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HEALEY ISLAMIC TRUST

AIR QUALITY ASSESSMENT

HEALEY MILLS COMPLEX, HEALEY LANE, HEALEY, BATLEY WF17 7SH

Client: Healey Islamic Trust

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REPORT VERSION CONTROL:

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1 INTRODUCTION

1.1.1 By instruction from Healey Islamic Trust, NoiseAir Limited was commissioned to undertake an Air Quality Assessment (AQA) in support of a planning application for a new mosque and madrasa at Healey Mills Complex, Healey Lane, Healey, Batley WF17 7SH, herein referred to as the Site.

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

1.2 Site Location and Context

1.2.1 The Site is located at Healey Mills Complex, Healey Mills Lane, Healey, Batley WF17 7SH, at approximate National Grid Reference (NGR): 423310, 424050. **Figure 1** details the location of the Proposed Development.

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, 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 substantial combustion sources identified within the immediate vicinity of the Site that will influence local air quality.

1.2.4 The Proposed Development is situated within the administrative area of Kirklees Council (KC), to the south of Batley Town Centre. The Site is positioned to the south of Healey Lane. It is surrounded by light commercial premises and residential dwellings.

1.2.5 The proposals comprise a commercial development, for the construction of a new mosque and madrasa. The proposals comprise the demolition and change of use of workshops to ancillary buildings at the Site.

1.2.6 KC has requested an AQA for the Proposed Development Stating:

> *"This development has been reviewed in accordance with the West Yorkshire Low Emissions Strategy (WYLES) - Technical Planning Guidance. This document*

divides applications into 3 impact types (Minor, Medium and Major) using specific criteria to determine the type. Actions and mitigation requirements are dependent on the development use class and which impact type it is classified as. We consider that the application will likely to be classified as Medium. Due to the proposed intensification of a D1 use and the additional number of vehicle trips that will be generated, as a result of the proposed development, we would expect an Air Quality Impact Assessment to be submitted with any future application. The assessment should consider the following:

- *determine the impact that the development will have on local air quality and public health and identify the level of exposure through the change in pollution concentrations including cumulative impacts from other developments within the area arising from the proposal*
- *detail the increase in traffic levels, trip rates and vehicle movements*
- *determine the mitigation measures required to offset the negative impact of the development on air quality.*

An Air Quality Impact Assessment is typically required prior to the determination of a planning application"

1.2.7 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 17/07/2024].

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 compared 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 a concentration 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 states 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.

[6] Environmental Protection Act. London 1990. HMSO.
[7] Environment Act 1995. London HMSO.

Clean Air Strategy (2019)

2.1.15 In 2019, the UK government released its Clean Air Strategy 2019[8], part of its 25 Year Environment Plan[9]. The Strategy sets out the comprehensive action that is considered to be required from across all parts of government and society.

2.1.16 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 National 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[10]. 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 conditions or planning obligations. Planning obligations should only be used where it is not possible to address unacceptable impacts through a planning condition.';

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

- Paragraph 105, which states 'The planning system should actively manage patters 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.

2.3 Local Planning Policy

West Yorkshire Air Quality & Emission Technical Planning Guidance

2.3.1 The West Yorkshire Low Emissions Strategy Group (WYLES) developed this guide as part of an overarching low emission strategy to reduce road transport emissions in West Yorkshire. It is aimed at helping at helping planning authorities deliver AQO compliance through cost effective service planning brought about by the joint working and relevant Local Plan policies.

2.3.2 Assessment of air quality for relevant planning applications should consist of three steps:

1. *Determining the classification of the development proposal;*
2. *Assessing and quantifying the impact on local air quality;*
3. *Determining the level of a mitigation required by the proposal to meet Local Development Plan requirements. The assessment process is summarised in the flow chart overleaf.*

Stage 1 – Development Type Classification

2.3.3 The classification of developments and the Department for Transport (DfT) threshold criteria for a Transport Assessment (TA) are shown in **Table 2**.

Table 2: Department for Transport Criteria for Transport Assessment

Land Use	Description	TA Required at
Food Retail (A1)	Retail sale of food goods to the public – supermarkets, superstore, convenience food store.	>800m^2
Non-Food Retail (A1)	Retail sale of non-food goods to the public; but includes sandwich bars or other cold food purchased and consumed off site.	>1,500m^2
Financial and Professional Services (A2)	Banks, building societies and bureaux de change, professional services, estate agents, employment agencies, betting shops.	>2,500m^2
Restaurants and Cafes (A3)	Use for the sale of food for consumption on the premises.	>2,500m^2
Drinking Establishments (A4)	Use as a public house, wine bar for consumption on or off the premises.	>600m^2
Hot Food Takeaway	Use for the sale of hot food for consumption on or off the premises.	>500m^2
Business (B1)	(a) Offices other than in use within Class A2 (financial & professional). (b) Research and development – laboratories, studios.	>2,500m^2

Table 2: Department for Transport Criteria for Transport Assessment		
Land Use	**Description**	**TA Required at**
	(c) Light industry.	
General Industrial (A2)	General industry (other than B1).	>4,000m^2
Storage or Distribution (B8)	Storage or distribution centres – wholesale warehouses, distribution centres & repositories.	>5,000m^2
Hotels (C1)	Hotels, boarding houses & guest houses.	>100 bedrooms
Residential Institutions (C2)	Hospitals, nursing homes used for residential accommodation and care.	>50 beds
Residential Institutions (C2)	Boarding schools and training centres.	>150 students
Residential Institutions (C2)	Institutional hostels, homeless centres.	>400 residents
Dwelling Houses (C3)	Dwellings for individuals, families or not more than six people in a single household.	>50 units
Non-Residential Institutions (D1)	Medical & health services, museums, public libraries, art galleries, non-residential education, places of worship and church halls.	>1,000m^2 (GFA)
Assembly and Leisure (D2)	Cinemas, dance & concert halls, sports halls, swimming, skating, gm, bingo and other facilities not involving motorised vehicles or firearms.	>1,500m^2 (GFA)
Other	1. Any development generating 30 or more two-way vehicle movements in an hour. 2. Any developments generating 100 or more two-way vehicle movements per day 3. Any development proposing 100 or more parking spaces. 4. Any relevant development proposed in a location where the local transport infrastructure is inadequate. Any relevant development proposed in a location adjacent to an AQMA.	

MINOR: *Development proposals that fall below the above criteria.*

MEDIUM: *Development proposals that meet the above requirements.*

MAJOR: *Development proposals that meet the above requirements and the additional criteria set out in* ***Table 3****:*

Table 3: Additional Trigger Criteria Major Developments
Where the proposed development falls within the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 2011 and includes air quality and/or transport as a specific likely impact. • Proposals located within an Air Quality Management Area (AQMA). • Proposals that could increase the existing traffic flow on roads of >10,000 AADT by 5 % or more. • Proposals that increase traffic 5% on road canyons with >5,000 AADT.

Table 3: Additional Trigger Criteria Major Developments
• Proposals that could introduce or significantly alter congestion (DfT Congestion) and includes the introduction of substantial road infrastructure changes. • Proposals that reduce average speeds by more than 10kph. • Proposals that include additional HGV movements by more than 10% of total trips. • Where significant demolition and construction works are proposed.

Stage 2 – Air Quality Impact Assessment

Exposure Assessment – Minor, Medium and Major Classified Proposals

2.3.4 Minor and medium impact schemes are not required to undergo an assessment, except to determine whether the development will expose future occupants to unacceptable levels of NO_2 or other pollutants.

2.3.5 A likelihood assessment of additional exposure will be determined based on the following criteria:

- *The proposal is adjacent to or within an AQMA;*
- *The proposal is in a location 20m^2 from roads at or above the relevant national objective highlighted on the DEFRA GIS modelled maps;*
- *The proposal is one of the following Land Use types; and within 20m of roads with >10,000 AADT – A1, C1 to C3 & others (Homes of Multiple Occupation, training centres); - other – Any development generating 30 or more two0way vehicle movements in an hour.*

2.3.6 Based on the results of the exposure assessment, it will be possible to determine the level of mitigation required to make the development acceptable. Should there be no acceptable mitigation the recommendation may be to consider refusing the proposal on air quality grounds.

Local Plan

2.3.7 The Kirklees Local Plan[11] was adopted on 27 February 2019. It comprises the strategy and policies document, allocations and designations document and associated policies map. The review of the Local Plan was completed in October 2023 and found the plan to be out-of-date in several areas, including housing and employment supply and delivery, and in relation to planning policies to support the council's climate change emergency.

[11] Kirklees Council (2019) Kirklees Local Plan Strategy and Policies (Adopted 27 February 2019) [Online] Available at https://www.kirklees.gov.uk/beta/planning-policy/pdf/local-plan-strategy-and-policies.pdf [Accessed 17/07/2024].

2.3.8 The decision to begin a full update of the Local Plan was made at Full Council on 15th November 2023. The update will set out the strategy for growth and development of Kirklees over the next 15 years.

2.3.9 An overview of this document identified the following policy of relevance to air quality and the Proposed Development:

*"**Policy LP15***

Residential use in town centres

Proposals for residential uses (including student accommodation) within the defined town centres as set out on the Policies Map will be supported subject to: […]

d. the protection of the amenity of existing residents and future occupiers of the proposed residential use in accordance with amenity and design policies within the plan, and will in particular consider matters such as privacy, noise and air quality;"

*"**Policy LP47***

Healthy, active and safe lifestyles

The council will, with its partners, create an environment which supports healthy, active and safe communities and reduces inequality.

Healthy, active and safe lifestyles will be enabled by: […]

g. ensuring that the current air quality in the district is monitored and maintained and, where required, appropriate mitigation measures included as part of new development proposals"

*"**Policy LP51***

Protection and improvement of local air quality

1. Development will be expected to demonstrate that it is not likely to result, directly or indirectly, in an increase in air pollution which would have an unacceptable impact on the natural and built environment or to people.

2. Proposals that have the potential to increase local air pollution either individually or cumulatively must be accompanied by evidence to show that the impact of the development has been assessed in accordance with the relevant guidance. Development

which has the potential to cause levels of local air pollution to increase must incorporate sustainable mitigation measures that reduce the level of this impact. If sustainable measures cannot be introduced the development will not be permitted.

3. Where the development introduces new receptors into Air Quality Management Areas or Areas of Concern or near other areas of relatively poor air quality, for example near roads or junctions, the development must incorporate sustainable mitigation measures that protect the new receptors from unacceptable levels of air pollution. Where sustainable mitigation measures cannot be introduced which prevent receptors from being exposed to unsafe levels of air pollution, development will not be permitted."

*"**Policy LP52***

Protection and improvement of environmental quality

Proposals which have the potential to increase pollution from noise, vibration, light, dust, odour, shadow flicker, chemicals and other forms of pollution or to increase pollution to soil or where environmentally sensitive development would be subject to significant levels of pollution, must be accompanied by evidence to show that the impacts have been evaluated and measures have been incorporated to prevent or reduce the pollution, so as to ensure it does not reduce the quality of life and well-being of people to an unacceptable level or have unacceptable impacts on the environment.

Such developments which cannot incorporate suitable and sustainable mitigation measures which reduce pollution levels to an acceptable level to protect the quality of life and well-being of people or protect the environment will not be permitted.

Where possible, all new development should improve the existing environment."

Air Quality Action Plan

2.3.10 The Air Quality Action Plan (AQAP)[12] outlines the action the Council will take to improve air quality in Kirklees between April 2019 and March 2024.

2.3.11 The Council has developed actions that can be considered under 11 broad topics:

- Alternatives to private vehicle use
- Environmental permits

[12] Kirklees Council (2019) Air Quality Action Plan for Kirklees Council Version 1.4 (September 2019) [Online] Available at https://www.kirklees.gov.uk/beta/crime-and-safety/pdf/air-quality-action-plan.pdf [Accessed 17/07/2024].

- Freight and delivery management
- Policy guidance and development control • Promoting low emission plants; • Promoting low emission transport
- Promoting travel alternatives
- Public information
- Transport planning and infrastructure
- Traffic management
- Vehicle fleet efficiency

Air Quality Strategy

2.3.12 The Air Quality Strategy[13] outlines the approach Kirklees takes for:

- Achieving and maintaining good air quality in Kirklees
- Informing other strategies and developing plans where air quality is a linking theme
- Identifying the responsibilities of different stakeholders
- Providing a framework for decisions about development proposals where air quality should be considered at an early stage
- Setting out the approach to development control (planning applications) where air quality is a material consideration
- Highlighting initiatives involving the Council demonstrating best practice for minimising pollution

2.3.13 This first strategy sets out broad aims and objectives alongside a position statement, and then sets a target for developing more specific action plan targets and objectives

2.4 Guidance

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

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

2.4.2 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

[13] Kirklees Council (2007) Kirklees Local Air Quality Strategy [Online] Available at https://www.kirklees.gov.uk/beta/crime-and-safety/pdf/AirQualityStrategy.pdf [Accessed 17/07/2024].
[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.

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)

2.4.3 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)

2.4.4 This document[16] 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} 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)

2.4.5 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 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.

[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.

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 Masterplan of the Proposed Development;
- Review of the traffic data provided by the Project Transport Consultant (TC);
- Desktop study to confirm the locations of nearby existing receptors that may be sensitive to changes in local air quality; and
- Review of KC's latest available Air Quality Annual Status Report[18] (ASR) and air quality data surrounding the Site including data from the appointed TC, and Defra[19] and the Environment Agency (EA)[20];

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, 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

[18] Powys County Council 2023 Air Quality Progress Report. Available at https://en.powys.gov.uk/article/7201/Air-Quality [Accessed 13/03/2024].
[19] Department for Environment, Food and Rural Affairs (Defra) Local Air Quality Management (LAQM) Support Pages [Online] Available at https://laqm.defra.gov.uk/ [Accessed 13/07/2024].
[20] Department for Environment, Food and Rural Affairs (Defra, 2022) Pollution Inventory [Accessed 13/07/2024].

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 can therefore be transported by wind over a wider area. $PM_{2.5}$ 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 Proposed 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 1,000 m^2 of floor space for all other uses or a site area 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 or 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.

Selection of Background Concentrations

3.3.7 Background pollutant data for the operational phase assessment have been taken from the national maps provided on the Defra[21] 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 all 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. In this assessment, 2025 background concentrations for NO_X, NO_2, PM_{10} and $PM_{2.5}$ have been utilised for the opening year.

Construction Phase

3.3.8 The IAQM assessment is undertaken where there are:

- 'human receptors' within 50m 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 50m 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).

3.3.9 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.

[21] Department for Environment, Food and Rural Affairs (Defra) Background Concentrations 2018 [Online] Available at https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2018 [Accessed on 29/07/2024].

3.4 Significance Criteria

Construction Phase

3.4.1 The IAQM assessment methodology recommends that significance criteria is 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.

3.4.2 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 PM; the significance of residual effects has been determined using professional judgement and the principles outlined in the IAQM Guidance, which are described below.

Operational Phase

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

Future Exposure

3.4.4 The Proposed Development is not within or adjacent to an AQMA, and is proposed for industrial use, thus the exposure of future users does not need to be assessed in accordance with the EPUK and IAQM guidance.

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), KC has undertaken review and assessment of air quality within their area of jurisdiction. The Council has declared ten AQMAs due to exceedances of the annual mean NO_2 and 24-hour mean PM_{10} objectives across the whole borough.

4.2.2 The Site is not located within or adjacent to an AQMA.

4.3 Air Quality Monitoring

4.3.1 Monitoring of pollutant concentrations is undertaken by KC throughout their area of jurisdiction. The Council undertook automatic NO_2 monitoring at two sites and non-automatic NO_2 monitoring at over 100 sites during 2022.

4.3.2 Furthermore, KC undertook PM_{10} at one location and $PM_{2.5}$ monitoring at three locations during 2022.

4.3.3 Monitoring of pollutant concentrations is undertaken by KC throughout their area of jurisdiction. There is no monitoring undertaken within 1km of the Site boundary, suggesting air quality is not a concern in the area.

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 Site is located in grid square 423500, 424500. Data for this location was downloaded from the DEFRA website and is summarised in **Table 4**:

Table 4: Predicted Background Pollutant Concentrations						
OS Grid Reference (X, Y; m)	Predicted Background Pollutant Concentration (µg/m^3)					
	2022			2025		
	NO_2	PM_{10}	$PM_{2.5}$	NO_2	PM_{10}	$PM_{2.5}$
423500, 424500	13.9	12.3	8.5	12.7	12.0	8.2
Rounded to 1 d.p.						

4.4.2 As shown in **Table 4** predicted background NO_2, PM_{10} and $PM_{2.5}$ concentrations are well below the relevant AQOs across the assessment extents in the baseline year of 2022 and the earliest possible opening year of 2025.

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 that 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 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 existing Site comprises light industrial units up to two storeys in height. The total building volume is estimated to be between 12,000m^3 – 75,000m^3, with potentially dusty construction material given the brick buildings and a demolition height of between 6 – 12m. Therefore, the potential dust emission magnitude from demolition activities is considered to be **medium**.

Earthworks

5.2.6 The total Site area is less than 18,000m^2. It is also considered likely that there will be 5 heavy earth moving materials or bunds 3m in height. Therefore, the potential dust emission magnitude from earthworks activities is considered to be **small**.

Construction

5.2.7 Due to the size of the Site, the total building volume to be constructed is assumed to be more than 12,000m^3. Additionally, there will be potentially dusty construction material (e.g., concrete). As such, the potential dust emission magnitude from construction activities is considered to be **medium**.

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 and the type of the Proposed Development there are likely to be less than 20 HDV outward movements in any one day and any unpaved road area will be less than 50 meters Therefore, the potential dust emission magnitude from trackout activities is considered to be **small.**

5.2.9 **Table 5** provides a summary of the potential dust emission magnitude determined for each construction activity considered.

Table 5: Potential Dust Emission Magnitude	
Activity	**Dust Emission Magnitude**
Demolition	Medium
Earthworks	Small
Construction Activities	Medium
Trackout	Small

Assessment of Sensitivity of the Study Area

5.2.10 The prevailing wind direction is predominantly from the southwest. Therefore, receptors located to the northeast 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 northeast of the Site are expected to be affected the most as a result of the prevailing wind direction.

5.2.12 There are no ecological receptors within 50m of the Site boundary or access route, or within 50m of the Site entrance as identified using Multi Agency Geographic Information for the Countryside (MAGIC) website[22]. The closest ecological receptor is the Oakwell Park Local Nature Reserve approximately 3km north of the Site. As such, ecological impacts have not been assessed further within this report.

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 below, in **Table 6**.

Table 6: Sensitivity of the 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

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 7** below provides a summary of the risk of just impacts for the Proposed

[22] Department for Environment, Food and Rural Affairs (Defra) Multi-Agency Geographic Information for the Countryside (MAGIC) [Online] Available at https://magic.defra.gov.uk/ [Accessed on 13/07/2024].

Development. The risk category identified for each construction activity has been used to determine the level of mitigation required.

Table 7: Summary Dust Risk Table Defining Site Specific Mitigation				
Potential Impact	**Risk**			
	Demolition	**Earthworks**	**Construction**	**Trackout**
Dust Soiling	Medium	Low	Medium	Low
Human Health	Low	Negligible	Low	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. Construction traffic will access the Site via the local road network.

5.2.16 Final details of the exact plant and equipment likely to be used on-site will be determined by the appointed contractor, it is considered likely to comprise dump trucks, tracked excavators, diesel generators, asphalt sweaters, rollers, compressors and trucks. The number of plant and their location within the Site are likely to be variable over the construction.

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 comment the impacts are therefore considered to being **negligible** according to the assessment significance criteria.

5.3 Operational Phase Assessment

5.3.1 Any vehicle movements associated with the Proposed Development will generate exhaust emissions on the local and regional road networks.

5.3.2 A screening assessment has been conducted based on Stage 1 EPUK and IAQM criteria. The Proposed Development exceeds Stage 1 criteria of the EPUK and IAQM guidance and the assessment must proceed to Stage 2.

5.3.3 As the Site is not in or close to any AQMAs, the 500 AADT LDVs or 100 AADT HDVs criteria applies. The Projects Transport Consultant has confirmed that the development trip generation has been calculated at 337 AADT LDV trips over what is currently consented. Therefore, the Stage 2 criteria is not met, and no further assessment is required.

5.3.4 Based on the extent of predicted population exposure to the impacts on pollutant concentrations and the guidance provided by the EPUK and IAQM, the overall effect of the Proposed Development is considered to be **not significant**.

5.4 West Yorkshire Low Emission Strategy

5.4.1 The Proposed Development meets the criteria set out in **Table 2**, but not the additional criteria set out in **Table 3**. Therefore, the Proposed Development can be considered to be **Medium**, with the appropriate mitigation measures for this classification to be implemented.

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. As the Site poses a maximum of 'Medium' risk for dust impacts, the IAQM's highly recommended mitigation measures for a 'Medium' risk site are presented below (for the elements which present a medium risk):

Communications:

- 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.

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 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.

Monitoring

- Carry out regular site inspections to monitor compliance with the Dust Management Plan (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.

- Agree dust deposition, dust flux, or real-time PM10 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.

Preparing and Maintaining the Site

- 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.

Operating/Vehicle Machinery and Sustainable Travel

- Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone and the London NRMM standards, where applicable.
- 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.

Operations

- 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 /particle 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.

Waste Management

- Avoid bonfires or burning of waste materials.

Demolition

- 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.

Construction

- 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.

Trackout

- Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use.
- Avoid dry sweeping of large areas.
- Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.
- Inspect on-site hauls routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.
- Record all inspections of haul routes and any subsequent action in a site log book.
- Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.
- Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).

- Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the exit, wherever site size and layout permits.
- Access gates to be located at least 10m from receptors where possible.

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.

Residual Effects

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

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

6.2 Operational Phase

Mitigation

6.2.1 The changes in pollutant 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.

Residual Effects

6.2.2 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 sensitive receptors, with the overall effect considered to be **not significant**.

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

6.3 West Yorkshire Low Emissions Strategy

6.3.1 The Proposed Development is considered to meet the **Medium** classification. The following mitigation measures should be implemented:

Minor Mitigation Measures

- 10% of parking spaces which may be phased with 5% initial provision and the remainder at an agreed level for EV Charging.
- Demolition and Construction should adhere to the London Best Practice Guidance for all demolition and construction works*.

*The IAQM has since released an updated version of the demolition and construction guidance which can be considered 'more robust/strict' and has therefore been used.

Medium Proposal Default Mitigation

- Minor Mitigation (as outlined above)
- Travel Plan including agreed mechanisms for discouraging high emission vehicle use and encouraging modal shift (i.e. public transport, cycling and walking) as well as the uptake of low emission fuels and technologies.
- Improved pedestrian links to public transport stops.
- Provision of new bus stops infrastructure, including shelters, raised kerbing, information displays.
- Provision of subsidised or free ticketing (Corporate and residential Metrocards, Student Metrocards).
- Site layout to include improved pedestrian pathways to encourage walking.
- Improved convenient and segregated cycle paths to link to local cycle network.

7 SUMMARY AND CONCLUSIONS

7.1.1 NoiseAir Limited was commissioned to undertake this AQA in support of a planning application for a new commercial development at Healey Lane Complex, Healey Lane, Healey, Batley WF17 7SH.

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 maximum of **Medium risk** of dust soiling impacts and a **Low risk** of increases in particulate matter concentrations due to unmitigated construction activities for human health. However, through good site practice and the implementation of highly recommended 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 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**, in line with the EPUK & IAQM guidance.

7.1.4 Based on the assessment significance criteria, the residual effect of the Proposed Development is considered to be **negligible** for all pollutants considered.

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

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

FIGURES

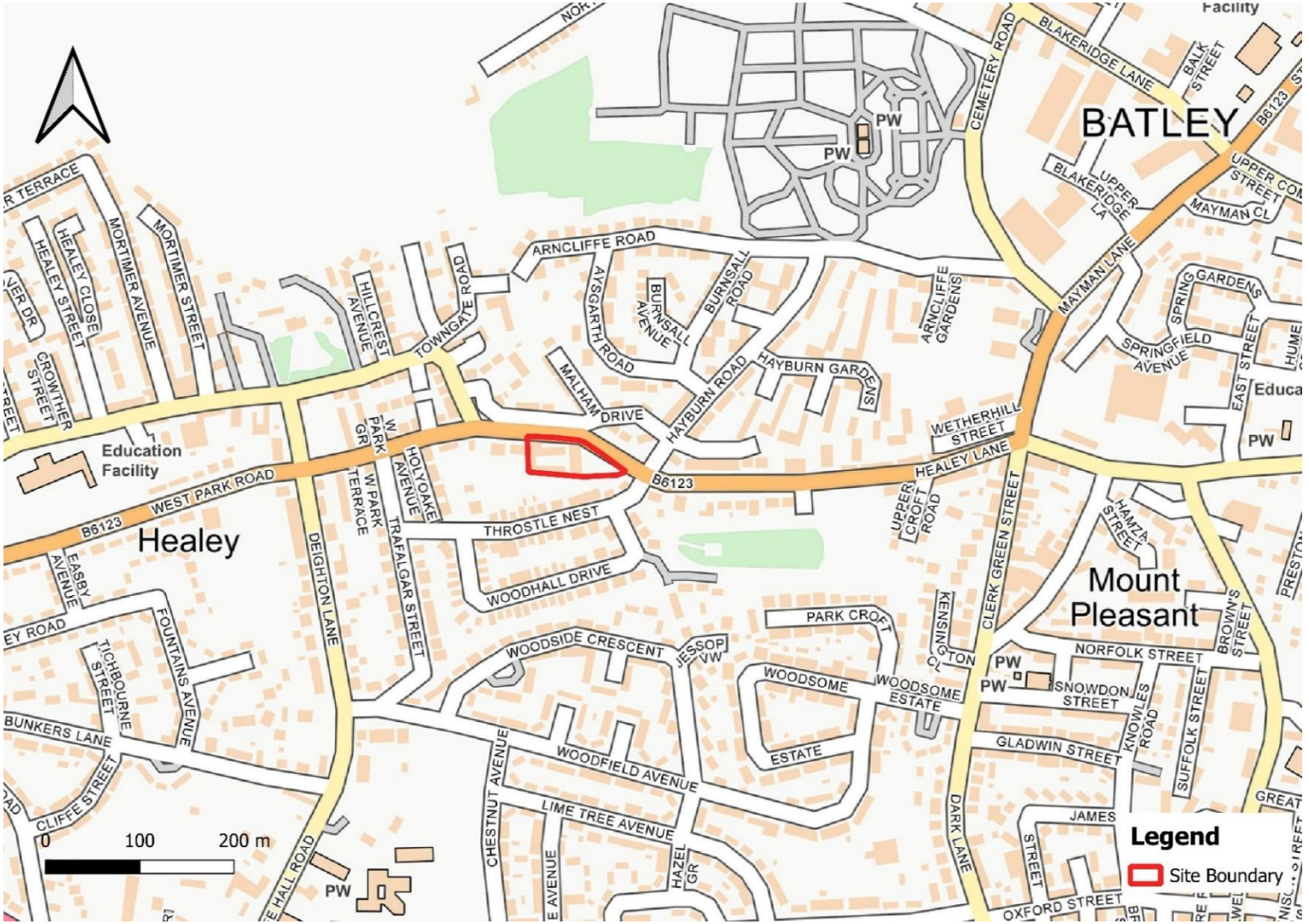

Figure 1 Site Boundary and Monitoring Locations

APPENDIX A - REPORT LIMITATIONS

This Report is presented to Healey Islamic Trust 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.

Notwithstanding anything to the contrary contained in the report, NoiseAir Limited is obliged to exercise reasonable skill, care and diligence in the performance of the services required by Healey Islamic Trust and NoiseAir shall not be liable except to the extent that it has failed to exercise reasonable skill, care and diligence, and this report shall be read and construed accordingly.

This report has been prepared by NoiseAir Limited. No individual is personally liable in connection with the preparation of this report. By receiving this report and acting on it, the client or any other person accepts that no individual is personally liable whether in contract, tort, for breach of statutory duty or otherwise.

The conclusions and recommendations contained in this report are based upon information provided by others and upon the assumption that all relevant information has been provided by those parties from who it has been requested and that such information is accurate. Information obtained by NoiseAir Limited has not been independently verified by NoiseAir Limited unless otherwise stated in the report and should be treated accordingly.

Where assessments of works or costs identified in this report are made, such assessments are based upon the information available at the time and where appropriate are subject to further investigations or information which may become available.

Where / if estimates and projects are made within this report, are made based on reasonable assumptions as of the date of this report, such statements however by their very nature involve risks and uncertainties that could cause actual results to differ materially from the results predicted. NoiseAir Limited specifically does not guarantee or warrant any estimates or projects contained in 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
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.
NO_2	Nitrogen dioxide.
NO_X	Nitrogen oxides.
PM_{10}	Particulate matter with an aerodynamic diameter of less than 10 micrometres.
$\mu g/m^3$ micrograms per cubic metre	A measure of concentration in terms of mass per unit volume. A concentration of 1$\mu g/m^3$ 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 is:

- 'human receptors' within 250m of the boundary of the site; all within 50m of the route(s) used by construction vehicles on the public highway, up to 250m from the site entrance(s); and/ or
- 'ecological receptors' within 50m of the boundary of the site; or within 50m of the route(s) used by construction vehicles on the public highway, up to 250m from the site entrance(s)

For specific (high risk) schemes the planning authority may require dust assessment despite the proposed site falling outside the distances above.

Where the need for more detail assessment is screened out, it can be concluded that the level of risk is 'negligible', and any effects will not be significant.

Step 2a – Define the Potential Dust Emission Magnitude

The dust emission magnitude is based on the scale of the anticipated works and should be classified as Small, Medium, or Large. The following are examples of how the potential dust emission magnitude for different activities can be defined.

Note that, in each case, not all criteria need to be met; other criteria may be used if justified within the assessment. Where relevant, multiple screening assessments may be completed for different development phases (or even sub-phases where demolition may be brief or there is a very short period of intense activity, for example).

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 12 m above ground level.
	Earthworks	- Total site area greater than 110,000 m^2. - Potentially dusty soil type (e.g., clay, which will be prone to suspension when dry due to small particle size).

Table C1: Construction Dust - Magnitude of Emission		
Magnitude	**Activity**	**Criteria**
		- More than 10 heavy earth moving vehicles active at any one time. - Formation of bunds greater than 6 m 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) trips per day. - Potentially dusty surface material (e.g., high clay content). - Unpaved road length greater than 100 m.
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 6 m to 12 m above ground level.
	Earthworks	- Total site area between 18,000 m^2 and 110,000 m^2. - Moderately dusty soil type (e.g., silt). - Between 5 and 10 heavy earth moving vehicles active at any one time. - Formation of bunds between 3 m and 6 m in height.
	Construction	- Total building volume 12,000 m^3 to 75,000 m^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 50 m to 100 m.
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 6 m above ground.

Table C1: Construction Dust - Magnitude of Emission		
Magnitude	**Activity**	**Criteria**
	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 3 m 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. - 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 Human Health Impacts							
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

Table C3: Sensitivity of the Area to Human Health Impacts							
Receptor Sensitivity	Annual Mean PM_{10} Concentrations ($\mu g/m^3$)	Number of Receptors	Distance from the Source (m)				
			<20	<50	<100	<200	<350
		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	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible
Trackout			
High	High Risk	Medium Risk	Low Risk

Table C5: Risk of Dust Impacts			
Sensitivity of Surrounding	**Dust Emission Magnitude**		
	Large	**Medium**	**Small**
Medium	Medium Risk	Medium Risk	Low Risk
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 law, 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 to sensitive receptors I'm there for the residual effects will normally be negligible.

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