NOISE IMPACT ASSESSMENT

101 Amington Road, Birmingham B25 8EPKiely Bros. Ltd

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1.0	06/12/2023	TB		Internal draft
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1.3	03/05/2024	TB	KBL	Updates to site plan in Appendix I

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1 Introduction

1.1.1 Oaktree Environmental have been commissioned by Kiely Bros. Ltd to undertake a Noise Impact Assessment (NIA) for their waste management site at 101 Amington Road, Birmingham B25 8EP. The NIA accompanies an application for a variation of EPR/FB3403ZY which is operated by Kiely Bros. Ltd.

1.1.2 The NIA is required for a variation to Environmental Permit (EP); Ref. EPR/FB3403ZY which is currently operated as an A11 Household, Commerical & Industrial (HCI) waste transfer station with treatment. The operator is seeking to treat more 75 tonnes per day of this waste for a mix of recovery and disposal which will lead to the site falling part of the Industrial Emissions Directive (IED) Regulations which leads the requirement for this permit variation. The site will be operated under Section 5.4 (a)(iii) and (b)(ii) - non-hazardous waste of the IED Regulations.

1.1.3 The main issue of noise could arise from, but not limited to the following:

i) Waste reception and tipping areas;
ii) Manoeuvring of vehicles around the site
iii) Operation of mechanical treatment plant and treating waste
iv) Storage and loading/unloading areas

1.1.4 The author of the report is Thomas Benson, a Principal Consultant at Oaktree Environmental Limited, with 9+ years' experience in the environmental sector, having graduated in Summer 2013. I am a full member of the Institute of Environmental Sciences as well as being an Associate Member of the Institute of Acoustics. I have worked in the area of acoustics in both the private and public sector, I was previously employed as a regulator on behalf of Salford City Council from May 2016 to August 2017 having worked as a planning consultee, primarily commenting with regards to noise and contaminated land issues. This involved the review of Noise Impact Assessments, Noise Management Plans and Verification documents submitted as part of the planning process, design of bespoke noise related planning conditions as well as the provision advice to colleagues in the planning department. It was during this time that I gained the Certificate of Competence in

Environmental Noise Measurement from the University of Liverpool by October 2016 having initially undergone internal training. Since January 2018, I have worked for Oaktree Environmental, providing Noise Impact Assessments, Noise Management Plans in support of planning and permitting applications, as well providing general acoustic advice to clients, for example in response to complaints, site design etc. I have also acted as expert witness in several planning hearings and appeals. Copies of IOA certificates or IOA membership can be provided upon request.

1.2 Site Description and Location

1.2.1 The site is located at 101 Amington Road, Birmingham B25 8EP as shown on Drawing Nos. AMI/918/01 & 02. The national grid reference for the site is SP113684761.

1.2.2 The site is operated as a bespoke permit and will accept fines and residual waste from their facility at Speedwell Road. The waste accepted will undergo further treatment by way of shredding, eddy current separation and blowing to turn the refuse derived material (RDF) into a solid recovery fuel (SRF) for incineration.

1.3 Hours of Operation

1.3.1 It is proposed to operate the site for the following activities during the hours below:

- 08:00 – 20:00 – Waste acceptance and removal of waste (all areas of the site)
- 08:00 – 20:00 Monday – Saturday = Shredding in external areas if the site
- 24/7 = Use of mechanical treatment plant inside the unit with roller shutters closed

1.3.2 It must be noted, the site is currently operating to the following hours for the current use of the site so the proposed as part of this NIA is essentially the same as existing.

1.3.3 During times where the site is closed or not in operation, the site will be locked and secured to prevent unauthorised vehicular and/or pedestrian access.

1.4 Environmental Regulation

1.4.1 An Environmental Permit (EP) will be required to be in place for the site, with day-to-day operations regulated by the Environment Agency (EA). Potential impacts on air, land and water will be fully controlled and regulated under the EP.

1.4.2 In addition to the existing permitted operations, part of the wider site not included in the permit boundary involves the acceptance and treatment of wood which is used as fuel to feed an incineration plant. This activity is regulated under a permit issued by the Local Planning Authority and not under the remit of the EA. The location of this area is shown on AMI/918/03

2 Planning Policy

2.1 Environment Agency Guidance

2.1.1 This document has been produced in accordance with the EA's guidance "Noise and vibration management: environmental permits" updated 31 January 2022.

2.2 Noise Policy Statement for England

2.2.1 The Noise Policy Statement for England (NPSE), March 2010, sets out the Government's long-term noise policy, the aims of which are:

"Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:

- *Avoid significant adverse effects on health and quality of life:*
- *Mitigate and minimise adverse effects on health and quality of life;*
- *Where possible, contribute to the improvement of health and quality of life."*

2.2.2 The first aim of the NPSE is to avoid significant adverse effects, considering the shared UK principles of sustainable development.

2.2.3 The second aim provides guidance on the scenario when the potential noise impact falls between the LOAEL (Lowest Observed Adverse Effect Level) and the SOAEL (Significant Observed Adverse Effect Level), in which case it is stated*, "all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also taking into account the guiding principles of sustainable development".* However, it is also stated, *"This does not mean that such adverse effects cannot occur"*.

2.2.4 With regards to the SOAEL, the document states, *"It is not possible to have a single objective noise-based measure that defines SOAEL that is applicable to all sources of noise in all situations"*, thus acknowledging that this is very much dependent on the noise source, the receptor, and the time of day. Therefore, the NPSE provides the necessary policy flexibility until further guidance / evidence is available.

2.2.5 Other guidance will need to be taken into account when applying the principles of the NPSE, as well the nature of the proposed development and its specific circumstances.

2.3 National Planning Policy Framework

2.3.1 The NPPF, revised in July 2021, states that Planning policies and decisions should also ensure that new development is appropriate for its location, taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

- Mitigate and reduce to a minimum potential adverse impact resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;
- Identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.

2.3.2 Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or 'agent of change') should be required to provide suitable mitigation before the development has been completed.

2.3.3 The revised document also makes reference to the Noise Policy Statement for England.

2.4 Planning Practice Guidance – Noise

2.4.1 Further to the guidance set out in the NPPF, Planning Practice Guidance for Noise advises that the Local Authority should consider the following when decision making:

- Whether or not a significant adverse effect is occurring or likely to occur.
- Whether or not an adverse effect is occurring or likely to occur.
- Whether or not a good standard of amenity can be achieved.

2.4.2 As previously discussed within the NPSE, the guidance discusses the LOAEL and SOAEL and provides scenarios that could be expected for the perception level of noise, plus the associated activities that may be required to bring about the desired outcome. Again, as with the NPSE, no objective noise levels are provided for LOAEL or SOAEL.

2.4.3 It is stated that "the subjective nature of noise means that there is not a simple relationship between noise levels and the impact on those affected. This will depend on how various factors combine in any particular situation". These factors include:

- The absolute noise level of the source and the time of day it occurs.
- Where the noise is non-continuous (intermittent), the number of noise events along with any patterns of occurrence.
- The frequency of content and acoustic characteristics (tonality etc.) of the noise.
- The effects of noise on the surrounding wildlife.
- The acoustic environment of external amenity areas provided as an intrinsic part of the overall design.
- The impact of noise from certain commercial developments such as night clubs and pubs where activities are often at their peak during the evening and night.

3 Noise Assessment Criteria

3.1 In order to assess the impacts of existing road traffic and industrial noise from the proposed development, the following documents have been used:

- BS8233:2014
- BS4142:2014
- World Health Organisation (WHO) Guidelines on Community Noise

3.2 BS8233:2014

3.2.1 This document provides guidance on the relevant level of sound insulation required by a variety of building types affected by general environmental noise and provides recommendations for appropriate internal ambient noise level criteria for a variety of different situations including residential dwellings. The table below includes the proposed noise criteria within BS8233:2014 with regards to residential properties:

Table 3.1 - BS8233:2014 Internal Criteria

Activity	Location	07:00 – 23:00	23:00 – 7:00
Resting	Living rooms	35 $L_{Aeq, 16hour}$	-
Dining	Dining room	40 $L_{Aeq, 16hour}$	-
Sleeping	Bedroom	35 $L_{Aeq, 16hour}$	30 $L_{Aeq, 16hour}$

3.3 BS4142:2014

3.3.1 BS4142:2014 provides a method for “assessing and rating industrial sound” of an industrial/commercial nature. The method described in the standard uses the rating level from a noise source and the existing background noise level to assess the potential effects of sound on the residential premises upon which sound is incident.

3.3.2 Using this method, the background sound level is subtracted from the rating level. The resulting figure is assessed using the following guidance from the document:

- The greater the difference between the background sound level and the rating level, the greater the impact on the receptor.
- An exceedance of the background level of around 10dB, or more, is likely to be an indication of a significant adverse impact, dependent on the context.
- An exceedance of the background level of around 5dB is likely to be an indication of an adverse impact, dependent on the context.
- The lower the rating level compared to the existing background level, the less likely an adverse impact, or a significant adverse impact. Where the rating level does not exceed the background level, this is indicative of a low impact, dependent on context.

3.3.3 The document introduces a requirement to consider and report the uncertainty in the data as well as also including guidance for applying a correction/penalty for certain adverse acoustic features such as tonality, impulsivity or intermittency. The following table summarises the corrections based on the subjective assessment of the noise.

Table 3.2 - BS4142:2014 Corrections and Penalties

	Tonality	**Impulsivity**	**Other characteristics**
Just perceptible	+ 2dB	+ 3dB	
Clearly perceptible	+ 4dB	+ 6dB	
Highly perceptible	+ 6dB	+ 9dB	
Readily Distinctive against Residual Environment			+ 3dB

3.4 WHO Guidelines for Community Noise

3.4.1 The WHO Guidelines (1999) recommends indoor night-time guidelines in order to avoid sleep disturbance, the document states these to be 30 dB (LAeq) and 45 dB (LA_{fmax}) for continuous and individual noise events respectively.

3.4.2 The document states that the number of noise events should also be considered and that individual noise events should not exceed 45 dB (LA_{fmax}) more than 10 – 15 times per night.

3.4.3 The WHO document also recommends that steady, continuous noise levels should not exceed 55 dB (LAeq) for outdoor living areas (balconies, terraces etc.). However, in order to protect the majority of individuals from moderate annoyance, external noise levels should not exceed 50 dB (LAeq).

4 Background Noise Monitoring

4.1 Procedure and Monitoring Locations

4.1.1 A background noise survey was completed on the 3rd -6th March 2023 in accordance with BS 7445-1: 2003 by NOVA Acoustics Ltd who have been previously used by Oaktree Environmental Ltd for more longer-term monitoring.

4.1.2 Figure 4.1 below details the location of the monitoring positions.

Figure 4.1 - Site location and noise monitoring positions

4.1.3 Monitoring locations were chosen to be representative of the nearest noise sensitive receptors. Th monitoring equipment for moth of the monitoring locations was fixed onto a lamppost approximately 4m above ground level. For MP1 this is situated just outside 128 Amington Road. For MP2 this was fitted just between 50 and 52 Wharf Road.

4.1.4 Longer duration measurements were decided to be taken which gave a more accurate representation of the fluctuations of the background noise levels throughout the weekday and weekend periods. As previously discussed, BS4142:2014 provides significant weight to context when determining the level of impact.

4.2 Equipment Used During the Survey

4.2.1 Details of the equipment used during the survey are shown in the table below 2no. kits were used of the same type at the two monitoring locations:

Table 4.2- Survey Equipment

Description	Model	Manufacturer	Serial No.
SLM	CESVA	*SC420*	T250681
Calibrator	CESVA	CB006	*902442*

4.3 Weather

4.3.1 The weather during the background surveys is summarised in Tables 4.2 and 4.3 below, the weather conditions were noted by NOVA Acoustics Limtied at the set up and at the collection of the noise kits full description of the weather can be found in the image. Oaktree Survey Information which will be sent in conjunction with this report.

Table 4.3 – Weather Conditions at set up of the kit

Date	Wind Speed (max)	Cloud Cover	Temperature	Precipitation
Friday 02/03/2023	Max gusts of 2.3m/s	5-25%	4.8^{o}C	0.0mm

Table 4.4 – Weather Conditions at collection of the kit

Date	Wind Speed (max)	Cloud Cover	Temperature	Precipitation
Friday 06/03/2023	Max gusts of 2.2m/s	25-75%	4.5°C	1.5mm

4.4 Results

4.4.1 The results of the background noise monitoring survey are tabulated below in Tables 4.4 and 4.5. This gives the median LA90 results for the daytime and nighttime monitoring. Commentary on the background level and survey is included further on in Sections 4.5 and 4.6.

Table 4.5 -Weekday background monitoring results for MP 1.

Measurement Time	LA_{90} Range	Median LA90
02/03/2023-06/03/2023: 07:00-23:00	46.8-64.0	54.5
02/03/2023-06/03/2023: 23:00-07:00	44.5-54.9	47.4

Table 4.6 - Weekend background monitoring results for MP 1.

Measurement Time	LA_{90} Range	Median LA90
02/03/2023-06/03/2023: 07:00-23:00	47.5-58.6	50.7
02/03/2023-06/03/2023: 23:00-07:00	45.4-48.8	46.5

Table 4.7 -Weekday background monitoring results for MP 2.

Measurement Time	LA_{90} Range	Median LA90
02/03/2023-06/03/2023: 07:00-23:00	46.6-58.6	52.2
02/03/2023-06/03/2023: 23:00-07:00	49.8-54.8	50.8

Table 4.8 - Weekend background monitoring results for MP 2.

Measurement Time	LA_{90} Range	Median LA90
02/03/2023-06/03/2023: 07:00-23:00	46.5-53.8	50.0
02/03/2023-06/03/2023: 23:00-07:00	46.8-51.1	48.2

4.5 Existing Noise Climate at NOVA MP 1

4.5.1 During the monitoring the dominant noise source within the vicinity of the monitoring position was considered to be vehicular movements along Amington Road and the surrounding road network. Secondary sources include unloading/loading activities occurring to the west at "Jena Warehouse Europacking" including reversing alarms and impulsive events.

4.5.2 Occasionally commercial noise was audible in the form of distant bangs/crashes and audible plant noise (engines revving etc.) from the units located to the west and east of the monitoring location.

4.6 Existing noise climate at NOVA MP 2

4.6.1 During the monitoring the dominant noise source is the extract outlets atop "E Stokes" which are emitting a continuous tonal hum. Secondary sources include infrequent vehicular movements along Wharf Road and the surrounding road network. Reversing alarms and occasional impulsive events audible emanating from the northwest/west of unknown origin.

5 Noise Impact Assessment

5.1 Introduction

5.1.1 It is considered the most significant noise sources associated with the development are:

- Tipping of HGVs Internal/external source (20 movements throughout the day/night hours).
- Loading of HGVs internal and external (20 movements throughout the day/night hours).
- Eddy Current Separator internal source
- Shredder located in Area A internal
- Blower as part of Area C internal.
- MJ Shredder external source

5.1.2 The vast majority of operations will be undertaken within the waste reception and processing building, with the external areas being utilised primarily for storage of plant and wastes/materials.

5.1.3 Whilst the MJ Shredder is operating externally the operational hours for this will only be 6 hours in daytime hours with the roller shutter that is open during day time hours will be shut at 8pm.

5.1.4 The HGV movements are involved in the tipping into Areas 4-9 inside the main building having spoken too site management the estimate of 20 movements a day for tipping and 20 movements a day for loading is considered an overestimate of the likely movements.

5.2 Background Levels

5.2.1 With regards to background levels, BS4142:2014 states that "*the objective is not simply to ascertain a lowest measured background sound level, but to quantify what is typical during particular time periods"* and also *"In practice there is no "single" background sound level as*

this is a fluctuating parameter. However, the level for the assessment should be representative of the period being assessed".

5.2.2 With this in mind, the assessment will utilise the range of levels from Tables 4.4 and 4.5.

5.3 BS4142: Assessment

5.3.1 The CadnaA noise models were constructed using OS mapping Opendata and Google Earth satellite imagery, whilst topographical data was downloaded from DEFRA in the form of a digital terrain model.

5.3.2 The following assumptions/parameters are made within the models:

- The intervening land between the site boundary and residential properties was modelled with G = 0.0 as it was considered that the land is predominantly acoustically reflective.
- Buildings were set as acoustically reflective, with a reflection loss of 3 dB.
- Noise levels were determined at residential properties representing the nearest residential facades. These properties are modelled at a height of 4.0m.
- The predicted grid noise levels were also calculated as free-field, A-weighted, sound pressure levels. The noise contours generated within the model are also at a height of 2.0 m, assumed to be the worst-case scenario.
- Surrounding commercial properties heights are based on onsite observations and changes in elevation upon reviewing Google Earth Pro.
- Barrier heights and waste storage bays have also been modelled based on the details from the documentation supporting the planning application. These have been modelled as hard and reflective.
- The waste reception/processing building is modelled as 10m to the eaves with an internal surface area of 10,552m^2 with a low absorption figure. The structure is modelled as solid brick, calcareous sandstone 240mm.
- The front two roller shutters located on the northern façade will only be open during times of delivery through out the daytime hours. Closed at times where deliveries are not taken through out nighttime hours and during the day.

- The roller shutter on the eastern façade will be closed after 8pm, with shredding externally only occurring for 360 minutes through out day time hours 7am-8pm.

5.3.3 Table 5.1 below includes the measured noise levels for the anticipated activities, which have either been measured by Oaktree Environmental or provided by the manufacturer. It should be noted that octave bands will be utilised within the model. The table also includes relevant data from the CadnaA model (geometry, "on-times" etc.).

Table 5.1 – Measured levels of activities

Activity	Noise Level (LAeq)	Source/comments
Trommel	78.9 at 6m	Located within the processing/reception building. The assumptions with regards to this structure are detailed within Section 5.3.2. The activity has been measured by Oaktree Environmental at the site. It is assumed that the operation of the trommel will be constant (i.e. steady state).
Eddy current separator	78.5 at 7m	The activity is located within the waste processing/reception building. The assumptions with regards to this structure are detailed within Section 5.3.2. The activity has been measured by Oaktree Environmental at the site. It is assumed that the operation of the plant will be constant (i.e. steady state).
Shredder	81.2 at 2m	Located within the processing/reception building. The assumptions with regards to this structure are detailed within Section 5.3.2. The activity has been measured by Oaktree Environmental at the site. It is assumed that the operation of the shredder will be constant (i.e. steady state).
Tipping of HGVs	72.6 at 8m	Located to the east of the processing/reception building.

		The activity has been measured by Oaktree Environmental at a similar site. This activity is likely to be undertaken for a short duration throughout the day, however this has been modelled 240 minutes per day in order to provide a robust assessment.
Loading of HGVs	72.3 at 8m	The activity is located within the waste processing/reception building. The assumptions with regards to this structure are detailed within Section 5.3.2. The activity has been measured by Oaktree Environmental at a similar site. It is assumed that the operation of the plant will be constant (i.e. steady state). Of course, this is unlikely tobe the case in reality.
Blower	82.5 at 2.4m	Located within the processing/reception building. The assumptions with regards to this structure are detailed within Section 5.3.2. The activity has been measured by Oaktree Environmental at the site. It is assumed that the operation of the blower will be constant (i.e. steady state).
MJ Shredder (external)	81.2 at 2m	The activity has been measured by Oaktree Environmental a similar site. This has been modelled externally as a point source 2m in height. It is assumed that the operation of this source is constant within the model.

5.3.4 Tables 5.2 and 5.3 detail the predicted noise levels (in dB A) associated with the application site at the relevant receptors. Tables 5.4-5.7 overleaf detail the LA90 breakdown of results at each of the monitoring locations during weekday/weekend at daytime/nighttime hours.

5.3.5 These are based on the results of the modelling provided overleaf in Figures 5.1 and 5.2. Figures 5.1 and 5.2 detail the typical daytime and nighttime operations with on times.

Figure 5.2 – Calculated noise levels (LAeq) associated with the typical operation the site during the daytime

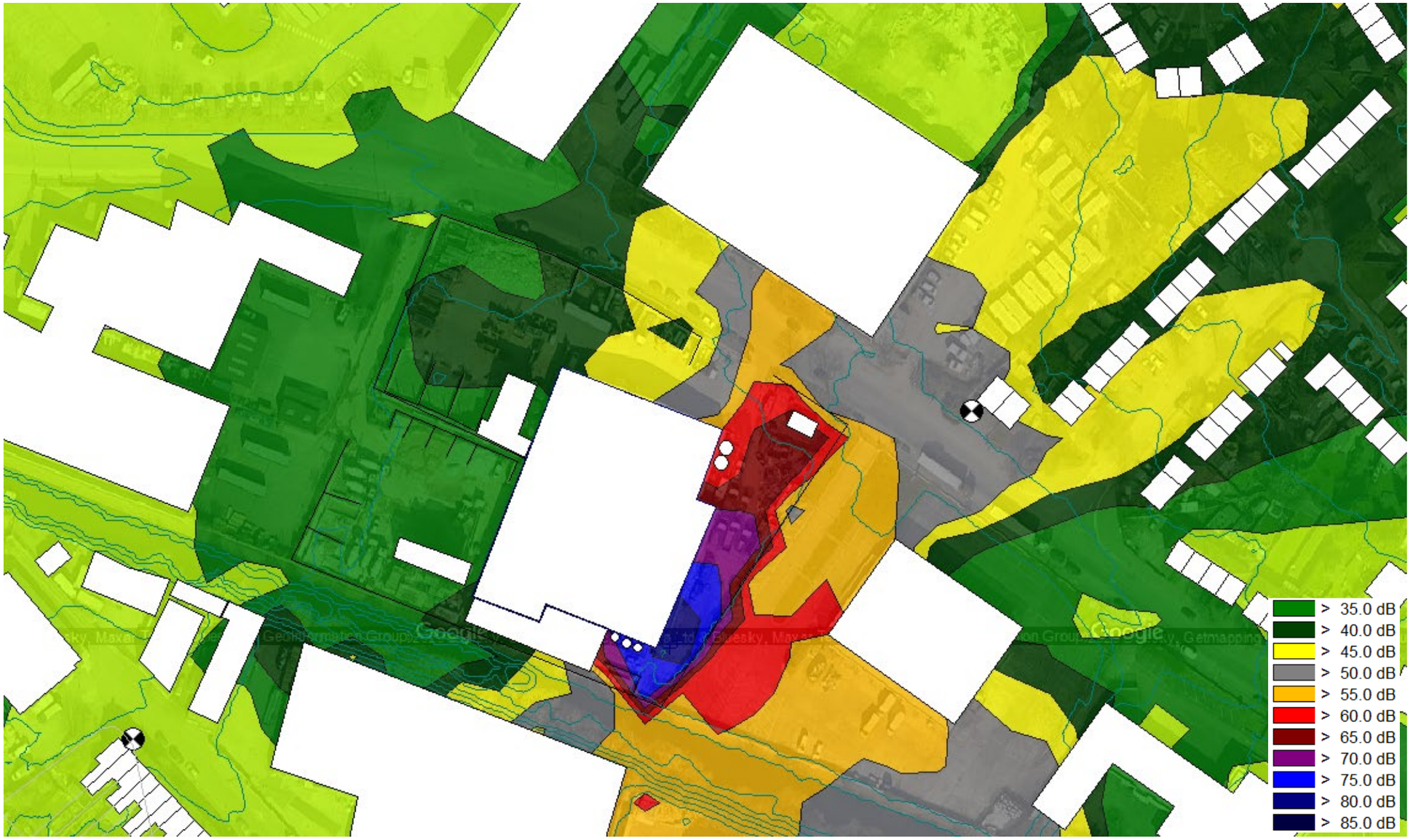
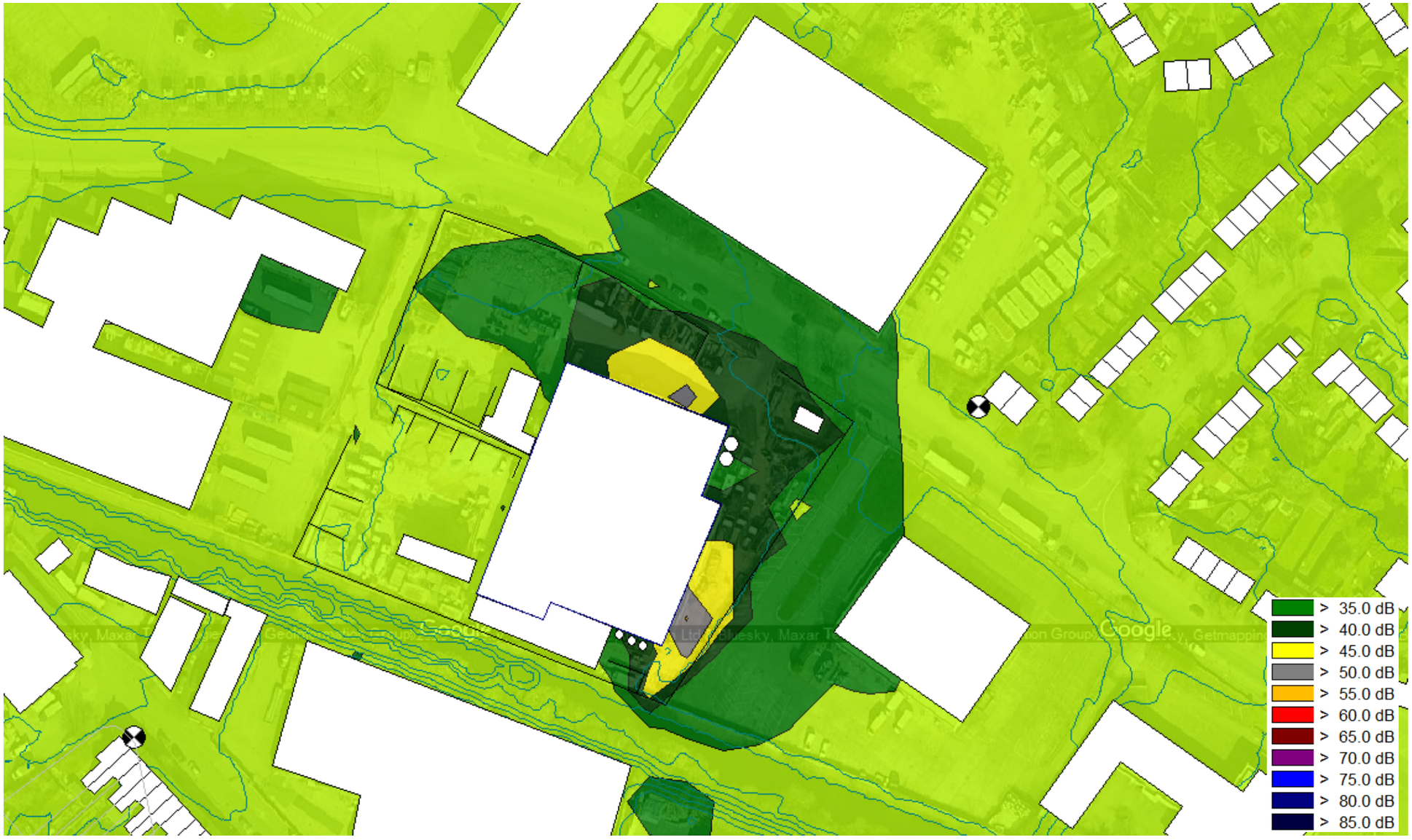


Figure 5.3 – Calculated noise levels (LAeq) associated with the typical operation the site during the nightime



5.3.6 With regards to impulsive and tonal penalties as per BS4142:2014, the existing noise climate is dominated by road traffic and commercial noise including tonal and impulsive sources. These are described within previous sections.

5.3.7 With regards to impulsive features, site operations are generally devoid of bangs/crashes, largely as a result of the nature of wastes and products processed at the site. However, as a result of internal processing and the external shredder, tonal elements may be distinguishable from the surrounding environment, therefore a +2 penalty has been applied for these features.

Table 5.4 – Assessment of typical daytime noise sources associated with the site as per BS4142:2014

	Calculated noise level at Amington Road (MP1)	**Calculated Noise level Wharf Road (MP2)**	**Comments**
Calculated noise level as per figure 5.2	54.1	33.5	As per Figure 5.2
Addition of relevant penalties as per BS4142:2014	+2=56.1	33.5 + 5 = 38.5	As per Sections 5.3.6-5.3.8
Comparison to weekday daytime background levels	56.1 – 46.8/64.0 = 7.9dB below to 9.3dB above	38.5 – 46.6-58.6 = 8.1 to 20.1dB below	See subsequent discussion
Comparison to weekend daytime background levels	56.1 – 47.5/58.6 = 2.5dB below to 8.6dB above	38.5 – 46.5/53.8 = 8.0 to 15.3dB below	

5.3.8 As per Table 5.2, the rating level associated with the operation of the site is below that at which an adverse impact is considered possible (i.e. +5dB above background) for the receptors at Wharf Road, and therefore, the resultant impact is considered to be low.

5.3.9 However, with regards to MP1, the background level is extremely variable. For the vast majority of the daytime, the rating level is below the background level. However, at quieter times, the rating level may be great than +5 above the measured LA90 figure. With this in mind, it is proposed to operate the external shredder and open the eastern roller shutter between the hours of 08:00-20:00 only. This will ensure the +5 figure is not exceeded.

Table 5.5 – Assessment of typical nighttime noise sources associated with the site as per BS4142:2014

	Calculated noise level at Amington Road (MP1)	**Calculated noise level at Wharf Road (MP2)**	**Comments**
Calculated noise level as per figure 5.2	33.9	26.6	As per Figure 5.2
Addition of relevant penalties as per BS4142:2014	+2 =35.9	+2= 28.6	As per Sections 5.3.6-5.3.8
Comparison to weeknight background levels	35.9 – 44.5/54.9 = 8.6 to 19.0dB below	28.6 – 49.8/54.8 = 21.2 to 26.2dB below	Low impact as per BS4142:2014
Comparison to weekend background levels	35.9 – 45.4/48.8 = 9.5 to 12.9dB below	28.6 – 46.8/51.1 = 18.2 to 22.5dB below	Low impact as per BS4142:2014

5.3.10 As per Table 5.3, the rating level associated with the operation of the site is below that at which an adverse impact is considered possible (i.e. +5dB above background) and therefore the associated impact is considered to be low.

5.4 Control of Uncertainty

5.4.1 Uncertainty in this assessment was controlled via the following precautions/procedures:

- Nova Acoustics Limited use calibrated equipment with the value of drift being 0.0dB for both of the positions used by NOVA.
- The measurement locations are considered representative of the existing noise climate outside the nearest residential dwellings to the proposed development.
- Background monitoring was undertaken during favourable weather conditions (e.g. dry and under 5m/s wind speed).

6 Conclusion

6.1 Summary & Recommendations

6.1.1 Oaktree Environmental Limited have undertaken a Noise Impact Assessment for the operation of a waste transfer station at 101 Amington Road, Birmingham B25 8EP

6.1.2 The primary receptors are the residential dwellings on Amington Road located northeast of the site and the residential dwellings on Wharf Road to the southwest.

6.1.3 The site has been assessed with regards to BS4142:2014 and it is considered that the impacts associated with the proposed operation of the site are acceptable based on the comparison of the calculated rating level to the proposed background level as well as the relevant, proposed controls and mitigation.

6.1.4 In addition, noise emissions will be controlled and regulated via the site Noise Management Plan and/or the sites Environmental Management System which is a pre-requisite of the sites environmental permit.

6.1.5 Therefore, based on the above, noise levels associated with the proposed development are acceptable and it should be considered that no further mitigation or assessment is required at this time.

APPENDIX I

DRAWINGS

Storage Area Details Table												
Plan Ref	**Description**	**Storage form/ containment**	**Height, width (m) & type of firewall**	**Max Length / Width (m)**	**Operational storage height (m)**	**Out-of-hours storage height (m)**	**Approx.. Area (m2)**	**Conversion factor used**	**Volume (m3)**	**Tonnes (approx.)**	**Max storage duration**	**Comments**
AREA 1	Tipping / reception area for residual waste (RDF material) >150mm	Free standing / fire wall	3.2m high, 0.8m thick interlocking concrete blocks	20	3	2.2	120	0.75	270	135	<24 hours	The entire pile would be processed during operational hours.
AREA 2	Shredded residual (RDF) waste <300mm	Free standing / fire wall	6, 0.15 / 0.8 & interlocking concrete blocks and concrete panel of building	20	2	2	250	0.5	250	125	<24 hours	The entire pile would be processed during operational hours.
AREA 3	Mixed HIC waste reception and sorting area	Free standing / fire wall	3.2, 15 & 0.8 interlocking concrete blocks	15	2	2	75	0.5	75	37.5	<72 hours	The entire pile would normally be processed during operational hours, 72 hours based on contingency
AREA 4	POPs/bulky waste	Free standing / fire wall	3.2m high, 0.8m thick interlocking concrete blocks	12	3	2	90	0.75	202.5	101.25	<24 hours	POPs would be removed from AREA 3 or segregated from AREA 1 following visual inspections
AREAS 5 - 8	Drying bays for SRF material awaiting removal from site	Free standing / fire wall	4, 0.8m & interlocking concrete blocks	14	4	3	50	0.75	150	75	<7 days	The nature of waste may change the bay. If the waste in the bays is wet, it may be stored for up to 7 days so it can dry naturally.
AREA 9	As above or either POPs / mixed HIC waste	Free standing / fire wall	As above	14	4	3	80	0.75	240	120	<7 days	Overflow drying bay from AREAS 5 - 8 but may also be used as overflow for wastes in AREAS 3 & 4.
AREA 10	Holding bay for processed SRF	Free standing / fire wall	As above	12	4	3	90	0.75	270	135	<7 days	Transferred to drying bays (AREAS 5-8) continuously.
AREAS A - B	Containers of non-ferrous metal removed via eddy current separator	12-cubic yard skips	N/A	3.7	1.86	1.86	10	1	20	10	<7 days	Containers usually removed weekly.
AREA C	Sorted waste containers arising from AREA 3	12-cubic yard skips	N/A	3.7	1.86	1.86	10	1	20	10	<7 days	Containers usually removed weekly.

Scale Bar (1:250)
0 m 10 m 20 m

Point source emission to water
Discharge to mains sewer
0.15m kerb & 2.4m palisade fencing
3.0m palisade fencing on 0.3m kerb
HYDRANT B = 57m from site access
HYDRANT A = 55m from site access
WOOD SHREDDING AREA
Interceptor (fitted with alarm & penstock)
Drying containers for washed fines i.e. sand, minerals
Wood storage prior to shredding
Out-of-hours mobile plant storage
Two no. 30,000 litre water tanks providing fire suppression to the SWIP building
3 no. drying floors containing washed stone and aggregate
Walk in fuel store for boiler feed
Roller shutter door
SWIP PLANT / BOILER ROOM
Roller shutter door (closed)
150m² / 200m³ quarantine area
Roller shutter door
Site access / egress
3.0m palisade fencing on 0.15m kerb
Barrier to protect tanks and building
Substation
Fenced
Two no. 30,000 litre tanks to feed APPS UK dust suppression system inside the building
Offices
HGV fueling area
AREA 10
AREA 9
AREA B
AREA B
Eddy current separator
Fan
Fan blows waste into the bay (AREA 9)
Splay of dust suppression nozzles
Security hut
Ad Blue
Cylinder storage
DERV tank
Proposed covered area comprising waste tipping
2.4m palisade fencing comprising whole of eastern boundary
3.2m high interlocking block wall
AREA 8
AREA 7
AREA 6
AREA 5
AREA 1
Trommel
Shredder
Shredder
6m separation distance maintained when site is not operational
Access open
Loading area (waste loaded from AREA 1 into conveyor feeding the shredder)
AREA 2
AREA 4
AREA C
AREA 3
Boundary edge secured by building cladding (6m high) and 3.2m high interlocking block wall
Shredder
Loading area
Barrier to protect tanks and building
Roller shutter door
0.15m kerb & 2.4m palisade fencing
0.15m kerb & palisade fencing
0.15m kerb & 2.4m palisade fencing
Three no. 30,000 litre tanks to feed dust and fire suppression system inside the building
0.15m kerb
0.15m kerb
Amington
El Sub Sta
Grand Union Canal
MoP

KEY:
- Permit boundary
- Area regulated by Birmingham City Council
- Permitted waste storage areas
- Temporary waste storage area (continuously moving)
- Non-waste storage areas
- Waste storage buildings
- Covered areas
- Concreted areas
- Stone surface (free-draining)
- Other buildings (offices, etc.)
- Unsurfaced areas
- Spill kit
- Mains water / hose reel connections (20m length)
- Fire fighting equipment (extinguishers, etc.)
- Plant shutoff
- Access routes for emergency vehicles
- 0.3m thick concrete panel fire walls
- 0.8m thick interlocking legio block fire walls
- Fire alarm
- Foul (dirty water) drainage
- Surface water drainage
- Drainage fall direction
- Designated smoking area
- Fire water containment equipment
- CCTV camera locations (locations indicative)
- Smoke detection camera points
- Dust & odour monitoring points
- Dust suppression nozzles
- Suppression system coverage/splay (indicative)
- Fire hydrant locations (indicative)

Compass Wind Rose for Station at Birmingham / Airport (EGBB) Period 1973 - 2022

NOTES
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REVISION HISTORY

Rev	Date	Init:	Description:
-	13.9.19	CP	Initial Drawing
A	02.8.17	CP	Amended for re-submission to EA
B	9.10.17	CP	Amended re. dust mitigation
C	17.9.19	CP	Amended for permit variation
D	11.11.19	CP	Amended for permit variation
E	19.12.19	CP	Amended for permit variation
F	23.01.23	CP	Updated for infrastructure changes
G	06.03.23	CP	Application copy
H	14.03.24	CP	Updated following infrastructure changes
I	03.05.24	CP	EA comments

Oaktree Environmental Ltd
Waste, Planning and Environmental Consultants

DRAWING TITLE
SITE LAYOUT & FIRE PLAN

CLIENT
Kiely Bros. Ltd

PROJECT/SITE
101 Amington Road, Birmingham B25 8EP

SCALE @ A1	JOB NO	CLIENT NO
1:250	012	918
DRAWING NUMBER	**REV**	**STATUS**
AMI/918/03	I	Issued
DRAWN	**CHECKED**	**DATE**
CP	--	03.05.24

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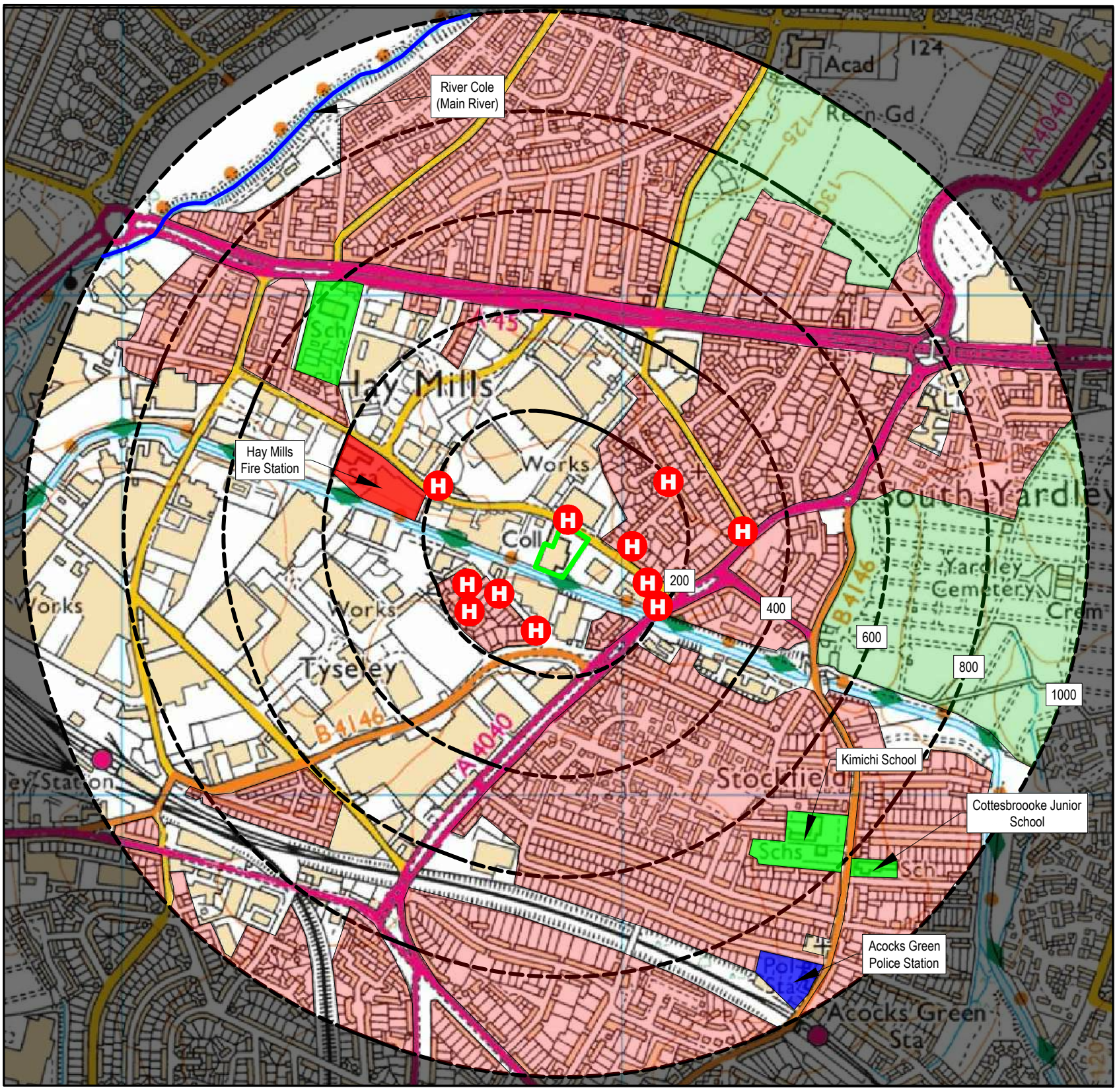
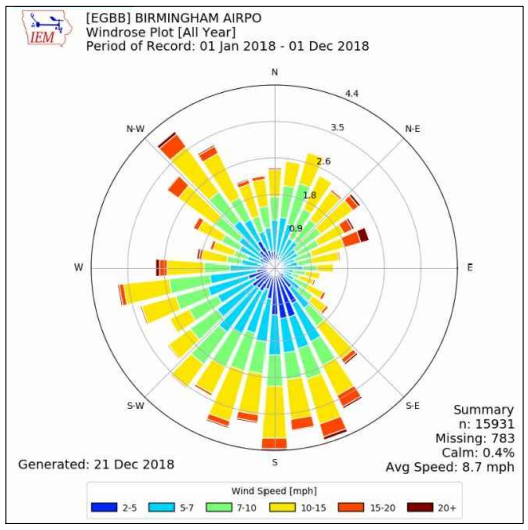


KEY:

- Permit boundary
- Surface water body (river / stream / pond / pool / lake)
- Residential blocks / workplaces
- Woodland habitats
- Fire hydrant minimum 100mm bore
- Main river (River Cole)
- Mixture of retail, commercial, and industrial premises
- Recreational / green areas
- Mixture of A, B, C roads
- Railway line



Compass Wind Rose for Station at Birmingham / Airport (EGBB) Period 2018

Scale Bar (1:10,000)

0 m 500 m 1000 m

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Client: Kiely Bros. Ltd			
Site: 101 Amington Road, Birmingham B25 8EP			
NGR: SP 11878 84501			
Date: 19 September 2019		Printed At: A3	
Title: RECEPTOR PLAN	Scale: 1:10,000	Revision: A	Drawn By: CP
Drawing No: AMI/918/04	Client No: 918	Job No: 4146	Checked:

Notes:

(1) Boundaries of designated sites (habitats and protected sites) are shown indicatively.
(2) Wind rose data shows the prevailing wind direction from the south.

Revision Details:

Rev:	Description:	Date:
-	Initial drawing	19/06/17
A	Updated for permit variation	17/09/19