can be completed within the permitted hours.
- The protocol shall be deposited with the Director of Environmental Health or Officers nominated by him.
- For basement works concrete shall be placed by gravity feed wherever practical. Failing this the position and location and acoustic shielding of any concrete pumps shall be as agreed with Director of Environmental Health or Officers nominated by him.