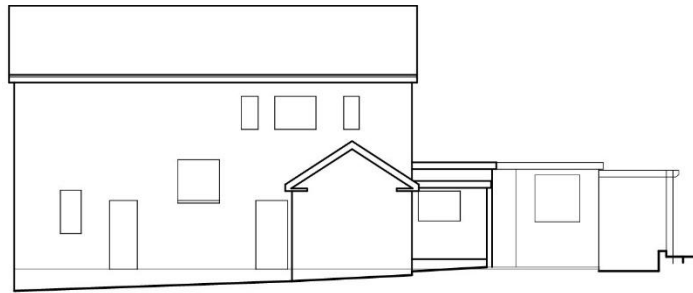




**Aeolus  
Air  
Quality  
Consulting**



# Air Quality Assessment

The Woolcomber, Hinckley

June 2026

Keshco Ltd



## Project Information

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## Author

The [author](#) holds a Masters in Air Pollution Management & Control and is a full member of both the [Institute of Air Quality Management](#) and [Institute of Environmental Sciences](#). He also worked as a planning officer for local authority.

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## Report Prepared By

Aeolus Air Quality Consulting Ltd  
Company Reg No. 12701431  
[www.aeolusairquality.co.uk](http://www.aeolusairquality.co.uk)  
[info@aaqc.co.uk](mailto:info@aaqc.co.uk)



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## Glossary

| Acronym         | Definition                                         |
|-----------------|----------------------------------------------------|
| AQAP            | Air Quality Action Plan                            |
| AQA             | Air Quality Assessment                             |
| AQMA            | Air Quality Management Area                        |
| AQO             | Air Quality Objectives                             |
| AQS             | Air Quality Strategy                               |
| ASR             | Annual Status Report                               |
| AURN            | Automatic Urban and Rural Network                  |
| Defra           | Department for Environment, Food and Rural Affairs |
| DMP             | Dust Management Plan                               |
| EPUK            | Environmental Protection UK                        |
| EU              | European Union                                     |
| HBBC            | Hinckley & Bosworth Borough Council                |
| IAQM            | Institute of Air Quality Management                |
| LAQM            | Local Air Quality Management                       |
| LNR             | Local Nature Reserve                               |
| NAQS            | National Air Quality Strategy                      |
| NO              | Nitric oxide                                       |
| NO <sub>2</sub> | Nitrogen dioxide                                   |
| NO <sub>x</sub> | Oxides of nitrogen                                 |
| NRMM            | Non-road Mobile Machinery                          |
| PM              | Particulate Matter                                 |
| Ramsar Sites    | Designated Wetland                                 |
| SAC             | Special Areas of Conservation                      |
| SPA             | Special Protection Areas                           |
| SPD             | Supplementary Planning Document                    |
| SSSI            | Sites of Special Scientific Interest               |
| WHO             | World Health Organisation                          |



## 1 Introduction

Keshco Ltd are seeking assistance with planning matters regarding a proposed development at The Woolcomber, Hinckley, LE10 2PH. Hereafter called the proposed development; it consists of change of use with retail/commercial use on ground floor and residential use on the first floor.

The local authority responsible for determining the planning application is Hinckley & Bosworth Borough Council (HBBC). As the proposed development introduces new residential receptors, an air quality assessment is required to support the planning application. Aeolus Air Quality Consulting (AAQC) have been instructed by Keshco Ltd to undertake this work.

The potential air quality impacts arising as a result of the proposed development have been assessed using planning guidance from Environmental Protection UK (EPUK) with the Institute of Air Quality Management (IAQM)<sup>1</sup> and the Department for Environment, Food and Rural Affairs (Defra)<sup>2</sup>.

### 1.1 Objectives

This report provides an assessment on the following key issues associated with the construction and operational phases of the proposed development:

- Nuisance, loss of amenity and health impacts associated with the construction phase of the proposed development on sensitive receptors;
- Characterising the baseline conditions at the site using monitored pollutant data from HBBC and Defra resources;
- Assessing the suitability of the proposed development for the addition of new residential receptors;
- Assessing the impact of the proposed development on existing receptors; and
- Making recommendations for mitigation measures if required.

### 1.2 Proposed Development Location

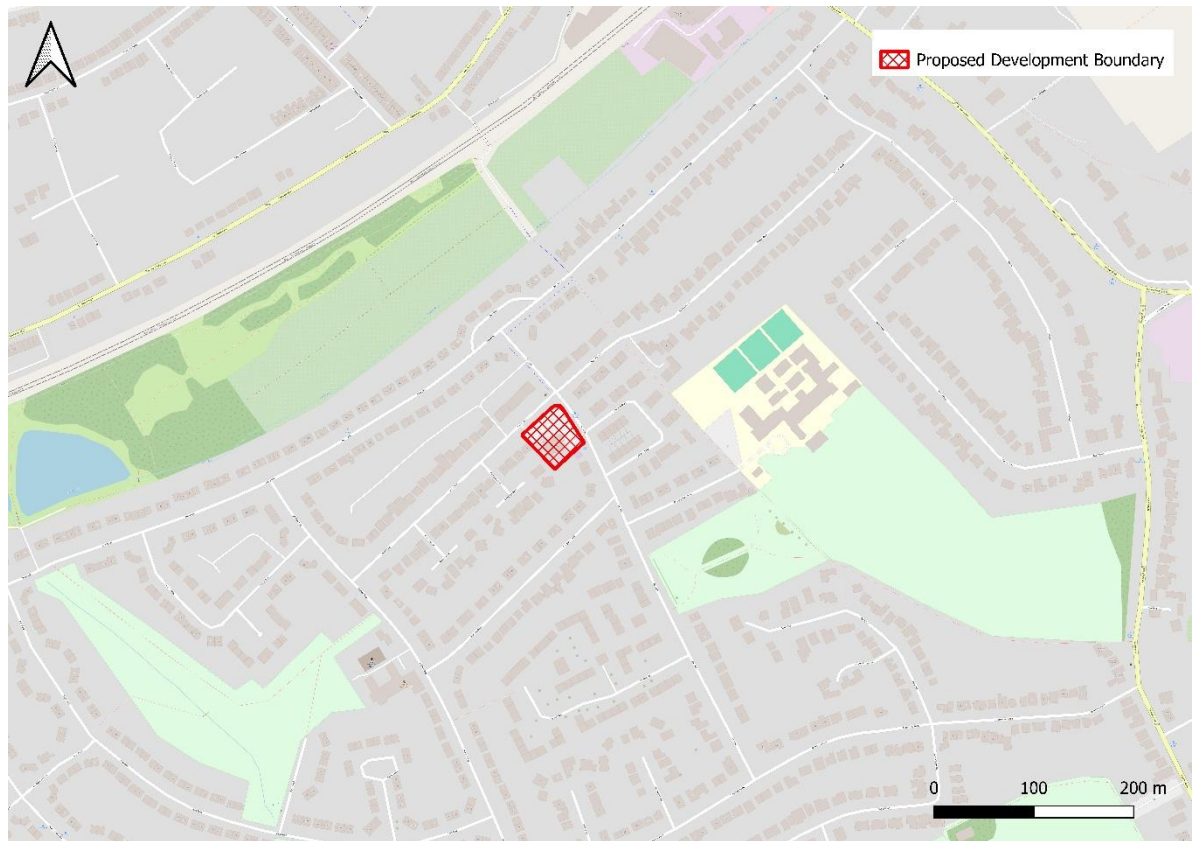
The proposed development is located within an area comprising of mostly residential use. The proposed development does not lie within any declared Air Quality Management Area (AQMA).

The nearest nationally designated ecological site is Burbage Wood and Aston Firs Site of Special Scientific Interest (SSSI), located approximately 1.3km northeast of the proposed development site. The proposed development is illustrated in Figure 1.1.

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<sup>1</sup> IAQM (2017): 'Land Use Planning and Development Control: Planning for Air Quality v1.2'.

<sup>2</sup> Defra (2022): 'Local Air Quality Management – Technical Guidance (TG22)'.



**Figure 1.1: Proposed development site location**



## 2 Pollutants and Legislation

All legislation, policy, statutory and non-statutory guidelines applicable to the proposed development can be found in Appendix A. This section outlines the relevant pollutants, their Air Quality Objectives (AQO) and where they are applicable.

### 2.1 Key Pollutants

The key pollutant associated with the construction phase of the project will be 'disamenity' or 'nuisance' dust. Nitrogen dioxide (NO<sub>2</sub>) and particulate matter (PM<sub>2.5</sub> and PM<sub>10</sub>) may also be associated with emissions from non-road mobile machinery (NRMM) and construction related traffic.

The key pollutants associated with the operational phase of the proposed development will be road traffic emissions including NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub>. Further details of the key pollutants are presented below.

#### 2.1.1 Disamenity Dust

'Dust' is generally regarded as particulate matter up to 75µm in diameter and in an environmental context can be considered in two size categories: coarser dust (particles greater than 10µm) and fine particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>) as described above.

Coarser dust (particles greater than 10µm) is generally regarded as 'disamenity dust' and can be associated with annoyance, although there are no official standards for dust annoyance<sup>3</sup>. Disamenity dust is more readily described than defined as it relates to the visual impact of short-lived dust clouds and the long-term soiling of surfaces.

Although it is a widespread environmental phenomenon, dust is also generated through many anthropogenic activities including materials handling, construction, demolition, and vehicle use. Dust is generally produced by mechanical action on materials and is carried by moving air when there is sufficient energy in the airstream. More energy is required for dust to become airborne than for it to remain suspended.

#### 2.1.2 Nitrogen Dioxide

NO<sub>2</sub> and nitric oxide (NO) are collectively referred to as oxides of nitrogen (NO<sub>x</sub>). During fuel combustion, atmospheric nitrogen combines with oxygen to form NO, which is not considered harmful. Through a chemical reaction with ozone (O<sub>3</sub>), NO further combines with oxygen to create NO<sub>2</sub>.

Short-term exposure to concentrations of NO<sub>2</sub> can cause inflammation of the airways and increase susceptibility to respiratory infections and to allergens. NO<sub>2</sub> can exacerbate the symptoms of those already suffering from lung or heart conditions.

#### 2.1.3 Particulate Matter

Particulate matter (PM) is everything in the air that is not a gas and therefore consists of a huge variety of chemical compounds and materials, some of which can be toxic. Due to the small size of many of the particles that form PM, some of these toxins may

---

<sup>3</sup> Note that the expression 'nuisance dust' refers here to 'generally visible particulate matter' rather than specifically and in a legal sense to statutory nuisance, as defined in Section 79 of the Environmental Protection Act 1990.



enter the bloodstream and can be transported around the body, lodging in the heart, brain and other organs. Therefore, exposure to PM can result in serious impacts to health, especially in vulnerable groups of people such as the young, elderly, and those with respiratory problems.

Particulates are classified according to size: particles are less than 10 micrometres in diameter (PM<sub>10</sub>) and less than 2.5 micrometres in diameter (PM<sub>2.5</sub>).

## 2.2 Relevant Air Quality Objectives

The AQO listed in Table 2.1 are only applicable at locations where a member of the public could be reasonably expected to spend the relevant averaging period. Further examples of this are presented in Table 2.2.

**Table 2.1: Relevant AQO**

| Pollutant                                  | Averaging Period | AQO (µg/m <sup>3</sup> ) | Exceedance Allowance | Percentile Equivalent |
|--------------------------------------------|------------------|--------------------------|----------------------|-----------------------|
| Nitrogen Dioxide (NO <sub>2</sub> )        | Annual           | 40                       | -                    | -                     |
|                                            | 1-hour           | 200                      | 18 per annum         | 99.79 <sup>th</sup>   |
| Particulate Matter (as PM <sub>10</sub> )  | Annual           | 40                       | -                    | -                     |
|                                            | 24-hour          | 50                       | 35 per annum         | 90.41 <sup>st</sup>   |
| Particulate Matter (as PM <sub>2.5</sub> ) | Annual           | 20                       | -                    | -                     |
|                                            |                  | 12*                      | -                    | -                     |
|                                            |                  | 10**                     | -                    | -                     |

Source: <https://uk-air.defra.gov.uk/air-pollution/uk-limits.php>

Notes: \* Interim PM<sub>2.5</sub> target to be achieved by 2028

\*\* Legally binding PM<sub>2.5</sub> target to be achieved by 2040

**Table 2.2: Examples of where AQO should apply**

| Averaging period | AQO should apply at                                                                                                                                      | AQO should not apply at                                                                                                                                                                                                                                                                                                                                        |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Annual           | All locations where members of the public might be regularly exposed.<br>Building façades of residential properties, schools, hospitals, care homes etc. | Building façades of offices or other places of work where members of the public do not have regular access. Hotels, unless people live there as their permanent residence.<br>Gardens of residential properties.<br>Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short-term. |



| Averaging period | AQO should apply at                                                                                                                                                                                                                                                                                                                                                                                                                                                         | AQO should not apply at                                                                                                                    |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| 24 Hour          | All locations where the annual mean objective would apply, together with hotels and gardens of residential properties <sup>(a)</sup> .                                                                                                                                                                                                                                                                                                                                      | Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short-term. |
| 1 Hour           | <p>All locations where the annual mean and 24 and 8-hour mean objectives apply.</p> <p>Kerbside sites (for example, pavements of busy shopping streets).</p> <p>Those parts of car parks, bus stations and railway stations etc. which are not fully enclosed, where members of the public might reasonably be expected to spend one hour or more.</p> <p>Any outdoor locations where members of the public might reasonably have expected to spend one hour or longer.</p> | Kerbside sites where the public would not be expected to have regular access.                                                              |

Notes: <sup>(a)</sup> "Such locations should represent parts of the garden where relevant public exposure to pollutants is likely, for example where there is seating or play areas. It is unlikely that relevant public exposure to pollutants would occur at the extremities of the garden boundary, or in front gardens, although local judgement should always be applied

Source: Department for Environment Food and Rural Affairs (2022): 'Local Air Quality Management Technical Guidance' (TG.22).



### 3 Methodology

This section sets out the approach taken to assess the potential impacts on air quality during the construction and operational phases of the proposed development.

#### 3.1 Scope of the Assessment

The assessment is based on the scope of work presented in Table 3.1.

**Table 3.1: Scope of Work**

| Scope    | Consideration                                                                                                                                                                                                                                                                                      |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Spatial  | The assessment considers the impact of NO <sub>2</sub> , PM <sub>10</sub> and PM <sub>2.5</sub> emissions from local sources upon the proposed development site.<br>It also considers the potential impact from emissions associated with the proposed development upon existing receptors.        |
| Temporal | The construction phase impacts resulting from the proposed development have been considered for the earliest possible construction year (2026).<br>The operational phase impacts resulting from the proposed development have been considered for the earliest possible year of occupation (2027). |

#### 3.2 Construction Phase

The proposed development has the potential to generate dust during the construction phase of the project. Although there are no standards (such as AQO) for dust disamenity or annoyance, various 'customs and practice' criteria have become established.

For the purposes of this assessment, IAQM's 2024 Construction Dust Risk guidance<sup>4</sup> has been used to carry out a construction dust risk assessment. The IAQM guidance provides a methodology (Appendix C) to evaluate potential risk of dust generation for a development and the level of mitigation required. The impact of the development is described using one of the following three categories: 'Low Risk', 'Medium Risk' and 'High Risk'. Based on the risk level, appropriate mitigation measures can be considered to minimise any risk of dust impacts from the construction phase.

#### 3.3 Operational Phase

##### 3.3.1 Road Source Emissions

The IAQM and EPUK planning guidance contains indicative criteria on when to proceed to a detailed assessment. The criteria relating to changes in traffic flow are as follows:

A change of HDV flows of:

<sup>4</sup> Institute of Air Quality Management (2024): 'Guidance on the Assessment of Dust from Demolition and Construction v2.2'



- More than 25 annual average daily traffic (AADT) flows within, or adjacent to, an AQMA;
- More than 100 AADT elsewhere.

A change of LDV flows of:

- More than 100 AADT within or adjacent to an AQMA;
- More than 500 AADT elsewhere.

The proposed scheme is not located within or adjacent to an AQMA; therefore, the less stringent criteria apply.

The appointed transport consultant, KMC Transport Planning, have confirmed that the less stringent criteria will not be triggered.

This, along with the set-back location of the proposed development, means a detailed assessment of road source emissions can be scoped out.

### 3.3.2 Point Source Emissions

The proposed energy strategy is not available at this stage. Keschco Ltd aspire to have the heating and hot water demands of the proposed development will be through fully electric means, with no gas fired plant installed. If this is not feasible, ultra-low NO<sub>x</sub> boilers will be installed meeting a maximum emission rate of 40mg NO<sub>x</sub>/kWh.

An assessment of point source emissions can therefore be scoped out.



## 4 Baseline Conditions

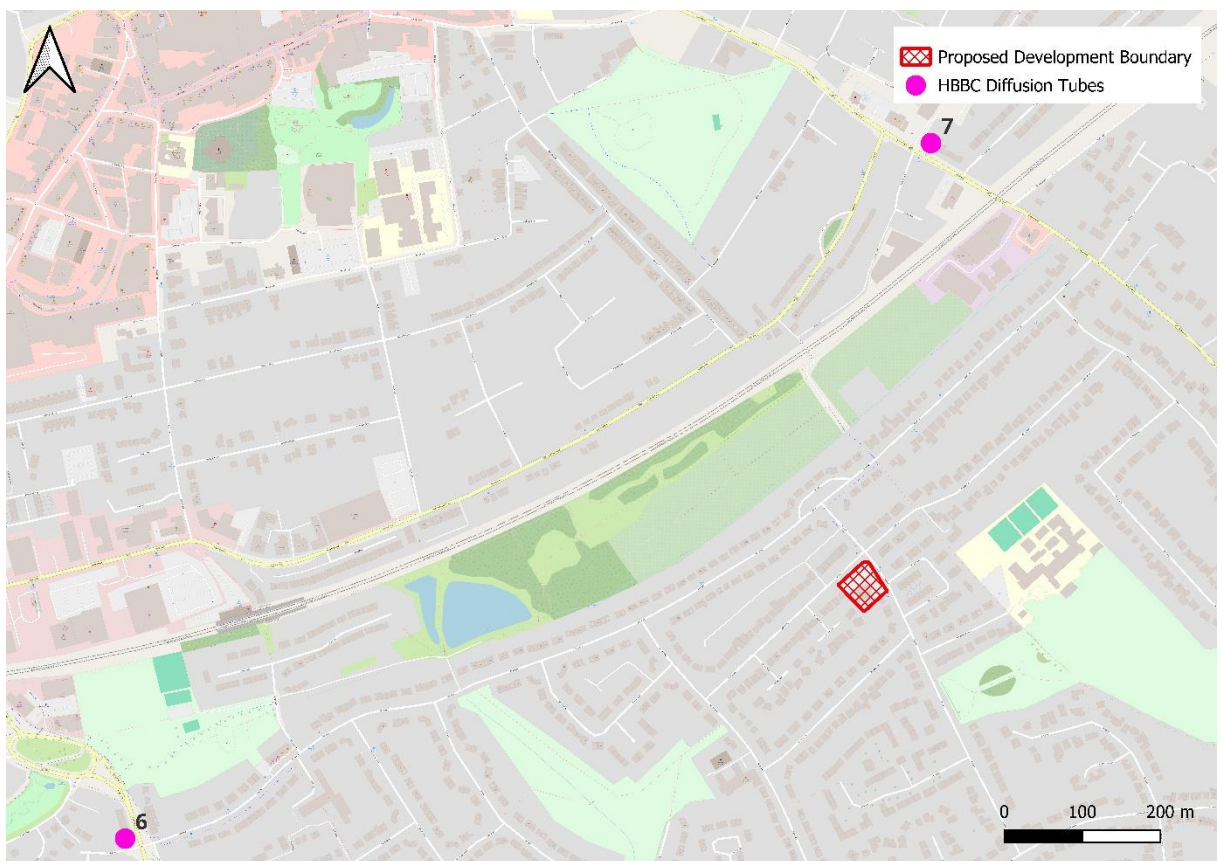
The following section sets out the baseline conditions in relation to air quality at the proposed development site. For the purpose of this assessment, data has been obtained from the HBBC 2023 Air Quality Annual Status Report (ASR)<sup>5</sup> and Defra resources<sup>6</sup>.

### 4.1 HBBC Automatic Monitoring

HBBC does not undertake automatic monitoring within its borough.

### 4.2 HBBC Diffusion Tube Monitoring

HBBC undertook diffusion tube monitoring at 16 sites across the borough in 2022. As illustrated in Figure 4.1, there are two sites within 1km of the proposed development site.



**Figure 4.1: HBBC Diffusion Tube Locations**

Table 4.1 presents the monitored NO<sub>2</sub> annual mean concentrations recorded at these sites for the latest three-year period available.

<sup>5</sup> Hinckley & Bosworth Borough Council (2023). '2023 Air Quality Annual Status Report'.

<sup>6</sup> <https://uk-air.defra.gov.uk/>.



**Table 4.1: HBBC Diffusion Tube NO<sub>2</sub> Annual Mean Concentrations**

| Site ID | Site Type | Annual mean NO <sub>2</sub> Concentration (µg/m <sup>3</sup> ) |      |      |
|---------|-----------|----------------------------------------------------------------|------|------|
|         |           | 2020                                                           | 2021 | 2022 |
| 6       | Suburban  | 15.6                                                           | 17.0 | 16.4 |
| 7       | Suburban  | 16.9                                                           | 17.6 | 18.1 |

Notes: Exceedance of the NO<sub>2</sub> annual mean AQO of 40µg/m<sup>3</sup> are shown in **bold**.  
NO<sub>2</sub> annual means in excess of 60µg/m<sup>3</sup>, indicating a potential exceedance of the NO<sub>2</sub> hourly mean AQO are shown in **bold** and underlined.  
Means were “annualised” in accordance with LLAQM Technical Guidance, when valid data capture is less than 75%.

### 4.3 Defra Modelled Background Pollution Concentrations

Defra provides background pollution concentration estimates to assist local authorities in undertaking their ‘Review and Assessment’ work. This data is available to download from the Defra air quality resource website for NO<sub>x</sub>, NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> for every 1km X 1km grid square for all local authorities. The current dataset is based on 2021 background data and future year projections are available for 2021 to 2040. The background dataset provides breakdown of pollution concentrations by different sources (both road and non-road sources).

Table 4.2 presents the predicted background concentrations for the earliest anticipated year of occupation (2028) for the proposed development.

**Table 4.2: Defra Projected Background Concentrations at the Proposed Development**

| Year | Annual mean Concentration (µg/m <sup>3</sup> ) |                  |                   |
|------|------------------------------------------------|------------------|-------------------|
|      | NO <sub>2</sub>                                | PM <sub>10</sub> | PM <sub>2.5</sub> |
| 2028 | 8.9                                            | 12.5             | 7.9               |

Note: Data presented within the table are derived from the following ordinance survey grid square: 443500, 293500.

### 4.4 Baseline Summary

As illustrated in Figure 4.1, there are two monitoring points within 1km of the proposed development site.

The sites listed in Table 4.1 have been used to conservatively inform ambient NO<sub>2</sub> concentrations across the proposed development site.

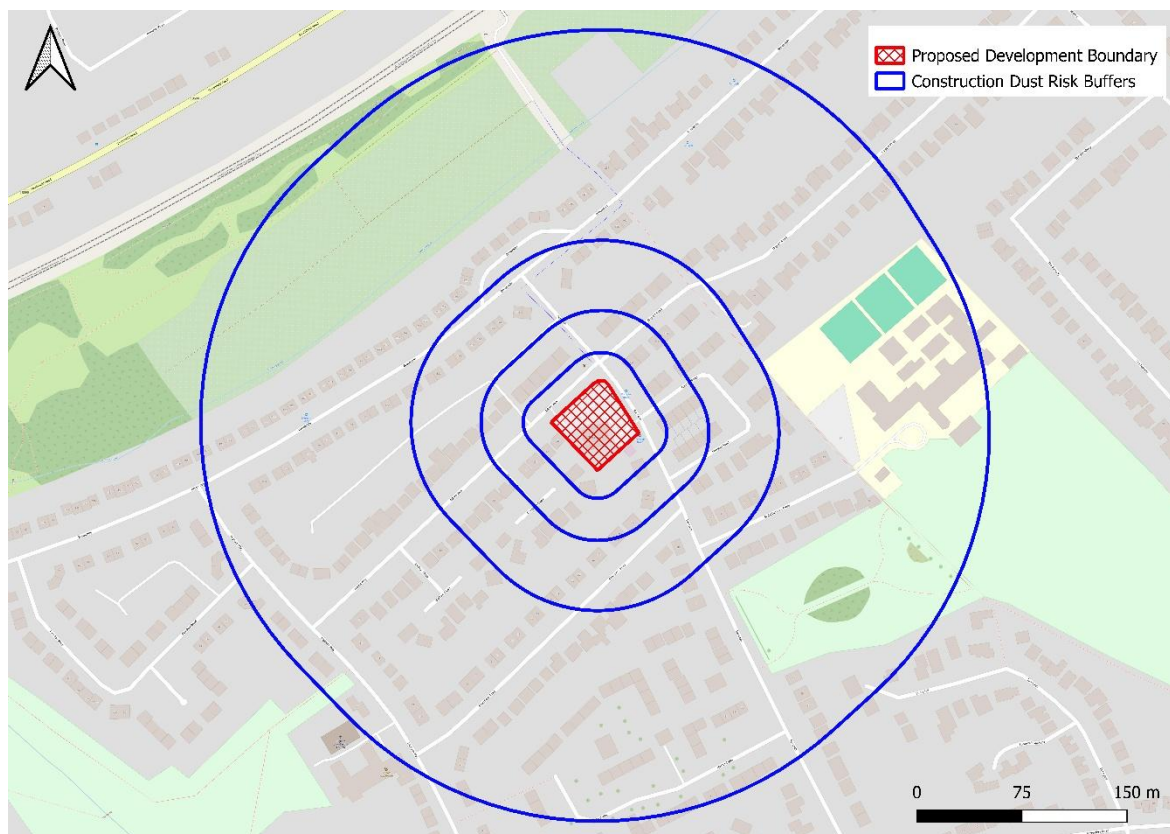
In the absence of representative PM monitoring data, the Defra backgrounds have been used to inform ambient PM<sub>10</sub> and PM<sub>2.5</sub> concentrations across the proposed development site.



## 5 Potential Impacts

### 5.1 Construction Phase

The earliest construction year could be 2027, subject to planning. The impacts from demolition, earthworks, construction and trackout have been considered. To assess the worst-case scenario, it has been assumed that all activities will be carried out for the duration of the construction period. Figure 5.1 shows the construction dust risk assessment buffers based on the recommended distances by IAQM.



**Figure 5.1: Construction Dust Risk Assessment Buffers**

Magnitude and sensitivity descriptors that have been applied to assess the overall impact of the construction phase are presented in Appendix C.

The dust emission magnitude for demolition is 'Small', with the total building volume to be demolished measuring below 12,000m<sup>3</sup>.

The dust emission magnitude for earthworks is 'Small', with the total earthworks area measuring below 18,000m<sup>2</sup>.

The dust emission magnitude for construction is expected to be 'Small', with the total building volume below 25,000m<sup>3</sup>.

It is anticipated that the outward daily peak HGV movements will be less than 20 HDV movements in a day, so the dust emission magnitude for trackout has been assigned as 'Small'.



There are no ecological receptors within 50m of the site or 250m from the site entrance, therefore the risk of construction dust impacts upon ecological receptors is not considered further.

**Table 5.1: Dust Emission Magnitude**

| Activity     | Dust Emission Magnitude |
|--------------|-------------------------|
| Demolition   | Small                   |
| Earthworks   | Small                   |
| Construction | Small                   |
| Trackout     | Small                   |

Residential receptors are considered to be a 'High' sensitivity receptor. There are between 1-10 high sensitivity receptors within 20m of the site boundary.

Table 5.2 presents the sensitivity of the surrounding area to effects caused by construction activities and is based on the criteria presented in Appendix C.

**Table 5.2: Sensitivity of Study Area**

| Potential Impact | Sensitivity of the surrounding area |            |              |          |
|------------------|-------------------------------------|------------|--------------|----------|
|                  | Demolition                          | Earthworks | Construction | Trackout |
| Dust Soiling     | Medium                              | Medium     | Medium       | Medium   |
| Human Health     | Low                                 | Low        | Low          | Low      |

The overall risk of dust soiling and human health impacts to high sensitivity receptors are presented in Table 5.3. The risk is based on the criteria presented in Appendix C.

**Table 5.3: Summary of the Risk of Construction Dust Impacts**

| Sensitivity of Area | Risk       |            |              |            |
|---------------------|------------|------------|--------------|------------|
|                     | Demolition | Earthworks | Construction | Trackout   |
| Dust Soiling        | Low Risk   | Low Risk   | Low Risk     | Negligible |
| Human Health        | Negligible | Negligible | Negligible   | Negligible |

Based upon the above, the largest risk associated with dust soiling is classified as 'Low'. With respect to human health impacts, the risk is 'Negligible'.

Mitigation measures appropriate for the proposed development have been presented in Appendix D. Following the implementation of these mitigation measures, the impacts from the construction phase of the proposed development on dust soiling and human health are considered not to be significant.

## 5.2 Operational Phase

### 5.2.1 Site Suitability for the Introduction of Residential Receptors



At the proposed retail/commercial element, only the short term AQO listed in Table 2.1 are applicable. At the proposed residential element, all of the AQO listed in Table 2.1 are applicable.

Data from two diffusion tube sites has been used to conservatively inform ambient NO<sub>2</sub> concentrations across the proposed development site. They are considered conservatively representative as they are on busier roads than the proposed development and closer to the kerbside than the proposed development façade.

The NO<sub>2</sub> concentrations presented in Table 4.1 show that all NO<sub>2</sub> AQO will be comfortably met at across the proposed development site.

The PM<sub>10</sub> and PM<sub>2.5</sub> concentrations presented in Table 4.2 show that all PM AQO for will be met across the proposed development site.

The proposed development is considered suitable for occupation in 2028 and subsequent years if delayed.



## 6 Mitigation Measures

### 6.1 Construction Phase

Particle generation from construction and demolition activities can be substantially reduced through carefully selected mitigation techniques and effective management. The most effective technique is to control at source, as once particles are airborne, it is difficult to prevent them from dispersing into the surrounding area. However, once airborne, water sprays are probably the most effective method for suppression.

Pre-project planning, implementation and on-site management issues are an essential requirement for effective dust control. This includes, for example, environmental risk assessments, method statements, training and satisfying planning requirements. Before the start of a project, it is also important to identify which construction activities are likely to generate dust and to draw up action plans to minimise emissions to the atmosphere. Dust emissions from construction sites will mainly be the sum of a large number of small activities. Therefore, attention to detail is a critical feature of effective management of the total site emissions.

Site specific mitigation measures should be set up based on the risk effects as outlined in Table 5.3. Examples of these measures are provided in the IAQM guidance document and summarised in Appendix D.

### 6.2 Operational Phase

EV charge points could be installed to encourage uptake of EV use.



## 7 Conclusion

This report provides an assessment on the following key issues associated with the construction and operation phases of the proposed change of use at The Woolcomber, Hinckley, LE10 2PH:

- Nuisance, loss of amenity and health impacts associated with the construction phase of the proposed development on sensitive receptors;
- Characterising the baseline conditions at the site using monitored pollutant data from HBBC and Defra resources;
- Assessing the suitability of the proposed development for the addition of new residential receptors;
- Assessing the impact of the proposed development on existing receptors; and
- Making recommendations for mitigation measures if required.

A qualitative assessment on the construction phase activities has been carried out. The largest risk of these activities towards dust soiling was classified to be 'Low', while that towards human health was 'Negligible'. Following proper implementation of the measures recommended in Appendix D, the impact of emissions during construction of the development is likely to be 'Negligible' and therefore 'Not Significant'.

The change in trip generation associated with the proposed development is unlikely to result in a detrimental pollution impact upon the local highway network and at existing sensitive receptors.

Following a review of air quality data, the proposed development is considered suitable for the introduction of new residential receptors.

It can therefore be concluded that the proposed development is not considered to conflict with national, regional, and local planning guidance.



## Appendix A: Legislation, Policy and Non-Statutory Guidance

### European Union

Whilst the UK has left the EU, it is pertinent to understand the origins of the current UK legislation. The European Union (EU) sets legally binding limit values for outdoor air pollutants to be met by EU countries by a given date. These limit values are based on the World Health Organisation (WHO) guidelines on outdoor air pollutants. These are legally binding and set out to protect human health and the environment by avoiding, preventing or reducing harmful air pollution effects.

Directive 2008/50/EC<sup>7</sup> on ambient air quality and cleaner air for Europe entered into force in June 2008. This merged the existing 'Daughter' Directives<sup>8,9,10,11</sup> (apart from the fourth Daughter Directive), maintaining existing air quality objectives set out by 'Daughter' Directives for:

- Sulphur dioxide (SO<sub>2</sub>);
- Nitrogen dioxide (NO<sub>2</sub>);
- Oxides of nitrogen (NO<sub>x</sub>);
- Particulate matter (PM<sub>2.5</sub> and PM<sub>10</sub>);
- Lead (Pb);
- Benzene (C<sub>6</sub>H<sub>6</sub>);
- Carbon monoxide (CO); and
- Ozone (O<sub>3</sub>).

Directive 2008/50/EC also includes related objectives, exposure concentration obligations and exposure reduction targets for PM<sub>2.5</sub> (fine particles). The 'Daughter' Directives were based upon requirements set out in the first EU Ambient Air Quality Framework Directive 96/92/EEC<sup>12</sup>.

### England

The 2008 EU ambient air quality directive 2008/50/EC was transposed into English law through the introduction of the Air Quality (Standards) Regulations in 2010<sup>13</sup> which also incorporated the fourth EU Daughter Directive (2004/107/EC) that set target values for certain toxic heavy metals and polycyclic aromatic hydrocarbons<sup>7</sup> (PAH).

The UK government has a legal responsibility to meet the limit values converted into domestic law through the European Union (Withdrawal) Act 2018. Part IV of the 2021

<sup>7</sup> European Union. (2008), 'Ambient air quality assessment management', Framework Directive 2004/50/EC.

<sup>8</sup> European Union. (1999), 'Ambient air quality assessment management', Framework Directive 1999/30/EC.

<sup>9</sup> European Union. (2000), 'Ambient air quality assessment management', Framework Directive 2000/3/EC.

<sup>10</sup> European Union. (2002), 'Ambient air quality assessment management', Framework Directive 2002/3/EC.

<sup>11</sup> European Union. (2004), 'Ambient air quality assessment management', Framework Directive 2004/107/EC.

<sup>12</sup> European Union. (1996), 'Ambient air quality assessment management', Framework Directive 96/62/EC.

<sup>13</sup> Statutory Instrument. (2010), 'The Air Quality Standards Regulations', No. 1001. Queen's Printer of Acts of Parliament.



Environment Act<sup>14</sup> sets guidelines for protecting air quality in the UK and forms the basis of local air quality management. The Environment Act requires local authorities in the UK to review air quality in their area periodically and designate AQMAs where the objectives are not being achieved or are not likely to be achieved within the relevant period. Where an AQMA is designated, local authorities are also required to produce an 'Air Quality Action Plan' (AQAP) detailing the pollution reduction measures that need to be adopted to achieve the relevant air quality objectives within an AQMA.

As part of the Environment Act, the UK Government was required to publish a national Air Quality Strategy (AQS) to establish the system of 'local air quality management' (LAQM) for the designation of AQMAs. This led to the introduction of the first AQS in 1997<sup>15</sup> which has since progressed through several revisions. Each revision introduced strategies and regulations that considered measures for different pollutants by tightening existing objectives and also by introducing new ones to establish a common framework to protect human health and the environment by achieving ambient air quality improvements.

### The Air Quality Strategy

The AQS<sup>16</sup> fulfils the statutory requirement of the Environment Act 2021 to publish an AQS every five years, setting out air quality standards, objectives, and measures for improving ambient air quality.

The revised strategy (2023) supersedes Volume 1 of the 2007 air quality strategy in England only. In Northern Ireland and Scotland, the strategy (Volume 1) remains in force.

The AQS sets out a framework to enable local authorities to deliver for their communities and contribute to the long-term air quality goals, including ambitious new targets for fine particulate matter (PM<sub>2.5</sub>).

The two new targets are:

- 10µg/m<sup>3</sup> annual mean concentration PM<sub>2.5</sub> nationwide by 2040, with an interim target of 12µg/m<sup>3</sup> by January 2028.
- 35% reduction in average population exposure by 2040, with an interim target of a 22% reduction by January 2028, both compared to a 2018 baseline.

The new targets should help drive reductions in the worst PM<sub>2.5</sub> hotspots across the country, whilst ensuring nationwide action to improve air quality.

The AQS sets standards and objectives for pollutants to protect human health, vegetation and ecosystems. The pollutant objectives are the dates by which each standard is to be achieved, taking into account economic considerations, practical and technical feasibility.

<sup>14</sup> Parliament of the United Kingdom. (2021), 'Environmental Protection Act'.

<sup>15</sup> Department for Environment Food and Rural Affairs. (1997), 'The United Kingdom National Air Quality Strategy', Cm 3587, Department for Environment Food and Rural Affairs.

<sup>16</sup> Department for Environment Food and Rural Affairs. (2023), 'Air Quality Strategy: framework for local authority delivery'.



## National Planning Policy Framework

The principal national planning policy guidance in respect of the proposed development is the National Planning Policy Framework (NPPF)<sup>17</sup>. The most recent minor update of the NPPF was published in February 2025 by the Ministry of Housing, Communities & Local Government.

The NPPF 2025 contains five sections which are relevant to air quality.

Section 110 states that:

*"The planning system should actively manage patterns of growth in support of these objectives. Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions, and improve air quality and public health. However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making."*

Section 187 (e) states that:

*"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 and water quality, taking into account relevant information..."*

Section 198 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."*

Section 199 states that:

*"Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications. Planning decisions should ensure that any new development in*

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<sup>17</sup> National Planning Policy Framework. Accessible at: <https://www.gov.uk/government/publications/national-planning-policy-framework--2>



*Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan."*

Section 201 states that:

*"The focus of planning policies and decisions should be on whether proposed development is an acceptable use of land, rather than the control of processes or emissions (where these are subject to separate pollution control regimes). Planning decisions should assume that these regimes will operate effectively. Equally, where a planning decision has been made on a particular development, the planning issues should not be revisited through the permitting regimes operated by pollution control authorities."*

### National Planning Practice Guidance

The DCLG published a number of supporting web-based resources of Planning Practice Guidance (PPG)<sup>18</sup> to supplement the NPPF. With respect to air quality the PPG<sup>19</sup> provides guidance on when air quality is relevant to a planning application. It states that:

*"Whether air quality is relevant to a planning decision will depend on the proposed development and its location. Concerns could arise if the development is likely to have an adverse effect on air quality in areas where it is already known to be poor, particularly if it could affect the implementation of air quality strategies and action plans and/or breach legal obligations (including those relating to the conservation of habitats and species). Air quality may also be a material consideration if the proposed development would be particularly sensitive to poor air quality in its vicinity."*

The PPG also states that, when deciding whether air quality is relevant to a planning application, the applicant should consider whether the proposal will:

- *"Lead to changes (including any potential reductions) in vehicle-related emissions in the immediate vicinity of the proposed development or further afield....."*
- *Introduce new point sources of air pollution.....,*
- *Expose people to harmful concentrations of air pollutants .....,*
- *Give rise to potentially unacceptable impact (such as dust) during construction for nearby sensitive locations....,*
- *Have a potential adverse effect on biodiversity, especially where it would affect sites designated for their biodiversity value."*

### Statutory Nuisance

It is recognised that the planning system presents a way of protecting amenity. However, in cases where planning conditions are not applicable to a

<sup>18</sup> National Planning Practice Guidance web-based resource. Accessible at: <http://planningguidance.planningportal.gov.uk/>

<sup>19</sup> Paragraph: 005 Ref ID 32-005-20140306, revision date 01.11.2019



development/installation, the requirements of the Environmental Protection Act 1990 still apply. Under Part III of the Environmental Protection Act 1990, local authorities have a statutory duty to investigate any complaints of:

- *"any premises in such a state as to be prejudicial to health or a nuisance*
- *smoke emitted from premises so as to be prejudicial to health or a nuisance*
- *fumes or gases emitted from premises so as to be prejudicial to health or a nuisance*
- *any dust, steam, smell or other effluvia arising on industrial, trade or business premises and being prejudicial to health or a nuisance*
- *any accumulation or deposit which is prejudicial to health or a nuisance"*

Where the local authority establishes that any one of these issues constitutes a statutory nuisance and believes it to be unreasonably interfering with the use or enjoyment of someone's premises and/or is prejudicial to health, an abatement notice will be served on the person responsible for the offence or the owner / occupier. Failure to comply with the notice could lead to a prosecution. It is however considered as a defence if the best practicable means to prevent or to counteract the effects of the nuisance are employed.

## Local (Hinckley & Bosworth Borough Council)

### Site Allocations and Development Management Policies DPD

The Site Allocations and Development Management Policies DPD<sup>20</sup> was adopted in July 2016. It includes development management policies which apply across the borough and which will be used when determining planning applications.

The DPD contains two relevant policies which relate to air quality. Policy DM7 'Preventing Pollution and Flooding' states:

*"Adverse impacts from pollution and flooding will be prevented by ensuring that development proposals demonstrate that:*

*.....*

*f) It will not contribute to poor air quality."*

Policy DM10 'Development and Design' states:

*"Developments will be permitted providing that the following requirements are met:*

*a) It would not have a significant adverse effect on the privacy and amenity of nearby residents and occupiers of adjacent buildings, including matters of lighting, air quality (including odour), noise, vibration and visual intrusion;"*

<sup>20</sup> Hinckley & Bosworth Borough Council. (2016), 'Site Allocations and Development Management Policies DPD'



## Appendix B: Operational Impact Assessment

### Methodology

The EPUK & IAQM guidance refers to the Town and Country Planning (Development Management Procedure) Order (England) 2010 [(Wales) 2012] for a definition of a 'major' development when scoping assessments required for the planning process. Based on the guidance, a 'major' development is such development where:

- The number of dwellings is 10 or above;
- The residential development is carried out on a site of more than 0.5ha where the number of dwellings is unknown;
- The provision of more than 1,000m<sup>2</sup> commercial floorspace; or,
- Development carried out on land of 1ha or more.

It is recommended that consideration should be given to reduce impacts from any 'major' developments by considering:

- The impact of existing sources in the local area on the proposed development; and
- The impacts of the proposed development on the local area.

The assessment process involves two stages where:

**Stage 1** scope out the need for an air quality assessment and **Stage 2** provide guidance of determining the level of assessment required for a project.

Table B.1 below sets out the Stage 1 criteria to determine the need to assess impacts arising from small developments and Table B.2 provides more specific guidance as to when an air quality assessment is likely to be required to assess the impacts of the proposed development on the local area.

**Table B.1: Stage 1 Criteria to Proceed to Stage 2**

| Criteria to Proceed to Stage 2 |                                                                                                                                                                                                                                                                 |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A                              | <p>If any of the following apply:</p> <ul style="list-style-type: none"><li>• 10 or more residential units on a site area of more than 0.5ha</li><li>• More than 1,000m<sup>2</sup> of floor space for all other uses or a site area greater than 1ha</li></ul> |
| B                              | <p>Coupled with any of the following:</p> <ul style="list-style-type: none"><li>• The development has more than 10 parking spaces</li><li>• The development will have a centralised energy facility or other centralised combustion process</li></ul>           |



**Table B.2: Indicative Criteria for Requiring an Air Quality Assessment**

| The development will                                                                                                                                                                                                                                                      | Indicative Criteria to Proceed to an Air Quality Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Cause a significant change in Light Duty Vehicle (LDV) traffic flows on local roads with relevant receptors. (LDV = cars and small vans <3.5t gross vehicle weight).                                                                                                   | A change of LDV flows of: <ul style="list-style-type: none"> <li>- more than 100 AADT within or adjacent to an AQMA</li> <li>- more than 500 AADT elsewhere.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 2. Cause a significant change in Heavy Duty Vehicle (HDV) flows on local roads with relevant receptors. (HDV = goods vehicles + buses >3.5t gross vehicle weight).                                                                                                        | A change of HDV flows of: <ul style="list-style-type: none"> <li>- more than 25 AADT within or adjacent to an AQMA</li> <li>- more than 100 AADT elsewhere.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 3. Realign roads, i.e. changing the proximity of receptors to traffic                                                                                                                                                                                                     | Where the change is 5m or more and the road is within an AQMA.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 4. Introduce a new junction or remove an existing junction near to relevant receptors.                                                                                                                                                                                    | Applies to junctions that cause traffic to significantly change vehicle accelerate/decelerate, e.g. traffic lights, or                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 5. Introduce or change a bus station.                                                                                                                                                                                                                                     | Where bus flows will change by: <ul style="list-style-type: none"> <li>- more than 25 AADT within or adjacent to an AQMA</li> <li>- more than 100 AADT elsewhere.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 6. Have an underground car park with extraction system.                                                                                                                                                                                                                   | The ventilation extract for the car park will be within 20 m of a relevant receptor.<br>Coupled with the car park having more than 100 movements per day (total in and out).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 7. Have one or more substantial combustion processes, where there is a risk of impacts at relevant receptors.<br><br>NB. this includes combustion plant associated with standby emergency generators (typically associated with centralised energy centres) and shipping. | Typically, any combustion plant where the single or combined NO <sub>x</sub> emission rate is less than 5 mg/sec is unlikely to give rise to impacts, provided that the emissions are released from a vent or stack in a location and at a height that provides adequate dispersion.<br><br>In situations where the emissions are released close to buildings with relevant receptors, or where the dispersion of the plume may be adversely affected by the size and/or height of adjacent buildings (including situations where the stack height is lower than the receptor) then consideration will need to be given to potential impacts at much lower emission rates.<br><br>Conversely, where existing nitrogen dioxide concentrations are low, and where the dispersion conditions are favourable, a much higher emission rate may be acceptable. |



## Appendix C: Construction Dust Risk Assessment Criteria

IAQM guidance framework on assessing the risk of dust proposes the construction phase should be split into phases dependent on their potential impacts, determining the risk for each individually. Therefore, this assessment has determined the risk of the four construction categories put forward by the IAQM guidance:

- Demolition;
- Earthworks;
- Construction; and
- Track out (transport of dust and dirt onto the public road network).

The IAQM guidance framework states that the risk of dust impacts from the four categories can be defined as 'negligible', 'low risk', 'medium risk' or 'high risk' depending upon the scale and nature of the construction activity and the sensitivity and proximity of receptors to the construction site boundary. This categorisation is used to put forward appropriate mitigation measures, reducing the level of effects from the dust impacts so they are not significant.

The assessment of dust impacts using the IAQM guidance considers three separate effects from dust:

- Annoyance due to dust soiling;
- Harm to ecological receptors; and
- The risk of health effects due to significant increase in exposure to PM<sub>10</sub>.

Step 1 of the assessment is set out to screen for the requirement for a more detailed assessment for the proposed development. The screening criteria states:

A 'human receptor' within:

- 250m of the boundary of the application site; or
- 50m of the route(s) used by construction vehicles on the public highway, up to 250m from the site entrance(s).

An 'ecological receptor' within:

- 50m of the boundary of the application site; or
- 50m of the route(s) used by construction vehicles on the public highway, up to 250m from the site entrance(s).

Where there are no receptors and the level of risk is deemed 'negligible', there is no need for further assessment.



Step 2A of the assessment enables the overall dust emission magnitude (small, medium or large) from each dust source (demolition, earthworks, construction and trackout) to be identified in relation with the criteria outlined in Table C.1.

**Table C.1: Dust emission magnitude**

| Source              | Large                                                                                                                                                                                                                                              | Medium                                                                                                                                                                                             | Small                                                                                                                                                                                                             |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Demolition</b>   | Total building volume >75,000m <sup>3</sup> , potentially dusty construction material (e.g. concrete), on-site crushing and screening, demolition activities >12m above ground level.                                                              | Total building volume 12,000m <sup>3</sup> – 75,000m <sup>3</sup> , potentially dusty construction material, demolition activities 6-12m above ground level.                                       | Total building volume <12,000m <sup>3</sup> , construction material with low potential for dust release (e.g. metal cladding or timber), demolition activities <6m above ground, demolition during wetter months. |
| <b>Earthworks</b>   | Total site area >110,000m <sup>2</sup> , potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size), >10 heavy earth moving vehicles active at any one time, formation of bunds >6m in height. | Total site area 18,000m <sup>2</sup> –110,000m <sup>2</sup> , moderately dusty soil type (e.g. silt), 5-10 heavy earth moving vehicles active at any one time, formation of bunds 3m-6m in height. | Total site area <18,000m <sup>2</sup> , soil type with large grain size (e.g. sand), <5 heavy earth moving vehicles active at any one time, formation of bunds <4 m in height.                                    |
| <b>Construction</b> | Total building volume >75,000m <sup>3</sup> , on site concrete batching or sandblasting.                                                                                                                                                           | Total building volume 12,000m <sup>3</sup> – 75,000m <sup>3</sup> , potentially dusty construction material (e.g. concrete), on site concrete batching.                                            | Total building volume <12,000m <sup>3</sup> , construction material with low potential for dust release (e.g. metal cladding or timber).                                                                          |
| <b>Track out</b>    | >50 HDV (>3.5t) outward movements <sup>a</sup> in any one day <sup>b</sup> , potentially dusty surface material (e.g. high clay content), unpaved road length >100m.                                                                               | 20-50 HDV (>3.5t) outward movements <sup>a</sup> in any one day <sup>b</sup> , moderately dusty surface material (e.g. high clay content), unpaved road length 50m–100m.                           | <20 HDV (>3.5t) outward movements <sup>a</sup> in any one day <sup>b</sup> , surface material with low potential for dust release, unpaved road length <50m.                                                      |

Notes:

<sup>a</sup> Vehicle movement is a one-way journey. i.e. from A to B, and excludes the return journey.

<sup>b</sup> HDV movements during a construction project vary over its lifetime, and the number of movements is the maximum not the average.



Step 2B allows for the sensitivity of the area (high, medium or low) to be assessed and takes into account a number of factors:

- The specific sensitivities of receptors in the area;
- The proximity and number of those receptors;
- In the case of PM<sub>10</sub>, the existing local background concentration; and
- Site specific factors, such as whether there are natural shelters, such as trees, to reduce the risk of wind-blown dust.

Receptor sensitivity has been based on the highest of any criteria being met thus, the assessment is considered as robust. The sensitivity of the area is further determined for dust soiling, human health and ecosystem effects by considering the criteria presented in Table C.2.

**Table C.2: Magnitude of Receptor Sensitivity**

| Source                                                              | High                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Medium                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Low                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Sensitivities of people to dust soiling effects</b>              | <ul style="list-style-type: none"> <li>• Users can reasonably expect enjoyment of a high level of amenity; or</li> <li>• The appearance, aesthetics or value of their property would be diminished by soiling; and</li> <li>• The people or property would reasonably be expected to be present continuously, or at least regularly for extended periods, as part of the normal pattern of use of the land.</li> <li>• Indicative examples include dwellings, museums and other culturally important collections, medium and long term car parks<sup>b</sup> and car showrooms.</li> </ul> | <ul style="list-style-type: none"> <li>• Users would expect<sup>a</sup> to enjoy a reasonable level of amenity, but would not reasonably expect<sup>a</sup> to enjoy the same level of amenity as in their home; or</li> <li>• The appearance, aesthetics or value of their property could be diminished by soiling; or</li> <li>• The people or property wouldn't reasonably be expected<sup>a</sup> to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land.</li> <li>• Indicative examples include parks and places of work.</li> </ul> | <ul style="list-style-type: none"> <li>• The enjoyment of amenity would not reasonably be expected<sup>a</sup>; or</li> <li>• Property would not reasonably be expected<sup>a</sup> to be diminished in appearance, aesthetics or value by soiling; or</li> <li>• There is transient exposure, where the people or property would reasonably be expected to be present only for limited periods of time as part of the normal pattern of use of the land.</li> <li>• Indicative examples include playing fields, farmland (unless commercially-sensitive horticultural), footpaths, short term car parks<sup>b</sup> and roads.</li> </ul> |
| <b>Sensitivities of people to health effects of PM<sub>10</sub></b> | <ul style="list-style-type: none"> <li>• Locations where members of the public are exposed over a time period relevant to the air quality objective for PM<sub>10</sub> (in the case of the 24-hour objectives, a relevant location)</li> </ul>                                                                                                                                                                                                                                                                                                                                            | <ul style="list-style-type: none"> <li>• Locations where the people exposed are workers<sup>d</sup>, and exposure is over a time period relevant to the air quality objective for PM<sub>10</sub> (in the case of the 24-hour objectives, a</li> </ul>                                                                                                                                                                                                                                                                                                                                                | <ul style="list-style-type: none"> <li>• Locations where human exposure is transient.<sup>e</sup></li> <li>• Indicative examples include public footpaths, playing fields, parks and shopping streets.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                          |



| Source                                                  | High                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Medium                                                                                                                                                                                                                                                                                                                                                                                    | Low                                                                                                                                                                                                                             |
|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                         | would be one where individuals may be exposed for eight hours or more in a day). <sup>c</sup> <ul style="list-style-type: none"> <li>Indicative examples include residential properties. Hospitals, schools and residential care homes should also be considered as having equal sensitivity to residential areas for the purposes of this assessment.</li> </ul>                                                                                                                                                                                                             | relevant location would be one where individuals may be exposed for eight hours or more in a day). <ul style="list-style-type: none"> <li>Indicative examples include office and shop workers, but will generally not include workers occupationally exposed to PM<sub>10</sub>, as protection is covered by Health and Safety at Work legislation.</li> </ul>                            |                                                                                                                                                                                                                                 |
| <b>Sensitivities of receptors to ecological effects</b> | <ul style="list-style-type: none"> <li>Locations with an international or national designation and the designated features may be affected by dust soiling; or</li> <li>Locations where there is a community of a particularly dust sensitive species such as vascular species included in the Red Data List For Great Britain.</li> <li>Indicative examples include a Special Area of Conservation (SAC) designated for acid heathlands or a local site designated for lichens adjacent to the demolition of a large site containing concrete (alkali) buildings.</li> </ul> | <ul style="list-style-type: none"> <li>Locations where there is a particularly important plant species, where its dust sensitivity is uncertain or unknown; or</li> <li>Locations with a national designation where the features may be affected by dust deposition.</li> <li>Indicative example is a Site of Special Scientific Interest (SSSI) with dust sensitive features.</li> </ul> | <ul style="list-style-type: none"> <li>Locations with a local designation where the features may be affected by dust deposition.</li> <li>Indicative example is a local Nature Reserve with dust sensitive features.</li> </ul> |

The final step, Step 2C allows for the risk of impacts to be defined. The dust emission magnitude derived in Step 2A is combined with the sensitivity of the area defined in step 2B to determine the risk of effects on:

- Annoyance due to dust soiling;
- Harm to ecological receptors; and
- The risk of health effects due to an increase in exposure to PM<sub>10</sub>.

The criteria for each of the dust sources are presented in Table C.3, Table C.4, Table C.5 and Table C.6.



**Table C.3: Demolition**

| Sensitivity of Area | Dust Emission Magnitude |             |             |
|---------------------|-------------------------|-------------|-------------|
|                     | Large                   | Medium      | Small       |
| High                | High Risk               | Medium Risk | Medium Risk |
| Medium              | High Risk               | Medium Risk | Low Risk    |
| Low                 | Medium Risk             | Low Risk    | Negligible  |

**Table C.4: Earthworks**

| Sensitivity of Area | Dust Emission Magnitude |             |            |
|---------------------|-------------------------|-------------|------------|
|                     | Large                   | Medium      | Small      |
| High                | High Risk               | Medium Risk | Low Risk   |
| Medium              | Medium Risk             | Medium Risk | Low Risk   |
| Low                 | Low Risk                | Low Risk    | Negligible |

**Table C.5: Construction**

| Sensitivity of Area | Dust Emission Magnitude |             |            |
|---------------------|-------------------------|-------------|------------|
|                     | Large                   | Medium      | Small      |
| High                | High Risk               | Medium Risk | Low Risk   |
| Medium              | Medium Risk             | Medium Risk | Low Risk   |
| Low                 | Low Risk                | Low Risk    | Negligible |

**Table C.6: Track out**

| Sensitivity of Area | Dust Emission Magnitude |             |            |
|---------------------|-------------------------|-------------|------------|
|                     | Large                   | Medium      | Small      |
| High                | High Risk               | Medium Risk | Low Risk   |
| Medium              | Medium Risk             | Medium Risk | Negligible |
| Low                 | Low Risk                | Low Risk    | Negligible |



## Appendix D: Construction Phase Mitigation Measures

The mitigation measures set out below are from IAQM's 2024 guidance for construction dust and are appropriate for the mitigation of the risk determined. The points below can be formerly adopted into a construction dust management plan.

### Mitigation Measures:

- Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.
- Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.
- Display the head or regional office contact information.
- Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Local Authority. The level of detail will depend on the risk and should include as a minimum the highly recommended measures in this document. The desirable measures should be included as appropriate for the site.
- Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.
- Make the complaints log available to the local authority when asked.
- Record any exceptional incidents that cause dust and/or air emissions, either on- or off- site, and the action taken to resolve the situation in the log book.
- Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100 m of site boundary, with cleaning to be provided if necessary.
- Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked.
- Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.
- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.



- Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.
- Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period.
- Avoid site runoff of water or mud.
- Keep site fencing, barriers and scaffolding clean using wet methods.
- Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.
- Cover, seed or fence stockpiles to prevent wind whipping.
- Ensure all vehicles switch off engines when stationary - no idling vehicles.
- Avoid the use of diesel- or petrol- powered generators and use mains electricity or battery powered equipment where practicable.
- Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on un-surfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate).
- Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.
- Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing).
- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.
- Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.
- Use enclosed chutes and conveyors and covered skips.
- Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.



- Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.
- Avoid bonfires and burning of waste materials.
- Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).
- Ensure effective water suppression is used during demolition operations. Hand held sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground.
- Avoid explosive blasting, using appropriate manual or mechanical alternatives.
- Bag and remove any biological debris or damp down such material before demolition.
- Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.
- Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.
- Only remove the cover in small areas during work and not all at once.
- Avoid scabbling (roughening of concrete surfaces) if possible.
- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.
- Non-road mobile machinery (NRMM) controls in line with the industry best practice.