

**MONITORING PLAN
BILLET ROAD
REDBRIDGE
BELLWAY HOMES
MP-21912S-23-86
MARCH 2023**

IDOM



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SECTION 1 INTRODUCTION

1.1 IDOM Merebrook Limited (IDOM) has been commissioned by Bellway Homes Limited ('the Applicant') to produce a Monitoring Plan to support the redevelopment of an existing commercial development in Redbridge.

1.2 The proposed development description is as follows:

'The application site relates to Parcels A & B of the wider 'Land at Billet Road' opportunity site. This wider opportunity site is allocated within the Redbridge Local Plan for new homes, new health / community uses and new open space. Parcels A & B measure approximately 10.23ha in area and currently comprise scrubland and several buildings in the north which are in commercial use.

Bellway Homes has secured control of Parcels A & B of the wider opportunity site with the intention of delivering these for residential development. A large area of these parcels was historically used as an unregistered and uncontrolled landfill. Ground contamination assessments have been undertaken which have confirmed the extent of the historic landfill and have identified a wide variety of materials at different stages of decay. The proposed strategy for dealing with this is to introduce a layer of clean material and to surcharge this and the historical landfill below to make the ground stable and safe for future users.

Bellway Homes is submitting a planning application for these enabling works in advance of any future planning application(s) for comprehensive re-development of Parcels A & B to reduce the construction programme to lessen any potential impacts on the local area, and to help deliver much needed new homes quicker.'

1.3 The scope of the proposed enabling works is summarised below:

- i.* Construction of an inground barrier (to contain the existing landfill); and
- ii.* Formation of a development platform.

1.4 The following reports, completed by others have been reference in compiling this document:

- i.* Ardent Consulting Engineers; September 2022; Noise and Vibration Assessment; Ref: 2001171-05;
- ii.* Ardent Consulting; September 2022; Air Quality Assessment (AQA); Ref; 2001171-04; and
- iii.* Bellway, October 2022; Construction Environmental Management Plan Rev 2; Ref: C0741-105/CMP1/001 Rev 2.

1.5 IDOM have also produced the following reports which can be provided upon request:

- i.* Geo-environmental Assessment – Parcels A and E (ref: GEA-21912s-20-241) dated July 2020 [note: the small field on the northwest of the site has been omitted from the onward development proposals];
- ii.* Geo-environmental Assessment – Parcel B (ref: GEA-21912s-20-255) dated June 2020;
- iii.* Geo-environmental Assessment – Parcel A and B (ref: GEA-21912s-22-173 Rev C) dated March 2023; and
- iv.* Detailed Quantitative Risk Assessment and Remedial Method Statement, Billet Road, Romford (ref: RMS-21912S-22-366, Rev B) Dated March 2023.

1.6 This document is intended as a Monitoring Plan to be submitted to the Environment Agency.

SECTION 2 SITE SETTING

2.1 SITE DESCRIPTION

- 2.1.1 The site is located at Billet Road in Romford. The surrounding area is predominantly grassland and residential properties.
- 2.1.2 The site is an opportunity site known as 'Land at Billet Road' and comprises two parcels (A and B).
- 2.1.3 The site occupies an area of approximately 10 hectares located at National Grid Reference ⁵47307, ¹89502 and indicated on the drawing presented as Figure 1.
- 2.1.4 The site is bounded as follows:
 - i.* To the north by Billet Road with farmland beyond;
 - ii.* To the east by residential properties;
 - iii.* To the south by the Green Belt Recreation Ground with the A12 (Eastern Avenue) and residential properties beyond; and
 - iv.* To the west by West Ham Little Heath Sports ground and residential properties.

SECTION 3 ENVIRONMENTAL MONITORING

3.1 INTRODUCTION

- 3.1.1 The potential hazards, environmental compliance criteria and assessment procedures are presented in the sections below.

3.2 DUST MONITORING

- 3.2.1 Statutory nuisance provisions with regards to dust are contained in the Environmental Protection Act 1990. Dust can give rise to a statutory nuisance if it is considered to be prejudicial to health or a nuisance. Controls for air quality are covered by the provisions of the Environment Act 1995, Clean Air Act 1993 the Health and Safety at Work Act 1974, the Environmental Protection Act 1990 and the UK Air Quality Strategy.
- 3.2.2 An air quality assessment (AQA) (ref: 2001171-04) has been prepared by Ardent Consulting Engineers (Ardent).
- 3.2.3 Based on the screening criteria set out by the GLA and IAQM, it is considered necessary to carry out a dust risk assessment as there are sensitive human receptors located within 350 m of the site boundary and / or within 50 m of the roads in which dust may be tracked out by development-generated vehicles.
- 3.2.4 The IAQM have produced guidance which includes a methodology for identifying the risk magnitude of potential dust sources associated with demolition, earthworks, construction and trackout. The risk magnitude is then used to identify which mitigation methods are required in order for the residual effect to be 'not significant'.
- 3.2.5 The enabling works have a potential for emissions of dust and PM₁₀ which could have an impact on nearby existing sensitive receptors. As a result, dust monitoring and management is required.
- 3.2.6 Due to the site and nature of works being 'high risk' in regard to dust generation, mitigation methods from the IAQM guidance will be put in place before any works begin (which can be found within Ardent's AQA).
- 3.2.7 As the proposed works at the development site are going to involve significant groundworks and vehicle movements, the potential for dust is expected to be high and therefore qualitative and quantitative monitoring is necessary.
- 3.2.8 Throughout each phase of the project, communication with the local community will be key. To assist with this, the Principal Contractor will hold regular open meetings to which local residents, Ward Councillors and stakeholders will be invited, to discuss on-going works.
- 3.2.9 Plans of programmed works will be communicated in advance with neighbouring parties, with the opportunity to discuss any issues or concerns prior to works taking place.
- 3.2.10 A site notice will be displayed at all times highlighting the names and contact details of all key personnel responsible for dust issues arising from the site. The notice will also display the head/regional office contact information.

3.2.11 Qualitative Monitoring

3.2.11.1 An inspection for visible dust emissions in the vicinity of the site boundary (internal and external) will be conducted and recorded at least once on each working day. This involves observation of dust deposition onto a surface (car bonnets and roofs, window sills and lamp posts/traffic cones) and dispersion on and off-site. The frequency of dust inspections will increase when factors that influence the dust potential increase. This includes the weather (dry periods with high wind speeds) and site activities that increase the potential for dust release.

3.2.12 Quantitative Monitoring

3.2.12.1 As the site that has a high risk of dust potential, monitoring of PM₁₀ will also be undertaken along with the visual inspections.

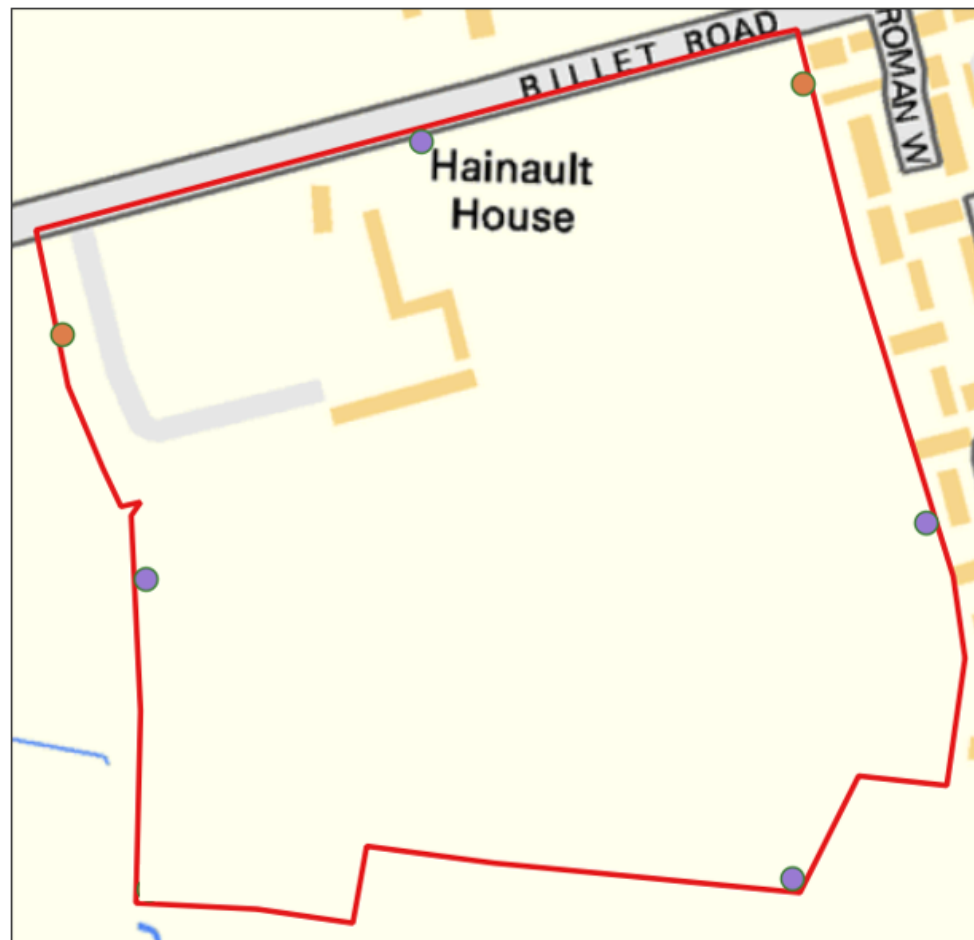
3.2.12.2 A period of baseline monitoring prior to the start of any works will allow existing conditions to be defined more accurately and will assist with setting 'trigger thresholds'. The baseline monitoring will take place for a minimum of three months prior to works and conditions will be noted to gather a more accurate analysis of baseline conditions.

3.2.12.3 The following monitoring instruments will be used to monitor dust deposition and PM₁₀ levels throughout the works:

- i.* Two PM₁₀ fixed dust monitoring stations (coloured orange) (also capable of recording noise); and
- ii.* Four frisbee style dust deposition gauges (coloured grey).

3.2.12.4 The monitoring locations (as shown in Figure 1) will remain the same for the baseline data collection and for the monitoring once the works begin.

Figure 1: Proposed dust monitoring locations



3.2.12.5 The PM₁₀ monitoring equipment will provide 1-hourly mean concentrations of PM₁₀. With reference to the IAQM guidance, it is recommended that a Site Action Level (SAL) of 190 µg/m³ measured as a 1-hour mean should be used. If the site action level is exceeded, text alerts will automatically be sent to site staff.

3.2.12.6 For the four frisbee dust deposition gauges, it is recommended that a SAL of 200 mg/m²/day should be used.

3.2.12.7 On a monthly basis, a report will be prepared to show the dust and PM₁₀ monitoring data levels. This can be analysed and any activities/events that occurred on dusty days should be noted.

3.3 NOISE MONITORING

3.3.1 The works will adhere to the legislative requirements on noise and vibration contained within the Control of Pollution Act 1974 and the statutory nuisance provisions contained within the Environmental Protection Act 1990 (s79-82). In this context, compliance with BS 5228:1 2009 + A1 2014, Code of Practice on Construction and Open Sites will be required.

- 3.3.2 Noise generating activities on site shall be restricted to Monday to Friday 08:00 to 18:00 and Saturdays 08:00 to 13:00, unless prior agreement is sought with London Borough of Redbridge (LBR).
- 3.3.3 Measures will also be taken to limit vibration due to site activities, to protect noise sensitive receptors, users of buildings close-by and passers-by from nuisance or harm. As required, additional measures will be undertaken (in accordance with BS:5228:2009 Part 2) to protect structures from physical damage.
- 3.3.4 Noise prevention measures and procedures will be implemented on site to minimise noise generation by the construction works, including:
- i.* Cutting operations or other noisy tasks will be minimised through off-site fabrication wherever practicable. Where there may be a risk of excessive sound levels localised shielding/shrouding will be employed in accordance with BS:5228;
 - ii.* Any additional or alternative working hours for operational reasons will be subject to Local Planning Authority consent. Any additional or alternative working hours needed for emergency or health and safety reasons will be advised to the Local Planning Authority as soon as is reasonably practicable;
 - iii.* Use of radios or other sound systems or tannoys will not be permitted anywhere on the site; and
 - iv.* For earth-moving plant such as bulldozers, compactors, dump trucks, dumpers, excavators, graders, loaders and scrapers the source of noise is normally the engine. Sound reduction equipment will be used. Manufacturers' enclosure panels will be kept closed to cover engines when they are in use or idling.
- 3.3.5 Strict controls on the sequencing of works and providing noise protection will be developed on an activity-by-activity basis. These will include:
- i.* Static plant will be positioned away from noise sensitive receptors;
 - ii.* Use of modern, well-maintained plant and machinery;
 - iii.* Machines in intermittent use will be throttled down to a minimum;
 - iv.* Materials will not be dropped from excessive heights or, alternatively, dropping zones will be screened; and
 - v.* Mobile plant will be turned off when not in use.
- 3.3.6 Obligations will also be fulfilled under the relevant Noise and Vibration at Work Regulations in order to protect on-site personnel.
- 3.3.7 Prior to commencement of works, a method statement setting out type of plant, proposed operating hours and proposed control methods, in line with BS5228, will

be submitted. The method statement will ensure noise and vibration levels at the nearest sensitive receptors will comply with agreed thresholds to protect noise sensitive receptors, and structures from physical damage.

- 3.3.8 The use of any plant or equipment required for any emergency situation which causes a departure from the method statement will be notified to LBR as soon as practicable.
- 3.3.9 A noise and vibration assessment (ref: 2001171-05) has also been prepared by Ardent.
- 3.3.10 Ardent have created four noise monitoring locations in Figure 2 below in which ambient noise levels will be monitored in order to identify a baseline noise level for the site and the surrounding area.

Figure 2: Noise monitoring locations



- 3.3.11 Once baseline noise levels have been identified, they will be rounded to the nearest 1 dB and compared to Table 1 to assign a threshold value for each time period.
- 3.3.12 BS5228 parts 1 and 2 outline the code of practice for noise and vibration control on construction and open sites. It shows noise and vibration level criteria for works such as those for this development (residential dwellings). Table E.1 below sets out the noise limits depending on pre-existing ambient noise levels in the vicinity of the site.
- 3.3.13 The 'ABC' method of BS5228 is shown in Table 1 below which shows three different threshold values for each period (night-time, daytime and evenings and weekends).

Table 1: Table E.1 from BS5228

Assessment category and threshold value period	Threshold value, in decibels (dB) $L_{Aeq,T}$ $(L_{Aeq,T})$		
	Category A ^{A)}	Category B ^{B)}	Category C ^{C)}
Night-time (23.00–07.00)	45	50	55
Evenings and weekends ^{D)}	55	60	65
Daytime (07.00–19.00) and Saturdays (07.00–13.00)	65	70	75

NOTE 1 A potential significant effect is indicated if the $L_{Aeq,T}$ noise level arising from the site exceeds the threshold level for the category appropriate to the ambient noise level.

NOTE 2 If the ambient noise level exceeds the Category C threshold values given in the table (i.e. the ambient noise level is higher than the above values), then a potential significant effect is indicated if the total $L_{Aeq,T}$ noise level for the period increases by more than 3 dB due to site noise.

NOTE 3 Applied to residential receptors only.

^{A)} Category A: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are less than these values.

^{B)} Category B: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are the same as category A values.

^{C)} Category C: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are higher than category A values.

^{D)} 19.00–23.00 weekdays, 13.00–23.00 Saturdays and 07.00–23.00 Sundays.

3.3.14 Control measures will focus on the source as required by the London Mayor’s SPG and in line with best practice noise control. All best practice methods to control noise will be employed and regularly reviewed.

3.3.15 Once works have started, the developer will ensure regular communication with neighbouring sensitive receptors is maintained and any feedback acted upon where appropriate.

3.4 **GAS MONITORING**

3.4.1 The surcharging will load and hence strengthen the soils, whilst the band-drains will enable moisture to escape from the soils and facilitate compaction. The compaction will greatly reduce the air voids in the soils and limit the potential for ground gas generation. The principal source of ground gas appears to be gross hydrocarbon contamination rather than the landfill material, with no positive flow detected. As a result, it is considered that the loading of the landfill will not result in the generation of ground gas or the creation of a new pathway. This will be monitored during the surcharge and development process.

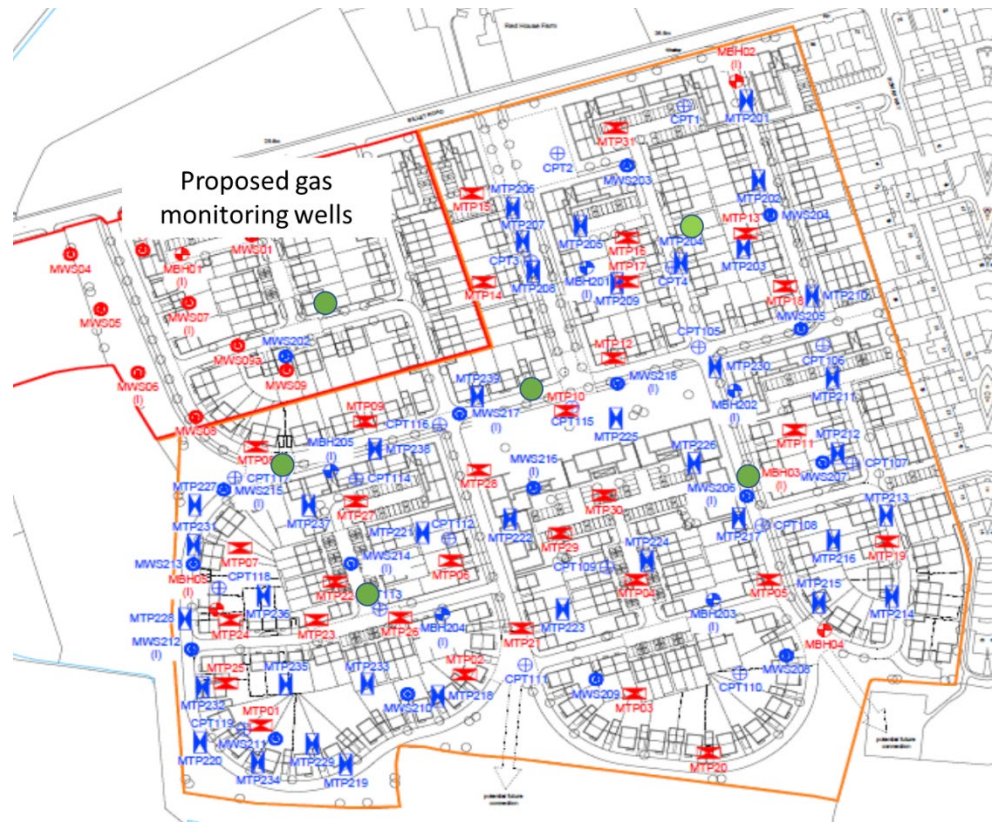
3.4.2 During filling, ground gas monitoring will be undertaken at four locations on a monthly basis. The monitoring locations are illustrated on Figure 12. Any increase in ground gas concentrations or flow rates will be investigated and mitigation measures put in place. This could include the excavation of a ventilation trench, or localised excavation of soils. Such measures are considered unlikely to be necessary.

Figure 3: Ground gas monitoring locations during filling.



3.4.3 Following the completion of filling, six rounds of ground gas monitoring will be undertaken at the locations illustrated on Figure 4. The ground gas concentrations will be used to inform the final gas protection requirements for the proposed development.

Figure 4: Ground gas monitoring locations.



- 3.4.4 Levels of methane, carbon dioxide and oxygen will be recorded in each standpipe, together with associated parameters including borehole flow and ambient air pressure. The depth to water will also be recorded to ensure an adequate response.
- 3.4.5 The results of gas monitoring will be contained within completion reports for each phase.

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