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MIA JAMES CONSTRUCTION & INTERIORS LTD

AIR QUALITY ASSESSMENT

RENSHAW HOUSE, HYDE GROVE, HYDE, MANCHESTER M13 9LQ

Client: Mia James Construction & Interiors Ltd

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1 INTRODUCTION

1.1.1 By instruction from Mia James Construction & Interiors Ltd (the 'client'), NoiseAir Limited was commissioned to undertake an Air Quality Assessment (AQA) in support of a planning application for a proposed development comprising 76 studio PBSA apartments, at Renshaw House, Hyde Grove, Hyde, Manchester M13 9LQ, herein referred to as the 'Site'.

1.1.2 The Site is located adjacent to the Greater Manchester Combined Authority (GMCA) Air Quality Management Area (AQMA) which was last amended in 2016 but evolved from the Manchester AQMA declared in 2007. It is based on modelled 35µg/m^3 isopleths for annual mean Nitrogen Dioxide (NO_2). The AQMA is currently declared for annual mean concentrations of NO_2, and the annual mean objective is 40µg/m^3.

1.1.3 Limitations of this report are outlined in **Appendix A**.

1.2 Site Location and Context

1.2.1 The Site is located at Renshaw House, Hyde Grove, Hyde, Manchester M13 9LQ, at approximate National Grid Reference (NGR): 385310, 396365. **Figure 1** details the location of the Site.

1.2.2 The Site is located in an area where air quality is mainly influenced by road traffic emissions along the local road network and as such, elevated pollutant concentrations may be experienced at and around this location. Subsequently, the Proposed Development may lead to adverse impacts at nearby sensitive receptors, as a result of fugitive dust emissions during construction and road vehicle exhaust emissions during operation. As such, an AQA is required to determine potential impacts associated with the Proposed Development in accordance with the requirements of The National Planning Policy Framework (NPPF). The AQA will therefore consider ambient pollutant concentrations namely nitrogen dioxide (NO_2) and particulate matter (PM_{10} and $PM_{2.5}$) around the Site.

1.2.3 The main potential sources of air pollution were identified as emissions from road transport using the local road network. There are no significant combustion sources identified within the immediate vicinity of the Site that will influence the local air quality.

1.2.4 The Proposed Development is located within the jurisdiction of Manchester City Council (MCC). The planning application proposes the change of use of the Site to provide Purpose Built Student Accommodation (PBSA).

1.2.5 The report presents the findings of an assessment of the potential air quality impacts of the Proposed Development during the construction and operational phases. For both phases, the source type and significance of potential impacts are identified, and measures that should be employed to minimise these are described.

2 LEGISLATION AND POLICY

2.1 Air Quality Legislation and Policy

2.1.1 A summary of the relevant air quality legislation and policy is provided below.

UK Air Quality Strategy

2.1.2 The government's policy on air quality within the UK is set out in the Air Quality Strategy for England, Scotland, Wales and Northern Ireland (AQS)[1] with the latest framework for Local Authority delivery published in 2023[2]. The AQS provides a framework for reducing air pollution in the UK with the aim of meeting the requirements of European Union Legislation.

2.1.3 The AQS also sets standards and objectives for nine key pollutants to protect health, vegetation and ecosystems. These are benzene (C_6H_6), 1,3 butadiene (C_4H_6), carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), particulate matter (PM_{10} and $PM_{2.5}$), sulphur dioxide (SO_2), ozone (O_3), and polycyclic aromatic hydrocarbons (PAHs).

2.1.4 The air quality standards are levels recommended by the Expert Panel on Air Quality Standards (EPAQS) and the World Health Organization (WHO) with regards to current scientific knowledge and the effects of each pollutant on health and the environment.

2.1.5 The Air Quality Objectives (AQOs) are medium-term policy-based targets set by the Government, which take into account economic efficiency, practicability, technical feasibility and timescale. Some objectives are equal to EPAQS recommended standards or WHO guideline limits, whereas other involve a margin of tolerance, i.e. a limited number of permitted exceedances of standards over a given period.

2.1.6 **Table 1** presents the AQOs for pollutants considered within this assessment.

Table 1: National Air Quality Objectives and European Directive Limit Values for the Protection of Human Health

Pollutant	Applies to	Objective	Measured As
NO_2	UK	40µg/m^3	Annual mean
	UK	200µg/m^3 not to be exceeded more than 18 times a year	1-hour mean

[1] Department for Environment, Food and Rural Affairs (Defra) and the Devolved Administrations (2007). The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (Volumes 1 and 2).
[2] Department for Environment, Food and Rural Affairs (Defra, 2023) Policy paper Air quality strategy: framework for local authority delivery. Available at: https://www.gov.uk/government/publications/the-air-quality-strategy-for-england/air-quality-strategy-framework-for-local-authority-delivery#introduction [Accessed 05/02/2024]

Table 1: National Air Quality Objectives and European Directive Limit Values for the Protection of Human Health			
Pollutant	**Applies to**	**Objective**	**Measured As**
PM_{10}	UK (except Scotland)	40µg/m^3	Annual mean
	UK (except Scotland)	50µg/m^3 not to be exceeded more than 35 times a year	24-hour mean
$PM_{2.5}$	UK (except Scotland)	Interim target 12µg/m^3 by 2028 Target of 22% reduction in population exposure by 2028 compare to 2018	Annual mean

2.1.7 For the pollutants considered in this assessment, there are both long-term (annual mean) and short-term standards. In the case of NO_2, the short-term standard is for a 1-hour averaging period, whereas for PM_{10} it is a 24-hour averaging period. These periods reflect the varying impacts on health of differing exposures to pollutants, for example temporary exposure on the pavement adjacent to a busy road compared with the exposure of residential properties adjacent to a road.

Air Quality Regulations (2016)

2.1.8 Many of the objectives in the AQS have been made statutory in England with the Air Quality (England) Regulations 2000[3] and the Air Quality (England) (Amendment) Regulations 2002[4] for the purpose of Local Air Quality Management (LAQM).

2.1.9 These Regulations require that likely exceedances of the AQS objectives are assessed in relation to:

> *[…] the quality of air at locations which are situated outside of buildings or other natural or man-made structures, above or below ground, and where members of the public are regularly present […]'*

2.1.10 The Air Quality Standards (Amendment) Regulations 2016[5] amends the Air Quality Standards Regulations 2010 that transpose the European Union Ambient Air Quality Directive (2008/50/EC) into law in England. This Directive sets legally binding limit values for concentrations in outdoor air of major air pollutants that impact public health such as PM_{10}, $PM_{2.5}$ and NO_2. The limit values for NO_2 and PM_{10} are the same concentration levels as the

[3] The Air Quality (England) Regulations 2000 – Statutory Instrument 2000 No.928.
[4] The Air Quality (England) (Amendment) Regulations 2002 – Statutory Instrument 2002 No.3043.
[5] The Air Quality Standards (Amendment) Regulations 2016 - Statutory Instrument 2016 No. 1184.

relevant AQS objectives and the limit value for $PM_{2.5}$ is an interim target of 12µg/m^3 to be achieved by 2028.

Environmental Protection Act 1990 – Control of Dust and Particles Associated with Construction

2.1.11 Section 79 of the Environmental Protection Act 1990[6] gives the following definitions of statutory nuisance relevant to dust and particles:

> *'Any dust, steam, smell or other effluvia arising from industrial, trade or business premises or smoke, fumes or gases emitted from premises so as to be prejudicial to health or a nuisance'; and*
>
> *'Any accumulation or deposit which is prejudicial to health or a nuisance'.*

2.1.12 Following this, Section 80 says that where a statutory nuisance is shown to exist, the local authority must serve an abatement notice. Failure to comply with an abatement notice is an offence and if necessary, the local authority may abate the nuisance and recover expenses.

2.1.13 There are no statutory limit values for dust deposition above which 'nuisance' is deemed to exist. Nuisance is a subjective concept, and its perception is highly dependent upon the existing conditions and the change which has occurred.

Environment Act 1995

2.1.14 Under Part IV of the Environment Act 1995[7], local authorities must review and document local air quality within their area by way of staged appraisals and respond accordingly, with the aim of meeting the air quality objectives defined in the Regulations. Where the objectives are not likely to be achieved, an authority is required to designate an Air Quality Management Area (AQMA). For each AQMA the local authority is required to draw up an Air Quality Action Plan (AQAP) to secure improvements in air quality and show how it intends to work towards achieving air quality standards in the future.

Environmental Improvement Plan 2023

2.1.15 The Environmental Improvement Plan 2023[8] sets out Defra's vision for a quarter-of-a century of action to help the natural world regain and retain good health. Air quality is one of these

[6] Environmental Protection Act. London 1990. HMSO.
[7] Environment Act 1995. London HMSO.
[8] Environmental Improvement Plan 2023 [Online] Available at Environmental Improvement Plan 2023: Executive summary - GOV.UK (www.gov.uk).

areas, with Defra tackling specific hotspots by challenging councils to improve air quality more quickly, while supporting them with clear guidance, funding, and tools.

Clean Air Strategy (2019)

2.1.16 In 2019, the UK government released its Clean Air Strategy 2019[9], part of its 25 Year Environment Plan[10]. The Strategy sets out the comprehensive action that is considered to be required from across all parts of government and society.

2.1.17 The primary focus of air quality management has primarily related to NO_2, and its principal source in the UK, road traffic. The 2019 Strategy aims to broaden the focus to other areas, including actions on clean growth, and emissions from domestic wood burning stoves, industry and agriculture.

2.2 Planning Policy

2.2.1 A summary of the national and local planning policy relevant to the Proposed Development and air quality is provided below.

National Planning Policy Framework (2023)

2.2.2 The Government's overall planning policies for England are described in the National Planning Policy Framework[11]. The core underpinning principle of the Framework is the presumption in favour of sustainable development, defined as:

> *'[…] meeting the needs of the present without compromising the ability of future generations to meet their own needs.'*

2.2.3 One of the three overarching objectives of the NPPF is that planning should 'contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.'

2.2.4 In relation to air quality, the following paragraphs in the document are relevant:

- Paragraph 55, which states 'Local planning authorities should consider whether otherwise unacceptable development could be made acceptable through the use of

[9] Department for Environment, Food and Rural Affairs (2019) Clean Air Strategy 2019.
[10] Department for Environment Food and Rural Affairs (Defra) (2018) A Green Future: Our 25 Year Plan to Improve the Environment.
[11] Ministry of Housing, Communities & Local Government (2023) National Planning Policy Framework.

conditions or planning obligations. Planning obligations should only be used where it is not possible to address unacceptable impacts through a planning condition.';

- Paragraph 105, which states '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.';
- Paragraph 174, which states 'Planning policies and decisions should contribute to and enhance the natural and local environment by: […] e) 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 such as river basin management plans.';
- Paragraph 185, which states '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.';
- Paragraph 186, which states '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 Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan.'; and
- Paragraph 188, which states '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'.

2.2.5 These were reviewed and the relevant guidance considered as necessary throughout the undertaking of the assessment.

Local Planning Policy

The Manchester Local Development Framework

2.2.6 The Manchester Local Development Framework consists of a series of planning documents of which the Core Strategy is central. This was adopted by MCC on 11th July 2012 and provides policies which guide the determination of planning applications within the city. Review of the document indicated the following policies of relevance to this assessment:

"Policy EN 16

Air Quality

The Council will seek to improve the air quality within Manchester, and particularly within Air Quality Management Areas, located along Manchester's principal traffic routes and at Manchester Airport. Developers will be expected to take measures to minimise and mitigate the local effect of emissions from traffic generated by the development, as well as emissions created by the use of the development itself, including from Combined Heat and Power and biomass plant.

When assessing the appropriateness of locations for new development the Council will consider the effects on air quality, alongside other plan objectives. This includes cumulative effects, particularly in Air Quality Management Areas."

"Policy DM 1

Development Management

All development should have regard to the following specific issues for which more detailed guidance may be given within a supplementary planning document:[…]

Effects on amenity, including privacy, light, noise, vibration, air quality, odours, litter, vermin, birds, road safety and traffic generation. This could also include proposals which would be sensitive to existing environmental conditions, such as noise."

Greater Manchester Air Quality Action Plan 2016-2021

2.2.7 The Greater Manchester Combined Authority (GMCA) - Air Quality Action Plan (AQAP)[12] has been produced as part of their statutory duties required by the Local Air Quality Management framework. It aims to collect a meaningful set of actions and measures that will create an improvement in air quality within their jurisdiction.

2.2.8 The ambition of improved air quality across Greater Manchester; Low-emission behaviours to become embedded in the culture of organisations and lifestyles by 2025; and their support towards the UK Government in meeting and maintaining all EU thresholds for key air pollutants at the earliest date to reduce ill-health within Greater Manchester.

2.2.9 Although this document spans the period 2016 – 2021, a new document is yet to be produced in its place but is currently being worked on. In December 2023, Greater Manchester's Air Quality Administration Committee agreed the latest Clean Air Proposals for submission to the government's Joint Air Quality Unit.

Greater Manchester Low-Emission Strategy (2016)

2.2.10 This Low-Emission Strategy[13] (LES) aims to complement Greater Manchester's Climate Change Strategy that focuses on carbon emissions and their AQAP tackling air pollutants. As both problems are largely interlinked, transport being the major source of air pollution and carbon emissions, a more integrated approach is required.

2.2.11 This LES is therefore establishing this integrated framework within which they develop detailed action plans to reduce carbon emissions and improve air quality up until 2024.

2.2.12 The aims of this strategy are:

"Support the UK Government in meeting all EU thresholds for key pollutants at the earliest date; Contribute to reducing Greater Manchester's carbon footprint, in line with the Greater Manchester Climate Change Strategy and Implementation Plan; and Reduce air pollution as a contributor to ill-health in Greater Manchester."

2.3 Guidance

2.3.1 A summary of the publications referred to in undertaking this assessment is provided below.

[12] Greater Manchester Combined Authority: Greater Manchester Air Quality Action Plan 2016-2021. Available at https://www.greatermanchester-ca.gov.uk/media/1272/air-quality-action-plan-2016-21.pdf [Accessed 19/03/2024]
[13] Greater Manchester Combined Authority: Greater Manchester Low-Emission Strategy (2016). Available at https://www.greatermanchester-ca.gov.uk/media/1276/low-emission-strategy-dec-2016.pdf [Accessed 19/03/2024].

Local Air Quality Management Review and Assessment Technical Guidance (2022)

2.3.2 The Department for Environment, Food and Rural Affairs (Defra) has published technical guidance for use by local authorities in their review and assessment work[14]. The guidance was updated in August 2022, following the enactment of measures in the Environment Act 2021 which aim to enhance the LAQM framework to enable greater localised action on air pollution. Referred to herein as LAQM.TG22, the updated guidance has been used where appropriate in the following assessment.

Land-Use Planning & Development Control: Planning for Air Quality (2017)

2.3.3 Environmental Protection UK (EPUK) and the Institute of Air Quality Management (IAQM) have published guidance[15] that offers comprehensive advice on: when an air quality assessment may be required; what should be included in an assessment; how to determine the significance of any air quality impacts associated with a development; and, the possible mitigation measures that may be implemented to minimise these impacts.

Guidance on the Assessment of Dust from Demolition and Construction (2024)

2.3.4 This document[16], originally published by the IAQM in 2014, but updated this year, was produced to provide guidance to developers, consultants and environmental health officers on how to assess the impacts arising from construction activities. The emphasis of the methodology is on classifying sites according to the risk of impacts (in terms of dust nuisance, PM_{10} and $PM_{2.5}$ impacts on public exposure and impact upon sensitive ecological receptors) and to identify mitigation measures appropriate to the level of risk identified.

National Planning Practice Guidance – Air Quality (2019)

2.3.5 This guidance[17] provides a number of guiding principles on how the planning process can take into account the impact of new development on air quality, it explains how much detail air quality assessments need to include for proposed developments, and how impacts on air quality can be mitigated. It also provides information on how air quality is taken into account

[14] Department for Environment, Food and Rural Affairs (Defra) (2021) Part IV The Environment Act 1995 as amended by the Environment Act 2021 Environment (Northern Ireland) Order 2002 Part III, Local Air Quality Management Technical Guidance LAQM.TG22.
[15] Environmental Protection UK and Institute of Air Quality Management (Version 1.2 Updated January 2017) Land Use Planning & Development Control: Planning for Air Quality.
[16] Institute of Air Quality Management (Version 2.2 Updated January 2024) Guidance on the Assessment of Dust from Demolition and Construction.
[17] Department of Communities and Local Government (DCLG) (Updated November 2019) National Planning Practice Guidance.

by local authorities in both the wider planning context of Local Plans and neighbourhood planning, and in individual cases where air quality is a consideration in a planning decision.

3 SCOPE AND METHODOLOGY

3.1 Scope

3.1.1 The scope of the assessment has been determined in the following way:

- A review of the proposed plans of the Proposed Development;
- Desktop study to confirm the locations of nearby existing receptors that may be sensitive to changes in local air quality; and
- Review of GMCA's latest available Air Quality Annual Status Report[18] (ASR) and air quality data surrounding the Site including data from the Environment Agency (EA)[19];

3.1.2 The scope of the assessment includes consideration of the potential impact on local air quality resulting from:

- Dust and particle matter generated by on-site activities during the construction phase;
- Increases in pollutant concentrations as a result of exhaust emissions arising from construction traffic and plant; and
- Increases in pollutant concentrations as a result of exhaust emissions arising from traffic generated by the Proposed Development once operational.

3.2 Construction Phase Assessment

3.2.1 Dust comprises particles typically in the size range of 1-75 micrometres (µm) in aerodynamic diameter and is created through the action of crushing and abrasive forces on materials. The larger dust particles fall out of the atmosphere quickly after initial release and therefore tend to be deposited in close proximity to the source of emission. Dust therefore is unlikely to cause long term or wide-spread changes to air quality; however, it's deposition on property and cars can cause 'soiling' and discolouration. This may result in complaints of nuisance through amenity loss or perceived damage caused, which is usually temporary.

3.2.2 The smaller particles of dust are known as particulate matter (PM), with less than 10 µm in aerodynamic diameter (PM_{10}) representing only a small proportion of total dust released; this includes a finer fraction, known as $PM_{2.5}$ (with an aerodynamic diameter less than 2.5µm). As these particles are at the smaller end of the size range of dust particles, they remain suspended in the atmosphere for a longer period of time than the larger dust particles, they

[18] Greater Manchester Combined Authority (2023) 2022 Air Quality Annual Status Report. [Online] Available at https://assets.ctfassets.net/tlpgbvy1k6h2/3eJDZpHcCKNK0ZO7TcUkI/3363e762b28868a832ab2200286a4841/Greater_Manchester_Air_Quality_Annual_Status_Report_2022.pdf [Accessed 19/03/2024].
[19] Department for Environment, Food and Rural Affairs (Defra, 2023) Pollution Inventory [Online] Available at https://data.gov.uk/dataset/cfd94301-a2f2-48a2-9915-e477ca6d8b7e/pollution-inventory [Accessed 19/03/2024].

can therefore be transported by wind over a wider area. PM_{10} and $PM_{2.5}$ are small enough to be drawn into the lungs during breathing, which in sensitive members of the public could have a potential impact on health. However, it is worth noting that, according to the IAQM guidance, the majority of fugitive particulate emissions arising from construction sites are expected to relate to the coarser fractions (i.e. $PM_{2.5-10}$) with just 10-15% expected to comprise $PM_{2.5}$. The IAQM guidance therefore focusses on PM_{10} for the purposes of assessment.

3.2.3 An assessment of the likely significant impacts on local air quality due to the generation and dispersion of dust and PM_{10} during the construction phase has been undertaken using: the relevant assessment methodology published by the IAQM; the available information for this phase of the Proposed Development provided by the Client and/or Project Team; and, the professional judgement of the NoiseAir team.

3.2.4 The IAQM methodology assesses the risk of potential dust and PM_{10} impacts from the following four sources: demolition, earthworks, construction and trackout. It takes into account the nature and scale of the activities undertaken for each source and the sensitivity of the area to an increase in PM_{10} levels to assign a level of risk. Risks are described in terms of there being a low, medium or high risk of dust impacts. Once the level of risk has been identified, and the significance of residual effects determined. A summary of the IAQM assessment methodology is provided in **Appendix C**.

3.2.5 In addition to the impacts on local air quality due to on-site construction activities, exhaust emissions from construction vehicles and plant may have an impact on local air quality adjacent to the routes used by these vehicles to access the application Site and in the vicinity of the application Site itself. As information on the number of vehicles and plant associated with the construction phase was not available at the time of writing, a qualitative assessment of their impact on local air quality has been undertaken using professional judgement and considering the following:

- The number and type of construction traffic and plant likely to be generated by this phase of the development;
- The number and proximity of sensitive receptors to the application Site and along the likely routes to be used by construction vehicles; and
- The likely duration of the construction phase and the nature of the construction activities undertaken.

3.3 Operational Phase Assessment

3.3.1 The Proposed Development has the potential to expose future residents to any existing air quality issues.

3.3.2 The EPUK & IAQM guidance sets out two stages for determining when an assessment of potential impacts on the local area is likely to be necessary. The Stage 1 criteria for an air quality assessment is presented below:

A. If any of the following apply:

- 10 or more residential units or a site area of more than 0.5ha; or
- More than 1,000m^2 of floor space for all other uses or a site greater than 1ha.

B. Coupled with any of the following:

- The development has more than 10 parking spaces; or
- The development will have a centralised energy facility of other centralised combustion processes.

3.3.3 Should these criteria not be met, then the EPUK and IAQM guidance considers air quality impacts associated with a scheme to be negligible and no further assessment is required. Should the criteria be met or exceeded, proceed to Stage 2. Stage 2 of the EPUK & IAQM guidance document states the following criteria to help establish when an air quality assessment is likely to be considered necessary:

- Proposals that will cause a change in Light Duty Vehicle (LDV) flows of more than 100 AADT within or adjacent to an AQMA or more than 500 elsewhere.
- Proposals that will cause a change in HDV flows of more than 25 AADT within or adjacent to an AQMA or more than 100 elsewhere.
- Proposals that would realign roads within an AQMA by more than 5m;
- Proposals that will introduce new junctions or remove existing junctions near relevant receptors.
- Proposals that will introduce or change a bus station or change flows of buses by more than 25 AADT within an AQMA or more than 100 AADT elsewhere.
- Proposals which will include an underground car park with extraction system which will be within 20m of a relevant receptor and have more than 100 movements per day.
- Proposals which include either a centralised plant using biofuel, a combustion plant with single or thermal input >300KWh or a standby emergency generator associated with a centralised energy centre; and,

- Proposals which include combustion processes of any size.

3.3.4 Should these criteria not be met, then the EPUK and IAQM guidance documents consider air quality impacts associated with a scheme to be not significant and no further assessment being required.

3.3.5 Should screening of the traffic data indicate that any of the above criteria are met, then potential impacts at sensitive receptor locations can be assessed by calculating the predicted change in pollutant concentrations as a result of the Proposed Development.

3.3.6 The significance of predicted impacts can then be determined in accordance with the methodology.

3.4 Selection of Background Concentrations

3.4.1 Background pollutant data for the operational phase assessment have been taken from the national maps provided on the Defra website, where background concentrations of those pollutants included within the AQS have been mapped at a grid resolution of 1x1 km for the whole of the UK. Estimated background concentrations are available for all years between 2018 and 2030. The maps assume that background concentrations will improve (i.e., reduce) overtime, in line with the predicted reduction in vehicle emissions, and emissions from other sources.

3.5 Selection of Sensitive Receptors

3.5.1 Sensitive locations are places where the public or sensitive ecological habitats may be exposed to pollutants resulting from activities associated with the Proposed Development. These will include locations sensitive to an increase in dust deposition and PM_{10} exposure as a result of on-site construction activities, and locations sensitive to exposure to gaseous pollutants emitted from the exhausts of construction and operational traffic associated with the Proposed Development.

Construction Phase

3.5.2 The IAQM assessment is undertaken where there are:

- 'human receptors' within 350 m of the site boundary, all within 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the site entrance(s); and/or
- 'ecological receptors' within 50 m of the site boundary, or within 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the site entrance(s).

3.5.3 It is within these distances that the impacts of dust soiling and increased particulate matter in the ambient air will have the greatest impact on local air quality at sensitive receptors.

3.6 Significance Criteria

Construction Phase

3.6.1 The IAQM assessment methodology recommends that significance criteria are only assigned to the identified risk of dust impacts occurring from a construction activity with appropriate mitigation measures in place. For almost all construction activities, the application of effective mitigation should prevent any significant effects occurring to sensitive receptors and therefore the residual effect will normally be negligible.

3.6.2 For the assessment of the impact of exhaust emissions from plant used on-site and construction vehicles accessing and leaving the Site on local concentrations of NO_2 and particulate matter; the significance of residual effects has been determined using professional judgement and the principles outlined in the EPUK & IAQM guidance, which are described below.

Operational Phase

3.6.3 The approach provided in the EPUK & IAQM guidance has been used within this assessment to assist in describing the air quality effects of additional emissions from traffic generated by the Proposed Development once operational.

Future Exposure

3.6.4 The Proposed Development has the potential to expose future users of the Site to poor air quality. Pollutant concentrations at the Site have been considered qualitatively in this assessment.

4 BASELINE

4.1 Introduction

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

4.2 Local Air Quality Management

4.2.1 As required by the Environment Act (1995), GMCA has undertaken Review and Assessment of air quality within their area of jurisdiction. This process has indicated that annual mean concentrations of NO_2 can be above the AQO close to busy roads around Greater Manchester. As such, a number of roads within Manchester have been included within the GMCA AQMA.

4.2.2 The Site is located within 200m of this AQMA.

4.3 Air Quality Monitoring

4.3.1 Monitoring of pollutant concentrations is undertaken by GMCA throughout their area of jurisdiction. Recent diffusion tube monitoring within 750m of the Site is shown in **Table 2**.

Table 2: Diffusion tube monitoring Results – NO_2

Monitoring Site Name	Site Type	Distance to Kerb of Nearest Road (m)	Monitored NO_2 Concentration (µg/m³)	
			2021	2022
MA113NO	Roadside	2	28.1	29.2

Results rounded to 1 d.p.

4.3.2 As **Table 2** shows there have been no monitored exceedances of the objective in the area since the monitor became operational in 2021. Whilst only marginally higher, the data from 2022 only should be considered representative of new normal conditions following the COVID-19 pandemic lockdowns.

4.3.3 This monitoring location is located within the GMCA AQMA. Given the Site is situated outside the AQMA, it is reasonable to argue that pollutant concentrations would be lower at this location.

4.4 Background Pollutant Concentrations

4.4.1 Predictions of background pollutant concentrations on a 1 km-by-1 km basis have been produced by DEFRA for the entire of the UK to assist local authorities in their review and assessment of air quality. The proposed site is located in grid square 385500, 396500. Data for this location was downloaded from the DEFRA website[20] and is summarised in **Table 3**.

Table 3: Predicted Background Pollutant Concentrations

OS Grid Reference (X, Y; m)	Predicted Background Pollutant Concentration (µg/m³)					
	2022			2025		
	NO_2	PM_{10}	$PM_{2.5}$	NO_2	PM_{10}	$PM_{2.5}$
385500, 396500	18.5	12.4	8.2	16.8	12.0	8.0
Rounded to 1 d.p.						

4.4.2 As shown in **Table 3**, predicted background NO_2, PM_{10} and $PM_{2.5}$ concentrations are well below the relevant AQOs across the assessment extents.

[20] Department for Environment, Food and Rural Affairs (Defra) (2022) Background Concentrations [Online] Available at https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2018 [Accessed on 19/03/2024].

5 ASSESSMENT

5.1 Introduction

5.1.1 There is the potential for air quality impacts as a result of the construction and operation of the Proposed Development. These are assessed in the following sections.

5.2 Construction Phase Assessment

5.2.1 Construction activities have the potential to generate and/ or re- suspend dust and PM_{10} sources include:

- Site clearance and preparation including demolition activities;
- Preparation of temporary access/ egress to the Site and haulage routes;
- Earthworks;
- Materials handling, storage, stockpiling, spillage and disposal;
- Movement of vehicles and construction traffic within the Site (including excavators and dumper trucks);
- Use of crushing and screening equipment/ plant;
- Exhaust emissions from plant, especially when used at the extremes of their capacity and during mechanical breakdown;
- Construction of buildings, roads and areas of hard standing alongside fabrication processes;
- Internal and external finishing and refurbishment;
- Trackout, whereby earth is carried from the Site on vehicle tyres, deposited on roads and may later become suspended in the air as a result of vehicle movements; and
- Site landscaping after completion.

5.2.2 The majority of the releases are likely to occur during the 'working week'. However, for some potential release sources (e.g., exposed soil produced from significant earthworks activities) in the absence of dust control mitigation measures, dust generation has the potential to occur 24 hours per day over the period during which such activities are to take place.

Assessment of Potential Dust Emission Magnitude

5.2.3 The IAQM assessment methodology has been used to determine the potential dust emission magnitude for the following four different dust and PM_{10} sources:

- Demolition;
- Earthworks;

- Construction; and
- Trackout.

5.2.4 The findings of the assessment are presented below.

Demolition

5.2.5 The small existing building is to be demolished, and will be less than 12,000m^3. As such, the potential dust emission magnitude is therefore considered to be **small** for demolition activities and has not been considered further in this report.

Earthworks

5.2.6 The total Site area is under 1,500m^2. As such, the potential dust emission magnitude is therefore considered to be **small** for the earthworks stage and has not been considered further in this report.

Construction

5.2.7 As the proposals are for a small PBSA, the total building volume is not anticipated to be over 12,000m^3. Therefore, the potential dust emission magnitude is considered to be **small** for construction activities.

Trackout

5.2.8 Information on the number of HDVs associated with this phase of the Proposed Development is not available and therefore professional judgement has been used. It has been assumed that given the size of the Proposed Development area there are likely to be far fewer than 20 HDV outward movements in any one day. Therefore, it is considered that the potential dust emission magnitude is **small** for trackout.

5.2.9 **Table 4** provides a summary of the potential dust emission magnitude determined for each construction activity considered.

Table 4: Potential Dust Emission Magnitude	
Activity	**Dust Emission Magnitude**
Demolition	Small
Earthworks	Small
Construction Activities	Small
Trackout	Small

Assessment of Sensitivity of the Study Area

5.2.10 The prevailing wind direction is predominantly from the south-west. Therefore, receptors located to the north-east of the Site are more likely to be affected by dust and particulate matter emitted and re- suspended during the construction phase.

5.2.11 Under lower wind speed conditions, it is likely that the majority of dust would be deposited in the area immediately surrounding the source. Receptors north-east of the Site are expected to be affected the most as a result of the prevailing wind direction. It has been assumed that construction traffic will access the Site from Hyde Grove Given the size of the Site and the scale of the proposals, very few construction vehicles are expected to be required.

5.2.12 There are no ecological receptors within 50 m of the Site boundary or access route, or within 200m of the Site entrance as identified using Multi Agency Geographic Information for the Countryside (MAGIC) website[21]. As such, ecological impacts have not been assessed further within this report. The closest ecological receptor, is the Clayton Vale Local Nature Reserve, is approximately 3.5km northeast of the Site.

5.2.13 Taking the above into account and following the IAQM assessment methodology, the sensitivity of the area to changes in dust and PM_{10} has been derived for each of the construction activities considered. The results are shown in **Table 5**.

Table 5: Sensitivity of the Study Area				
Potential Impact	**Sensitivity of the Surrounding Area**			
	Demolition	**Earthworks**	**Construction**	**Trackout**
Dust Soiling	High	High	High	High
Human Health	Low	Low	Low	Low

[21] Department for Environment, Food and Rural Affairs (Defra) (2022) Multi-Agency Geographic Information for the Countryside (MAGIC) [Online] https://magic.defra.gov.uk/ [Accessed on 19/03/2024].

Risk of Impacts

5.2.14 The predicted dust emission magnitude has been combined with the defined sensitivity of the area to determine the risk of impacts during the construction phase, prior to mitigation **Table 6** below provides a summary of the risk of just impacts for the Proposed Development. The risk category identified for each construction activity has been used to determine the level of mitigation required.

Table 6: Summary Dust Risk Table Defining Site Specific Mitigation

Potential Impact	Sensitivity of the Surrounding Area			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	Low	Low	Low	Low
Human Health	Negligible	Negligible	Negligible	Negligible

Construction Vehicles and Plant

5.2.15 The greatest impact on air quality is emissions from vehicles and plant associated with the construction phase will be in the areas immediately adjacent to the Site access road. Due to the size of the Site, it is considered likely that any construction traffic will be very low in comparison to the existing traffic flows on these roads.

5.2.16 Final details of the exact plant and equipment likely to be used on-site will be determined by the appointed contractor. The number of plant and their location within the Site are likely to be variable over the construction. This is likely to be small in size and number given the size of the Site.

5.2.17 Based on the current local air quality in the area, the proximity of sensitive receptors to the roads likely to be used by construction vehicles, and the likely numbers of construction vehicles and plant that will be used the impacts are therefore considered to being **negligible** according to the assessment significance criteria.

5.3 Operational Phase Assessment

5.3.1 Vehicle movements associated with the operation of the proposal will generate exhaust emissions on the local and regional road networks.

5.3.2 A screening assessment has been conducted based on the Stage 1 EPUK and IAQM criteria. As the Proposed Development does not meet Stage 1 criteria, the EPUK and IAQM guidance considers air quality impacts associated with a scheme to be negligible and no further assessment is required.

Potential Future Exposure

5.3.3 The Proposed Development includes land use sensitive to long term and short-term pollutant concentrations. Existing conditions at the Site are therefore considered in the following Sections.

Location

5.3.4 The Proposed Development, whilst situated within 200m of the existing AQMA is outside it. Therefore, it is expected that concentrations would be below the objective at the Site.

5.3.5 It should also be noted that the GMCA AQMA is based on an advisory, precautionary NO_2 limit of 35µg/m^3, as opposed to the AQO of 40µg/m^3, and so areas within the AQMA can be below the AQO for NO_2.

Local Monitoring Results

5.3.6 The local monitoring location within 750m of the Site, has been below the AQO since at least 2021, when monitoring commenced. This monitor is located closer to a busy road than the Site and so the concentrations at the Site can reasonably be expected to be lower.

Background Pollutant Concentrations

5.3.7 As shown in **Table 3** background pollutant concentrations for the grid square containing the Site are predicted to be well below the annual mean AQOs for NO_2, PM_{10}, and $PM_{2.5}$ in 2022 and the anticipated opening year (2025).

5.3.8 Based on the predicted background concentrations, exceedances of the relevant AQOs are considered unlikely at the Site.

Summary

5.3.9 It is considered likely that pollutant concentrations are below the relevant AQO's at the Proposed Development for the following reasons:

- The Proposed Development, is situated outside the AQMA.
- Monitoring within 750m of the Site, which is adjacent to a major road have been monitoring concentrations below the AQO since at least 2021; and,
- Predicted background concentrations of NO_2, PM_{10}, and $PM_{2.5}$ are well below the relevant AQOs in 2022 and the predicted opening year of 2025.

6 MITIGATION AND RESIDUAL EFFECTS

6.1 Construction Phase

6.1.1 Based on the construction phase assessment results, mitigation will be required for this phase. Recommended mitigation measures for a Site with "Low" dust risk are presented below:

Communications:

- 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.

Site Management

- 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 LA upon request.
- Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the logbook.

Monitoring

- Carry out regular site inspections, record inspection results, and make an inspection log available to the LA upon request.
- Increase the frequency of site inspections when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.
- Agree dust deposition, dust flux, or real-time PM_{10} continuous monitoring locations with the Local Authority. Where possible commence baseline monitoring at least three months before work commences on site or, if it a large site, before work on a phase commences. Further guidance is provided by IAQM on monitoring during demolition, earthworks and construction.

Site Preparation

- 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.

- Avoid site runoff of water or mud.

Operating/Vehicle Machinery and Sustainable Travel

- Ensure all vehicles switch off engines when stationary - no idling vehicles.
- Avoid the use of diesel or petrol powered generators where possible and use mains electricity or battery powered equipment where practicable.

Operations

- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques.
- Ensure an adequate water supply on the site for effective dust suppression, using non-potable water where possible and appropriate.
- Use enclosed chutes and conveyors and covered skips.
- Minimise drop heights and use fine water sprays wherever appropriate.

Waste Management

- No bonfires or burning of waste materials.

Demolition

- Ensure effective water suppression is used during demolition operations.
- Avoid explosive blasting, using appropriate manual or mechanical alternatives.
- Bag and remove any biological debris or damp down such material before demolition.

Construction

- 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.

6.1.2 Detailed mitigation measures to control construction traffic should be discussed with the Local Authority to establish the most suitable access and haul routes for the site traffic. The most effective mitigation will be achieved by ensuring that construction traffic does not pass along sensitive roads (i.e., congested roads, residential roads or unsuitable junctions for large vehicles) where possible. Construction vehicles should be kept clean through the use of wheel washers and sheeted when on public highways. Timing of large- scale vehicle movements to avoid peak hours on the local road network would also be of benefit.

6.2 Residual Effects

Construction Phase

6.2.1 The residual effects of dust and PM_{10} generated by construction activities following the application of the mitigation measures described above and good Site practise is considered to be **not significant**.

6.2.2 The residual effects of emissions to air from construction vehicles and plant on local air quality is considered to be **not significant**.

Operational Phase

6.2.3 The changes in pollution concentrations attributable to traffic emissions associated with the operational phase of the proposed development (i.e., impacts on local air quality) are **negligible** and therefore, in accordance with the assessment criteria, mitigation is not required. Additionally, pollutant concentrations at the Site are predicted to be below the relevant AQOs and as such additional mitigation is not required during the operational phase.

Residual Effects

6.2.4 Based on the extent of predicted population exposure to the impacts on pollutant concentrations and the guidance provided by the IAQM, the Proposed Development is expected to result in an overall **negligible** impact associated with the operational phase traffic on nearby receptors, with the overall effect considered to be **not significant**.

6.2.5 Predicted concentrations of all pollutants considered are below the relevant objectives without the risk of exceedance at proposed residential receptor locations within the Site boundary.

6.2.6 The residual effects of the Proposed Development on air quality are not significant for NO_2, PM_{10} or $PM_{2.5}$, according to the EPUK & IAQM assessment criteria.

6.2.7 The residual effect of air quality on future occupiers of the Proposed Development is also judged to be **not significant**.

7 SUMMARY AND CONCLUSIONS

7.1.1 NoiseAir Limited was commissioned to undertake this AQA in support of planning application proposing the change of use of the current Renshaw House, Hyde Grove, Hyde, Manchester M13 9LQ to Purpose Built Student Accommodation.

7.1.2 A qualitative assessment of the potential impacts on local air quality from construction activities has been carried out for this phase of the Proposed Development using the IAQM methodology. This identified that there is a **Low** risk of dust soiling impacts and a **Negligible** risk of increases in particulate matter concentrations due to unmitigated construction activities. However, through good site practice and the implementation of suitable mitigation measures, the effect of dust and particulate matter releases would be significantly reduced. The residual effects of dust and particulate matter generated by construction activities on air quality are therefore considered to be **not significant**. The residual effects of emissions to air from construction vehicles and plant on local air quality is considered to be **not significant**.

7.1.3 Based on the extent of predicted population to the impacts on pollutant concentrations and the guidance provided by the IAQM, the Proposed Development is expected to result in a **negligible** impact associated with the operational phase traffic on nearby receptors and the residual effects are considered to be **not significant**.

7.1.4 Potential for future residents of the Proposed Development to be exposed to poor air quality has been considered. The Site lies within an area where air quality is mainly influenced by emissions associated with road traffic along the existing road network. Pollutants considered in this assessment were NO_2, PM_{10} and $PM_{2.5}$.

7.1.5 Although the Site is within 200m of the GMCA AQMA, it is set back form a major road source and roadside monitors within 750m of the Site which are adjacent to the kerb have recorded concentrations below the AQO since at least 2021.

7.1.6 The results of the qualitative study indicate that concentrations at the Site boundary meet the relevant air quality objectives for NO_2, PM_{10} and $PM_{2.5}$ for a number of reasons outlined above. The residual effect of air quality on future occupiers of the Proposed Development is judged to be **not significant**.

7.1.7 Based on the assessment significance criteria, the residual effect of the Proposed Development is considered to be **not significant** for all pollutants considered.

7.1.8 Furthermore, it is considered that the Proposed Development complies with national and local policy for air quality.

7.1.9 Based on the assessment results, air quality issues are not considered a constraint to planning consent for this proposal.

FIGURES

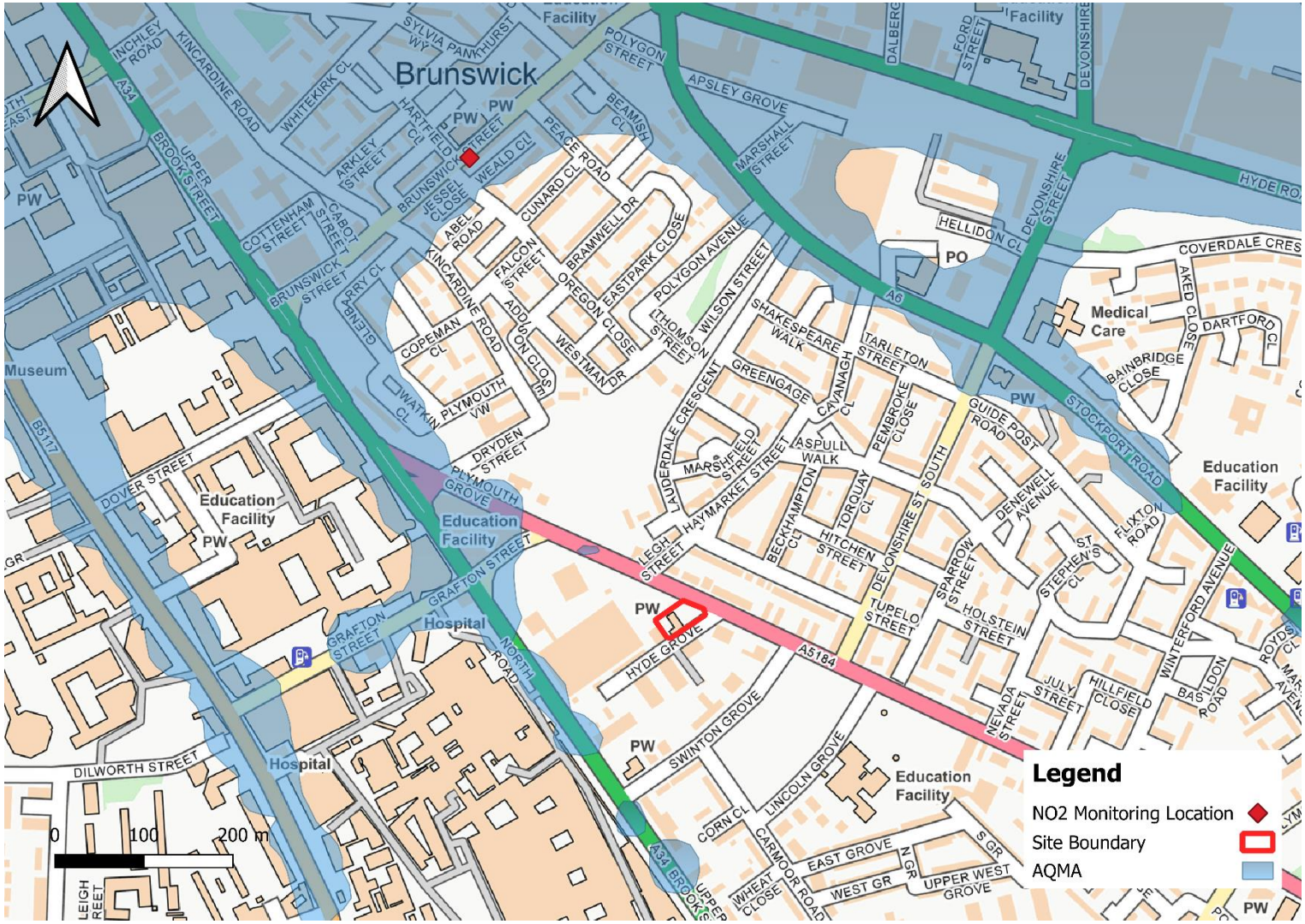

Figure 1 Site Location

APPENDIX A – REPORT LIMITATIONS

This Report is presented to Mia James Construction & Interiors Ltd and may not be used or relied on by any other person or by the client in relation to any other matters not covered specifically by the scope of this report.

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APPENDIX B – GLOSSARY

AADT Annual Average Daily Traffic	A daily total traffic flow (24hrs), expressed as mean daily floor across all 365 days of the year.
Adjustment	Application of a correction factor to modelled results to account for uncertainties in the model.
Accuracy	A measure of how well a set of data fits the true value.
Air quality objective	Policy target generally expressed as a maximum ambient concentration to be achieved, either without exception or with the permitted number of exceedances within a specific time scale (see also air quality standard).
Ambient air	Outdoor air in the troposphere, excluding workplace air.
Annual mean	the average (mean) of the concentrations measured for each pollutant for one year.
AQMA	Air Quality Management Area.
AQO	Air Quality Objective.
AURN	Automatic Urban And Rural (air quality) Network, managed by contractors on behalf of Defra.
Conservative	Trending to over predict the impact rather than under predict.
Data Capture	The percentage of all the possible measurements forgiven periods that were validly measured.
Defra	Department for Environment, Food and Rural Affairs.
DfT	Department for Transport
EFT	Emission Factor Toolkit
Emission rate	The quantity of a pollutant released from a source over a given period of time.
EPUK	Environmental Protection (UK)
Exceedance	A period of time where the concentration of a pollutant is greater than the appropriate air quality standard.

HDV/HGV	Heavy Duty Vehicle/Heavy Goods Vehicle.
IAQM	Institute of Air Quality Management.
LAQM	Local Air Quality Management.
Model adjustment	Following model verification, the process by which modelled results are amended. This corrects for systematic error.
NO_2	Nitrogen dioxide.
NO_X	Nitrogen oxides.
PM_{10}	Particulate matter with an aerodynamic diameter of less than 10 micrometres.
Road link	A length of road which is considered to have the same flow of traffic along it. Usually, a link is the road from one junction to the next
µg/m³ micrograms per cubic metre	A measure of concentration in terms of mass per unit volume. A concentration of 1µg/m³ means that one cubic metre of air contains one microgram (millionth of a gram) of a pollutant.

APPENDIX C – IAQM CONSTRUCTION DUST ASSESSMENT METHODOLOGY

IAQM Construction Dust Assessment Methodology

Step 1 – Screening the Need for a Detailed Assessment

An assessment will normally be required where there are:

- 'human receptors' within 350m of the site boundary; all within 50m of the route(s) used by construction vehicles on the public highway, up to 500m from the site entrance(s); and/ or
- 'ecological receptors' within 50m of the site boundary; or within 50m of the route(s) used by construction vehicles on the public highway up to 500m from the site entrance(s)

Where the need for more detail assessment is screened out, it can be concluded that the level of risk is 'negligible'.

Step 2a – Define the Potential Dust Emission Magnitude

The following are examples of how the potential dust emission magnitude for different activities can be defined. Note that not all criteria need to be met for a particular class. Other criteria can be justified within the assessment.

Table C1: Construction Dust - Magnitude of Emission

Magnitude	Activity	Criteria
Large	Demolition	- Total volume of building to be demolished greater than 75,000 m^3. - Potentially dusty material (e.g., concrete). - On-site crushing and screening. - Demolition activities more than 12m above ground level.
	Earthworks	- Total site area greater than 110,000m^2. - Potentially dusty soil type (e.g., clay, which will be prone to suspension when dry due to small particle size). - More than 10 heavy earth moving vehicles active at any one time. - Formation of bunds greater than 6m in height.
	Construction	- Total building volume greater than 75,000 m^3. - On site concrete batching. - Sandblasting.
	Trackout	- More than 50 Heavy Duty Vehicle (HDV) outward movements in any one day.

Table C1: Construction Dust - Magnitude of Emission		
Magnitude	**Activity**	**Criteria**
		- Potentially dusty surface material (e.g., high clay content). - Unpaved road length greater than 100m.
Medium	Demolition	- Total volume of building to be demolished between 12,000 m^3 and 75,000 m^3. - Potentially dusty construction material. - Demolition activities 6m to 12m above ground level.
	Earthworks	- Total site area 18,000m^2 to 110,000 m^2. - Moderately dusty soil type (e.g., silt). - 5 to 10 heavy earth moving vehicles active at any one time. - Formation of bunds 3m to 6m in height.
	Construction	- Total building volume 12,000m^3 to 75,000m^3. - Potentially dusty construction material (e.g., concrete). - On site concrete batching.
	Trackout	- 20 to 50 HDV trips per day. - Moderately dusty surface material (e.g., high clay content). - Unpaved road length 50m to 100m.
Small	Demolition	- Total volume of building to be demolished less than 12,000 m^3. - Construction material with low potential for dust release (e.g., metal cladding or timber). - Demolition activities less than 6m above ground and during wetter months.
	Earthworks	- Total site area less than 18,000 m^2. - Soil type with large grain size (e.g., sand). - Less than 5 heavy earth moving vehicles active at any one time. - Formation of bunds less than 3m in height.
	Construction	- Total building volume less than 12,000 m^3. - Construction material with low potential for dust release (e.g., metal cladding or timber).
	Trackout	- Less than 20 HDV trips per day.

Table C1: Construction Dust - Magnitude of Emission		
Magnitude	**Activity**	**Criteria**
		- Surface material with low potential for dust release. - Unpaved road length less than 50 m.

Step 2b – Define the Sensitivity of the Area

The tables below present the IAQM assessment methodology to determine the sensitivity of the area to soiling, human health and ecological impacts respectively. The IAQM guidance provides guidance to allow sensitivity of individual receptors 2 to soiling and health effects to assist in the assessment of the overall sensitivity of the study area.

Table C2: Sensitivity of the Area to Dust Soiling Effects					
Receptor Sensitivity	**Number of Receptors**	**Distance from the Source (m)**			
		<20	**<50**	**<100**	**<350**
High	>100	High	High	Medium	Low
	10-100	High	Medium	Low	Low
	1-10	Medium	Low	Low	Low
Medium	>1	Medium	Low	Low	Low
Low	>1	Low	Low	Low	Low

Table C3: Sensitivity of the Area to Dust Soiling Effects							
Receptor Sensitivity	**Annual Mean PM_{10} Concentrations ($\mu g/m^3$)**	**Number of Receptors**	**Distance from the Source (m)**				
			<20	**<50**	**<100**	**<200**	**<350**
High	>32	>100	High	High	High	Medium	Low
		10-100	High	High	Medium	Low	Low
		1-10	High	Medium	Low	Low	Low
	28-32	>100	High	High	Medium	Low	Low
		10-100	High	Medium	Low	Low	Low
		1-10	High	Medium	Low	Low	Low
	24-28	>100	High	Medium	Low	Low	Low
		10-100	High	Medium	Low	Low	Low
		1-10	Medium	Low	Low	Low	Low
	<24	>100	Medium	Low	Low	Low	Low
		10-100	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
Medium	>32	>10	High	Medium	Low	Low	Low
		1-10	Medium	Low	Low	Low	Low
	28-32	>10	Medium	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
	<24	>10	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
Low	-	>1	Low	Low	Low	Low	Low

Table C4: Sensitivity of the Area to Ecological Impacts		
Receptor Sensitivity	Distance from the Source (m)	
	<20	<50
High	High	Medium
Medium	Medium	Low
Low	Low	Low

Step 2c – Define the Risk of Impacts

The dust emissions magnitude determined in Step 2A should be combined with the sensitivity of the area determined at Step 2B to determine the risk of impacts without mitigation applied. For those cases where the risk category is 'negligible' no mitigation measures beyond those required by legislation will be required.

Table C5: Risk of Dust Impacts			
Sensitivity of Surrounding	Dust Emission Magnitude		
	Large	Medium	Small
Demolition			
High	High Risk	Medium Risk	Medium Risk
Medium	High Risk	Medium Risk	Low Risk
Low	Medium Risk	Low Risk	Negligible
Earthworks and Construction			
High	High Risk	Medium Risk	Medium Risk
Medium	High Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible
Trackout			
High	High Risk	Medium Risk	Low Risk
Medium	High Risk	Low Risk	Negligible
Low	Low Risk	Low Risk	Negligible

Step 3 – Site Specific Mitigation

Having determined the risk categories for each of the four activities it is possible to determine the site- specific measures to be adopted. These measures will be related to whether the site is considered to be a low, medium or high risk Site. The IAQM guidance details the mitigation measures required for low, medium and high risk sites as determined in Step 2C.

Step 4 – Determine Significant Effects

Once the risk of dust impacts has been determined in Step 2C under the appropriate dust mitigation measures identified in Step 3, the final step is to determine whether there are significant effects arising from the construction phase. For almost all construction activities, the application of effective mitigation should prevent any significant effects occurring at sensitive receptors, the residual effects will normally be negligible.

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