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HEBBLE HOMES LTD

ODOUR RISK ASSESSMENT

FORGE LANE, DEWSBURY

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1 INTRODUCTION

1.1 Introduction to Report

1.1.1 By instruction from Hebble Homes Ltd, NoiseAir Limited was commissioned to undertake an Odour Assessment (OA) in support of a Proposed Development at Forge Lane, Dewsbury, herein referred to as 'the Site'.

1.1.2 It is understood that a planning application is to be submitted proposing to build 2no. industrial/warehouse units, totalling 10,100m^2 at the site. The end use of the units is speculative at this stage.

1.1.3 Pre-application advice from Kirklees Council (KC) has highlighted the following:

> *"We have considered whether the development is likely to generate odours that may have an adverse impact or is likely to be adversely affected by possible odours in the vicinity such as from industrial or cooking sources.*
>
> *The end use of the proposed development is currently unknown, however if the development involves odour generating activities it may impact the amenity of nearby receptors. Therefore, we would expect a detailed odour impact assessment to be submitted with any future planning application.*
>
> *In the absence of a satisfactory odour impact assessment being submitted with a future application it may not be possible to determine the application."*

1.1.4 Further advice from KC is as follows:

> *"Noise, odour and air quality – An impact assessment for noise, odour and air quality are required for validation purposes. An assessment would need to be submitted for each which is broad enough to the average impact for B1, B2 and B8 and that could work in this location subject to the use of mitigation measures if deemed required. Environmental Health officers have advised that a noise consultant should have access to library data of typical levels for each particular type of use. The reports would not need to go into specifics of mitigation measures as this can be dealt with at reserved matters stage or once the end user is finalised."*

1.1.5 An OA has therefore been undertaken to consider the potential odour impacts at nearby sensitive receptors for a potential development use class of:

- **Use Class E – Commercial, Business and Service Activities** – The old B1(c) is now E(g)(iii). This accounts for any industrial process, being a use, which can be carried out in any residential area, without detriment to the amenity of that area by reason of noise, vibration, smell, fumes, smoke, soot, ash, dust or grit;
- **Use Class B2 – General Industrial** – Industrial process other than one falling within Class E (excluding incineration purposes, chemical treatment or landfill or hazardous waste); or
- **Use Class B8 – Storage and Distribution** – The use as storage or as a distribution centre. This includes open air storage.

1.1.6 Report limitations are outlined in the **Appendix**.

1.2 Site Location

1.2.1 The Site is located off Forge Lane, Dewsbury, at approximate National Grid Reference (NGR): 423754, 419720.

1.2.2 **Figure 1** details the location of the Site.

2 ODOUR LEGISLATION, POLICY AND GUIDANCE

2.1 Odour Definition

2.1.1 The Institute of Air Quality Management (IAQM) guidance[1] defines odour as:

> *"[…] the human olfactory response (perception followed by psychological appraisal) to one, or more often a complex mixture of, chemical species in the air."*

2.1.2 The stated definition is considered to be relevant in the context of this assessment.

2.2 National Legislation

Environmental Protection Act

2.2.1 There are currently no statutory standards that cover the release of odour, and its subsequent impacts in the United Kingdom. This is due to the inherently subjective nature of odours and the complexities of measuring and assessing it.

2.2.2 It is however recognised that odours can potentially pose a nuisance for residents residing near an offensive source. Determination of an odour constituting a statutory nuisance is usually the local planning authority or the Environment Agency.

2.2.3 Section 79 of Part III of the Environmental Protection Act (1990)[2] defines nuisance as:

> *"Any dust, steam, odour or other effluvia arising on industrial, trade or business premises and being prejudicial to health or a nuisance."*

2.2.4 Odour can be controlled through the Act.

2.3 Planning Policy

National Planning Policy Framework

2.3.1 The revised National Planning Policy Framework[3] (NPPF) was last updated in December 2023 and sets out the Government's planning policies for England and how these are expected to be applied.

[1] Guidance on the Assessment of Odour for Planning v1.1, IAQM, 2018.
[2] Environmental Protection Act. London 1990. HMSO.
[3] NPPF, Ministry of Housing, Communities and Local Government, 2023.

2.3.2 The purpose of the planning system is to contribute to the achievement of sustainable development. In order to ensure this, the NPPF recognises three overarching objectives, including the following environmental objective which is of relevance to odour:

> *"to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy."*

2.3.3 Chapter 12 of the NPPF details objectives in relation to achieving well-designed place and to prevent unacceptable risks from pollution. It states that:

> *"Planning policies and decisions should contribute to and enhance the natural and local environment by* […] *preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air quality".*
>
> and
>
> "*Planning policies and decisions* should ensure that developments:
>
> *f) create places that are safe, inclusive and accessible and which promote health and* ***well-being, with a high standard of amenity for existing and future users; and where*** *crime and disorder, and the fear of crime, do not undermine the quality of life and community cohesions and resilience."*

2.3.4 The NPPF is supported by the Planning Practice Guidance (PPG)[4], which makes clear that:

> *"Odour* […] *can also be a planning concern, for example, because of the effect on local amenity."*

2.3.5 It also provides options for mitigating impacts, stating:

> *"Mitigation options where necessary, will depend on the proposed development and should be proportionate to the likely impact."*

[4] Department of Communities and Local Government (DCLG) (Updated November 2019) National Planning Practice Guidance.

2.4 Odour Guidance

Environment Agency

2.4.1 The Environment Agency has produced a guidance note (H4)[5], which is designed for operators of Environment Agency-regulated processes. The guidance is primarily aimed at methods to control and manage odour release and contains a number of recommended assessment methods which can be used to assess potential odour impacts.

IAQM Guidance

2.4.2 The IAQM guidance[6] sets out assessment methods which may be utilised in the assessment of odours for planning applications. It is the only UK odour guidance document which contains a method for estimating the significance of potential odour impacts.

2.4.3 Some of the methods outlined in the IAQM guidance, those relating to field odour surveys, have been adopted in this assessment.

[5] Additional Guidance for H4 Odour Management How to comply with your Environmental Permit, Environment Agency, 2011.
[6] Institute of Air Quality Management (2018) Guidance on the Assessment of Odour for Planning (version 1.1)

3 METHODOLOGY

3.1 Determining the Approach

3.1.1 Assessing odour impacts is a subjective and challenging science. There are a number of odour assessment methods and tools that have been developed and utilised in UK planning applications. These include desk-based methods, such as complaints analysis and qualitative risk assessment, through to field odour surveys (sniff testing) and dispersion modelling. Each has advantages and disadvantages with not all assessment methods being appropriate in every case.

3.1.2 The scale and location of odorous processes is important in selecting an appropriate assessment methodology. A small or remotely located process often requires a simpler methodology.

3.1.3 The IAQM guidance states that a qualitative risk-based approach is appropriate for:

- Screening of odour impacts;
- Development proposals likely to have a low risk of adverse effects;
- Situations where there is insufficient information to carry out detailed predictive dispersion modelling;
- Situations where the information has wide uncertainties and its use as input to a detailed predictive dispersion model would be at best a waste of time, money and effort or, worse, would lead to an illusory and false impression of accuracy and precision in the numbers generated; and
- When the model is not able to properly represent the reality of the situation being assessed, e.g. if the odour effects are likely to be significantly influenced by accidental, unexpected, or unknown releases. In such instances a qualitative estimate may be more appropriate, on the basis that it is better to be broadly correct than precisely wrong.

3.1.4 The end use of the Proposed Development is yet to be determined, therefore limited data is available at this stage. However, it is understood that the use class will fall into Use Class E, B2 or B8. It is therefore considered that criterion 2-5 will be met for the operation of the Proposed Development, and a qualitative odour risk assessment is considered as an appropriate assessment approach at this stage.

3.2 Qualitative Odour Risk Assessment

3.2.1 A qualitative risk assessment has been carried out in accordance with the IAQM guidance, to determine the 'risk' of an odour effect occurring as a result of the operation of the Proposed Development. This has been established using a source-pathway-rector approach, which is conceptualised as the overall risk depends on the probability of an event occurring together with the likely consequences if it was to occur.

3.2.2 The probability of an odour impact occurring and the likely magnitude of effect resulting from the exposure determine the risk of an odour effect occurring, and can be estimated using the following relationship:

Effect ≈ Dose x Response

3.2.3 The **Dose** (impact) is considered equivalent to the odour impact (exposure) and can be determined by the FIDO of the FIDOL factors. The **Response** (receptor sensitivity) is determined by the L factor of the FIDOL factors.

3.2.4 The FIDOL factors are presented in **Table 1**.

Table 1: FIDOL Factors Descriptions from IAQM Guidance

Factor	Description
Frequency	How often an individual is exposed to odour.
Intensity	The individual's perception of the strength of the odour.
Duration	The overall duration that individuals are exposed to an odour over time.
Odour Unpleasantness	Odour unpleasantness describes the character of an odour as it relates to the 'hedonic tone' (which may be pleasant, neutral or unpleasant) at a given odour concentration/ intensity. This can be measured in the laboratory as the hedonic tone, and when measured by the standard method and expressed on a standard nine-point scale it is termed the hedonic score.
Location	The type of land use and nature of human activities in the vicinity of an odour source. Tolerance and expectation of the receptor. The 'Location' factor can be considered to encompass the receptor characteristics, receptor sensitivity, and socio-economic factors.

Source Odour Potential

3.2.5 The first stage in the assessment is to determine the Source Odour Potential of Site activities, which takes into account the following:

- The scale (magnitude) of the release from the odour source, taking into account the effectiveness of any odour control or mitigation measures that are already in place. This involves judging the relative size of the release rate (although is unlikely that actual odour release rates (in units of ou_E/s), will be available if a qualitative

assessment is being carried out after mitigation and taking account of any pattern of release (e.g. intermittency);

- How inherently odorous the emission is. In some cases it may be known whether the release has a low, medium or high odour detection threshold (ODT); this is the concentration at which an odour becomes detectable to the human nose. In most instances the odours released by a source will be a complex mixture of compounds and the detectability will not be known. However, for some industrial processes the odour will be due to one or a small number of known compounds and the detection thresholds will be a good indication of whether the release is highly odorous or mildly odorous; and
- The relative pleasantness/unpleasantness; this can be measured in the laboratory as the hedonic tone, and when measured by the standard method and expressed on a standard nine-point scale it is termed the hedonic score. Lists of relative pleasantness of different substances are given in the Environment Agency guidance H4 Odour Management and in more detail in the SEPA document Odour Guidance 2010[7].

3.2.6 Using the example risk ranking in Table 2, the Source Odour Potential can be categorised as **Small**, **Medium** or **Large**.

Table 2: Risk Factors for Source Odour Potential

Risk Rating	Magnitude/Unpleasantness/Mitigation and Control
Large	**Magnitude:** Larger permitted processes of odorous nature or large Sewage Treatment Works (STWs); materials usage hundreds of thousands of tonnes/m^3 per year; area sources of thousands of m^2. The compounds involved are very odorous (e.g. mercaptans), having very low ODTs where known. **Unpleasantness:** Processes classed as "Most offensive" in EA Guidance H4 or (where known) compounds/odours having unpleasant (-2) to very unpleasant (-4) hedonic score. **Mitigation and Control:** Open air operation with no containment, reliance solely on good management techniques and best practice.
Medium	**Magnitude:** Smaller permitted processes or small Sewage Treatment STWs; materials usage thousands of tonnes/m^3 per year; area sources of hundreds of m^2. The compounds involved are moderately odorous. **Unpleasantness:** Processes classed in H4 as "Moderately offensive"; or (where known) odours having neutral (0) to unpleasant (-2) hedonic score. **Mitigation and Control:** Some mitigation measures in place, but significant residual odour remains.
Small	**Magnitude:** Falls below Environmental Permit Part B threshold; materials usage hundreds of tonnes/m^3 per year; area sources of tens m^2. The compounds involved are only mildly odorous, having relatively high ODTs where known. **Unpleasantness:** Processes classed as "Less offensive" in H4; or (where known) compounds/odours having neutral (0) to very pleasant (+4) hedonic score.

[7] Scottish Environmental Protection Agency (SEPA), Odour Guidance, January 2010.

Table 2: Risk Factors for Source Odour Potential	
Risk Rating	**Magnitude/Unpleasantness/Mitigation and Control**
	Mitigation and Control: Effective, tangible mitigation measures in place (e.g. BAT, BPM) leading to little or no residual odour.

Pathway Effectiveness

3.2.7 The next step is to estimate the effectiveness of the pollutant pathway as the transport mechanism for odour through the air to the receptor, versus the dilution/dispersion in the atmosphere. Any factor that increases dilution and dispersion of the plume as it travels from source to receptor will reduce the concentration at the end point, and hence reduce exposure. Important factors for consideration are:

- The distance of sensitive receptors from the odour source;
- Whether these receptors are downwind (with respect to the predominant prevailing wind direction). Odour episodes often tend to occur during stable atmospheric conditions with low wind speed, which gives poor dispersion and dilution; receptors close to the source in all directions around it can be affected under these conditions. When conditions are not calm, it will be the downwind receptors that are affected. Therefore, receptors that are downwind with respect to the prevailing wind direction tend to be at higher risk of odour impact overall;
- The effectiveness of the point of release in promoting good dispersion, e.g. releasing the emissions from a high stack will - all other things being equal - increase the pathway, dilution and dispersion; and
- The topography and terrain between the source and the receptor. The presence of topographical features such as hills and valleys, or urban terrain features such as buildings can affect air flow and therefore increase, or inhibit dispersion and dilution.

3.2.8 Using the example risk ranking in **Table 3**, the pollutant pathway from source to receptor can be categorised as **Ineffective**, **Moderately effective**, or **Highly effective**.

Table 3: Risk Factors for Pathway Effectiveness	
Pathway Effectiveness	**Distance/Direction/Effectiveness of Dispersion/Dilution**
Highly effective	**Distance:** Receptor is adjacent to the source/site; distance well below any official set-back distances. **Direction:** High frequency (%) of winds from source to receptor (or, qualitatively, receptors downwind of source with respect to prevailing wind). **Effectiveness of dispersion/dilution:** open processes with low-level releases, e.g. lagoons, uncovered effluent treatment plant, landfilling of putrescible wastes.

Table 3: Risk Factors for Pathway Effectiveness	
Pathway Effectiveness	**Distance/Direction/Effectiveness of Dispersion/Dilution**
Moderately effective	**Distance:** Receptor is local to the source. **Where mitigation relies on dispersion/dilution:** releases are elevated but compromised by building effects.
Ineffective	**Distance:** Receptor is remote from the source; distance exceeds any official set-back distances. **Direction:** Low frequency (%) of winds from source to receptor (or, qualitatively, receptors upwind of source with respect to prevailing wind). **Where mitigation relies on dispersion/dilution:** Releases are from high level (e.g. stacks, or roof vents >3m above ridge height) and are not compromised by surrounding buildings.

3.2.9 The sensitivity of the receiving receptor can be defined as **Low**, **Medium**, or **High** as is defined based on the criteria shown in **Table 4**.

Table 4: Receptor Sensitivity	
Sensitivity	**Description**
High	Surrounding land where: • users can reasonably expect enjoyment of a high level of amenity; and • people would reasonably be expected to be present here continuously, or at least regularly for extended periods, as part of the normal pattern of use of the land. Examples may include residential dwellings, hospitals, schools/education and tourist/cultural.
Medium	Surrounding land where: • users would expect to enjoy a reasonable level of amenity, but wouldn't reasonably expect to enjoy the same level of amenity as in their home; or • people wouldn't reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land. Examples may include places of work, commercial/retail premises and playing/recreation fields.
Low	Surrounding land where: • the enjoyment of amenity would not reasonably be expected; or • there is transient exposure, where the people would reasonably be expected to be present only for limited periods of time as part of the normal pattern of use of the land. Examples may include industrial, farms, footpaths and roads.

3.2.10 The estimated Source Odour Potential and Pathway Effectiveness are considered together to predict the risk of odour exposure (impact) at each receptor location, as shown in the matrix in **Table 5**.

Table 5: Risk of Odour Exposure (Impact) at the Specific Receptor Location			
Pathway Effectiveness	**Source Odour Potential**		
	Small	**Medium**	**Large**
Highly effective pathway	Low Risk	Medium Risk	High Risk

Table 5: Risk of Odour Exposure (Impact) at the Specific Receptor Location			
Pathway Effectiveness	**Source Odour Potential**		
	Small	**Medium**	**Large**
Moderately effective pathway	Negligible Risk	Low Risk	Medium Risk
Ineffective pathway	Negligible Risk	Negligible Risk	Low Risk

3.2.11 The final step is to determine the significance of odour effect at each specified receptor location through the interaction between sensitivity and risk, as outlined in **Table 6**.

Table 6: Significance of Odour Effect at the Specific Receptor Location			
Risk of Odour Exposure	**Receptor Sensitivity**		
	Low	**Medium**	**High**
High	Slight	Moderate	Substantial
Medium	Negligible	Slight	Moderate
Low	Negligible	Negligible	Slight
Negligible	Negligible	Negligible	Negligible

3.2.12 This procedure results in a prediction of the likely odour effect at each sensitive receptor. The IAQM guidance states that an assessment must reach a conclusion on the likely significance of the overall predicted effect. Where the overall effect is moderate or substantial, the effect is likely to be considered significant, whilst if the effect is slight or negligible, the impact is likely to be considered not significant. It should be noted that this is a binary judgement of either 'significant' or 'not significant'. This has been considered to determine the overall significance of potential odour effects associated with the Proposed Development.

3.2.13 The IAQM guidance recognises that assessment of odour requires some degree of professional judgement. Qualitative methodologies such as those utilised within this report provide guidance for assessing potential impacts. However, professional judgement should be exercised in order to take account of the specific details which are unique to each development. This has been considered as necessary throughout the assessment.

4 BASELINE

4.1 Introduction

4.1.1 Existing conditions in the vicinity of the Site were identified in order to provide a baseline for the assessment. These are detailed in the following Sections.

4.2 Site Description

4.2.1 The Proposed Development is located within the administrative area of KC. The land at the Site is currently unused. To the north, the Calder & Hebble Navigation Canal borders the Site, with residential dwellings, a nursery and light industrial/commercial buildings beyond. The east, the Site is bordered by residential dwellings along Kilner View and Providence Court. To the south, the Site is bordered by residential dwellings along Kimberly Street, Fiddler Street and Lees Hall Road, whilst the west is bound by Forge Lane, with light industrial/commercial buildings beyond.

4.3 Sensitive Receptor Locations

4.3.1 The closest sensitive receptor locations to the Proposed Development have been identified and included in the assessment.

4.3.2 Receptors have been measured at a distance from the Site boundary, as a worst-case approach.

4.3.3 The identified receptors that have been considered in this assessment are presented in **Table 7** and shown on **Figure 2**.

Table 7: Sensitive Receptor Locations Included in the Assessment

Receptor		Sensitivity	Distance from Site Boundary (m)	NGR (m)	
				X	Y
R1	Primary School – Perseverance Inn	High	25	423702	419929
R2	Residential – Navigation Road	High	50	423814	419825
R3	Residential – Navigation Gardens	High	52	423978	419765
R4	Residential – Providence Court	High	10	423930	419730
R5	Residential – Providence Court	High	12	423919	419608
R6	Residential – Kimberly Street	High	45	423868	419582
R7	Residential – Fiddler Hill	High	84	423835	419597
R8	Residential – Lees Hall Road	High	100	423722	419610

Table 7: Sensitive Receptor Locations Included in the Assessment					
Receptor		Sensitivity	Distance from Site Boundary (m)	NGR (m)	
				X	Y
R9	Residential – Lees Hall Road	High	58	423657	419655
R10	Residential – Lees Hall Road	High	33	423596	419710
R11	Light Industrial/Commercial – Forge Lane	Medium	17	423550	419779
R12	Light Industrial/Commercial – Forge Lane	Medium	33	423613	419919

4.4 Meteorological Conditions

4.4.1 The potential for atmospheric conditions to impact sensitive receptor locations depends significantly on the meteorology, particularly wind direction, during release. In order to consider prevailing conditions at the Site, a review of historical weather data was undertaken.

4.4.2 Meteorological data for 2019-2023 has been obtained from the Sheffield Meteorological Recording Station, as this is the most representative meteorological recording station (in terms of distance and difference in elevation from the Site).

4.4.3 The data was provided by Air Pollution Services Ltd, which is an established distributor of meteorological data within the UK.

4.4.4 The wind rose for this station is shown in **Figure 3**. The prevailing wind direction at the Site is from the west, with occasional winds from the northeast; winds from the north and south are infrequent. The data is summarised below, in **Table 8**.

Table 8: Wind Frequency Data from the Sheffield Meteorological Recording Station (2019-2023)	
Wind Direction (°)	Frequency of Wind (%)
0 – 22.5	1.8
22.5 – 45	2.7
45 – 67.5	6.8
67.5 – 90	8.7
90 – 112.5	7.2
112.5 – 135	3.5
135 – 157.5	4.0
157.5 – 180	3.1
180 – 202.5	5.5
202.5 – 225	5.2
225 – 247.5	9.1
247.5 – 270	13.5
270 – 292.5	18.3
292.5 – 315	5.1
315 – 337.5	2.4

Table 8: Wind Frequency Data from the Sheffield Meteorological Recording Station (2019-2023)	
Wind Direction (°)	**Frequency of Wind (%)**
337.5 – 360	3.0

5 ODOUR IMPACT ASSESSMENT

5.1 Risk Assessment

5.1.1 The Proposed Development has the potential to cause odour impacts as a result of emissions during its operation. The risk associated with the scheme was therefore assessed at the identified receptor locations in accordance with the IAQM methodology.

5.1.2 The first step was to classify the Source Odour Potential. This is summarised in **Table 9**.

Table 9: Source Odour Potential

Source	Source Odour Potential	Justification
Activities generated by the operation of the Proposed Development	Medium	**Magnitude:** As a worst-case approach, the following has been assumed: • Smaller permitted processes; materials usage thousands of tonnes/m^3 per year; area sources of hundreds of m^2. • The compounds involved are moderately odorous. **Unpleasantness:** In accordance with H4, most odours from regulated processes fall into the 'moderately offensive' category, i.e. any odours which do not obviously fall within the 'more offensive' or 'less offensive' categories. Therefore, as a worst-case approach, the unpleasantness of the activities associated with the Proposed Development have been considered as 'moderately offensive'. **Mitigation/Control:** The indicative Site layout suggests that the processes associated with the Proposed Development will be mostly contained within the buildings; there may be some storage of materials on the Site, however, this will be 'non-vulnerable' materials. As a worst-case approach, the assessment assumes that the following applies: • Some mitigation measures in place, but significant residual odour remains. **Summary:** The end use of the Proposed Development is speculative at this stage. As a worst-case approach, the Source Odour Potential of the Proposed Development has been classed as Medium.

5.1.3 The Pathway Effectiveness was subsequently defined between the sources on the Site and the sensitive receptor locations, based on the distance from the boundary and the prevailing wind direction in relation to the Site. This is summarised in **Table 10**.

Table 10: Pathway Effectiveness at the Sensitive Receptor Locations			
Receptor		**Pathway Effectiveness**	**Justification**
R1	Primary School – Perseverance Inn	Moderately effective	R1 is approximately 25m north of the Site boundary. There is a low frequency of winds from sources to receptor (4.4%).
R2	Residential – Navigation Road	Moderately effective	R2 is approximately 50m north of the Site boundary. There is a moderate frequency of winds from sources to receptor (11.7%).
R3	Residential – Navigation Gardens	Moderately effective	R3 is approximately 52m northwest of the Site boundary. There is a moderate frequency of winds from sources to receptor (13.6%).
R4	Residential – Providence Court	Moderately effective	R4 is approximately 10m northwest of the Site boundary. There is a moderate frequency of winds from sources to receptor (11.5%).
R5	Residential – Providence Court	Moderately effective	R5 is approximately 12m southwest of the Site boundary. There is a moderate frequency of winds from sources to receptor (10.3%).
R6	Residential – Kimberly Street	Moderately effective	R6 is approximately 45m southwest of the Site boundary. There is a low frequency of winds from sources to receptor (3.1%).
R7	Residential – Fiddler Hill	Ineffective	R7 is approximately 84m south of the Site boundary. There is a low frequency of winds from sources to receptor (2.4%).
R8	Residential – Lees Hall Road	Ineffective	R8 is approximately 100m south of the Site boundary. There is a low frequency of winds from sources to receptor (3.6%).
R9	Residential – Lees Hall Road	Moderately effective	R9 is approximately 58m south of the Site boundary. There is a low frequency of winds from sources to receptor (4.3%).
R10	Residential - Lees Hall Road	Moderately effective	R10 is approximately 33m southwest of the Site boundary. There is a low frequency of winds from sources to receptor (6.1%).
R11	Light Industrial/ Commercial – Forge Lane	Moderately effective	R11 is approximately 17m west of the Site boundary. There is a low frequency of winds from sources to receptor (8%).
R12	Light Industrial/ Commercial – Forge Lane	Moderately effective	R12 is approximately 33m northeast of the Site boundary. There is a low frequency of winds from sources to receptor (3.5%).

5.1.4 The above information has been used to determine the effect significance at each sensitive receptor location considered in the assessment. This is summarised in **Table 11**.

Table 11: Risk of Odour Exposure (Impact) and Likely Magnitude of Odour Effect at the Sensitive Receptor Locations

Receptor		Source Odour Potential	Pathway Effectiveness	Exposure Risk	Sensitivity	Effect Significance
R1	Primary School – Perseverance Inn	Medium	Moderately effective	Low risk	High	Slight Adverse effect
R2	Residential – Navigation Road	Medium	Moderately effective	Low risk	High	Slight Adverse effect
R3	Residential – Navigation Gardens	Medium	Moderately effective	Low risk	High	Slight Adverse effect
R4	Residential – Providence Court	Medium	Moderately effective	Low risk	High	Slight Adverse effect
R5	Residential – Providence Court	Medium	Moderately effective	Low risk	High	Slight Adverse effect
R6	Residential – Kimberly Street	Medium	Moderately effective	Low risk	High	Slight Adverse effect
R7	Residential – Fiddler Hill	Medium	Ineffective	Negligible risk	High	Negligible effect
R8	Residential – Lees Hall Road	Medium	Ineffective	Negligible risk	High	Negligible effect
R9	Residential – Lees Hall Road	Medium	Moderately effective	Low risk	High	Slight Adverse effect
R10	Residential - Lees Hall Road	Medium	Moderately effective	Low risk	High	Slight Adverse effect
R11	Light Industrial/ Commercial – Forge Lane	Medium	Moderately effective	Low risk	Medium	Negligible effect
R12	Light Industrial/ Commercial – Forge Lane	Medium	Moderately effective	Low risk	Medium	Negligible effect

5.1.5 As shown in **Table 10**, the predicted odour effect significance is **negligible** at four, and **slight** at eight receptor locations. The IAQM guidance states that the effect is only considered significant if the impact is greater than slight. As such, impacts are considered to be **not significant** in accordance with the IAQM guidance.

5.1.6 A specific odour mitigation strategy has not yet been developed for the Proposed Development, as the end use of the units is speculative at this stage. In accordance with advice from KC, "*the reports would not need to go into specifics of mitigation measures as this can be dealt with at reserved matters stage or once the end use is finalised.*" Therefore, if required, an odour mitigation strategy will be devised by the Client, either at reserved matters stage or once the end use of the units has been determined.

6 DISCUSSION AND CONCLUSIONS

6.1.1 NoiseAir Limited was commissioned to undertake an OA in support of a Proposed Development at Forge Lane, Dewsbury.

6.1.2 It is understood that a planning application is to be submitted proposing to build 2no. industrial/warehouse units totalling 10,100m^2 at the Site. The end use of the units is speculative at this stage. Concerns have been raised that odour emissions from the Proposed Development may have the potential affect amenity levels at sensitive locations in the vicinity of the Site, therefore, an OA has been undertaken.

6.1.3 The risk of potential odour effects at sensitive receptor locations was assessed using the IAQM methodology. This included consideration of the Source Odour Potential, Pathway Effectiveness and receptor sensitivity. The results of the assessment indicated the predicted odour effect significance was **negligible** at four, and **slight** at eight receptor locations. The IAQM guidance states that the effect is only considered significant if the impact is greater than slight. As such, all impacts are considered **not significant**, in accordance with the IAQM guidance.

6.1.4 Mitigation measures will be devised by the Client, either at reserved matters stage or once the end use of the units has been determined.

6.1.5 Following consideration of the relevant issues, odour impacts as a result of emissions from the Proposed Development are considered to be not significant, in accordance with the IAQM guidance. As such, it is considered that odour should not be viewed as a constraint to planning consent for the Proposed Development.

FIGURES

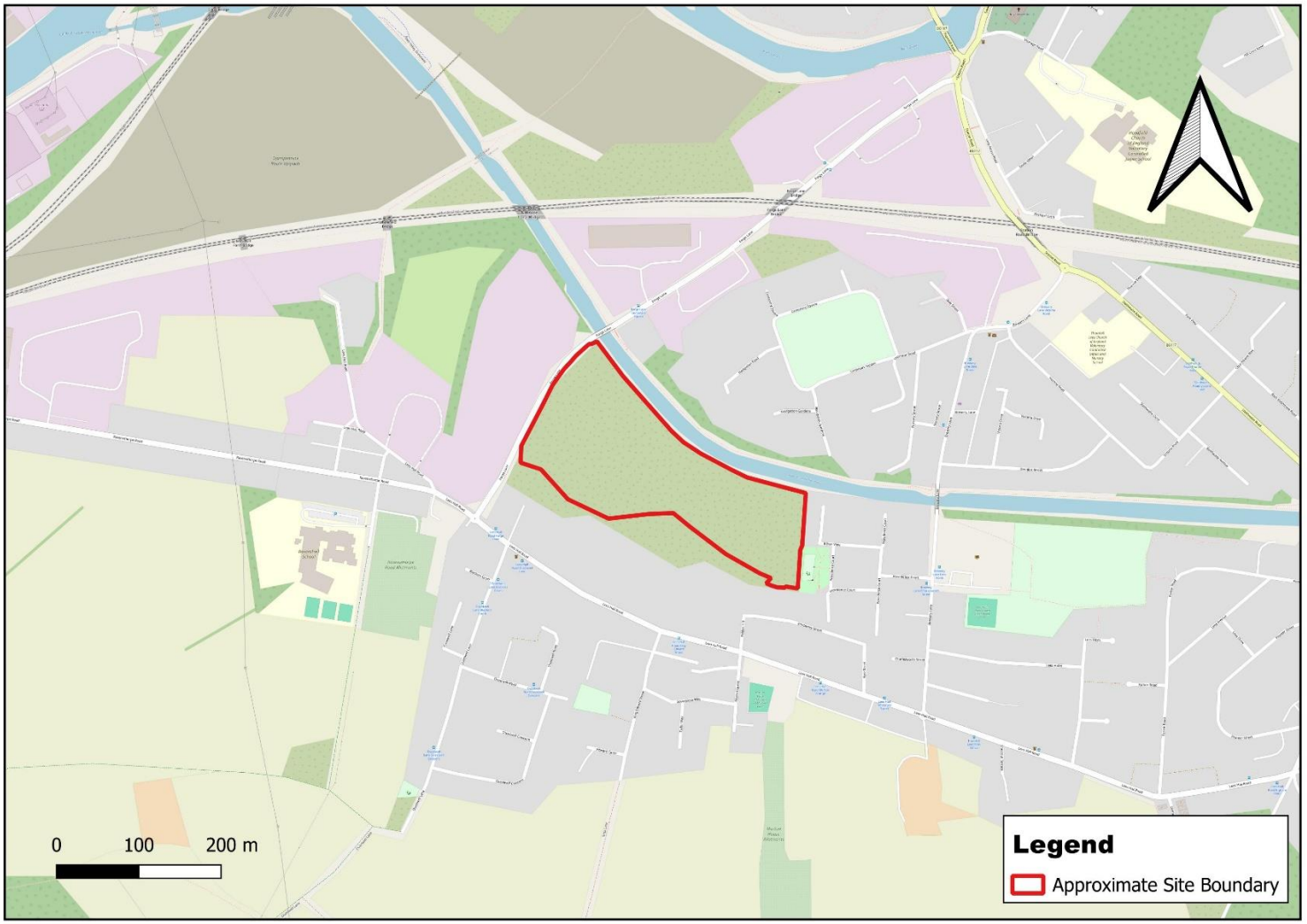

Figure 1: Site Location

Figure 2: Sensitive Receptor Locations

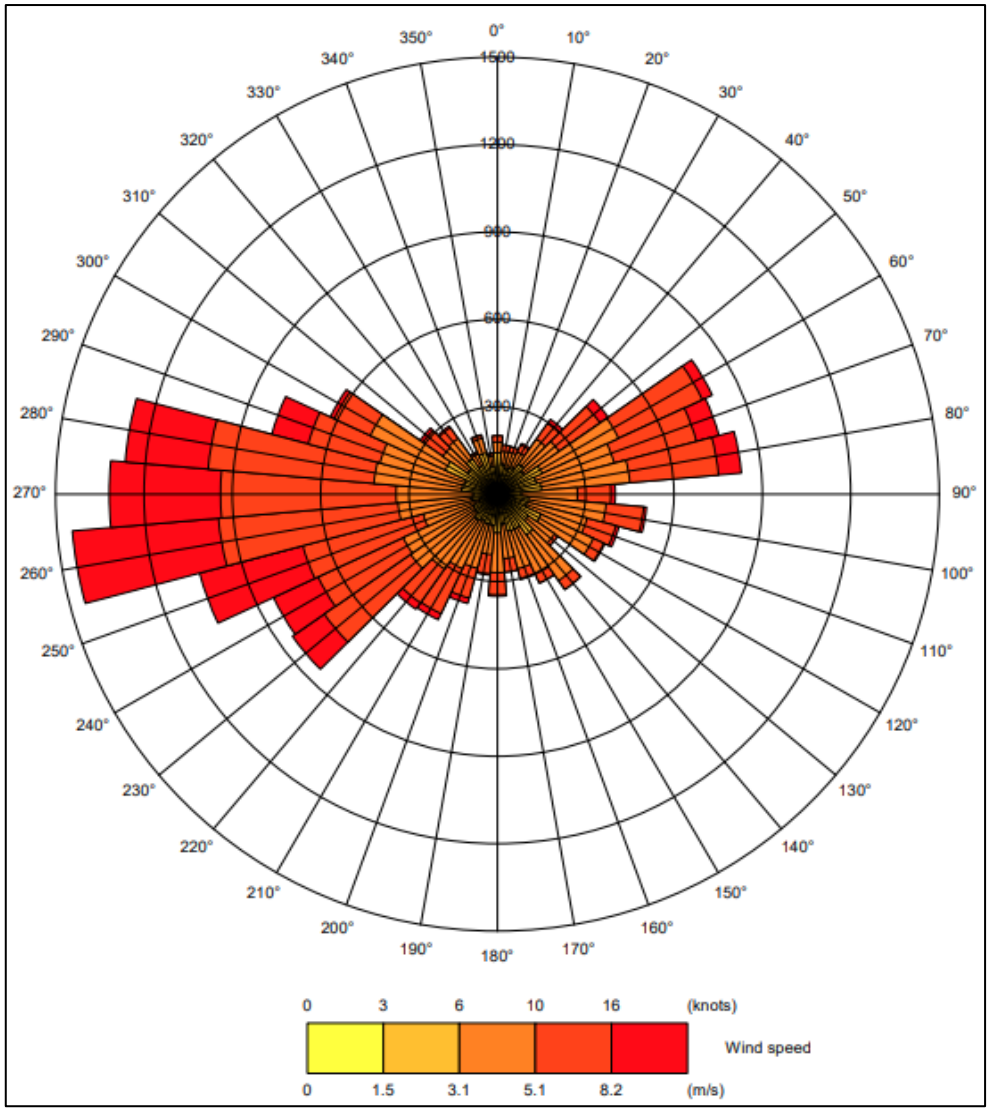

Figure 3: 5-Year Wind Rose for Sheffield Meteorological Recording Station (2019-2023)

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