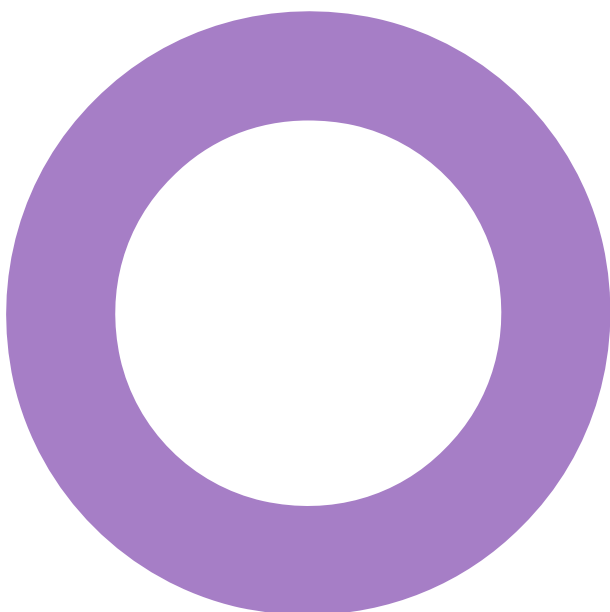


Dixons Academy. Wythenshawe. Morgan Sindall.

AIR QUALITY
AIR QUALITY ASSESSMENT

REVISION 01 – 14 APRIL 2023



Audit sheet.

Rev.	Date	Description of change / purpose of issue	Prepared	Reviewed	Authorised
00	31/03/2023	First Draft	LC	AD	KW
01	14/04/2023	First Issue	LC	AD	KW

This document has been prepared for Morgan Sindall only and solely for the purposes expressly defined herein. We owe no duty of care to any third parties in respect of its content. Therefore, unless expressly agreed by us in signed writing, we hereby exclude all liability to third parties, including liability for negligence, save only for liabilities that cannot be so excluded by operation of applicable law. The consequences of climate change and the effects of future changes in climatic conditions cannot be accurately predicted. This report has been based solely on the specific design assumptions and criteria stated herein.

Project number: 34/22157

Document reference: FS0998-HLEA-ZZ-ZZ-T-O-0007.docx

Contents.

Audit sheet.	2
Executive Summary.	5
1. Introduction.	6
1.1 Proposed Development.	6
1.2 Application Site Description and Location.	6
1.3 Scope of Assessment.	7
2. Legislation, Policy and Guidance Documents.	8
2.1 Air Quality Strategy and Local Air Quality Management.	8
2.2 EU Limit Values.	9
2.3 WHO Guidelines Values.	9
2.4 The Environment Act.	9
2.5 Building Regulations.	9
2.6 General Nuisance Legislation.	9
2.7 Clean Air Strategy.	9
2.8 Planning Policy.	10
2.9 Local Policy.	11
2.10 Assessment Guidance.	13
3. Assessment Methodology.	14
3.1 Consultation.	14
3.2 Existing Air Quality in the Study Area.	14
3.3 Construction Phase Impacts.	14
3.4 Operational Phase Impacts.	15
3.5 Assessment of Significance.	15
4. Baseline Environment.	17
4.1 Site Setting.	17
4.2 Local Air Quality Management Review and Assessment.	17
4.3 Local Air Quality Monitoring.	18
4.4 Industrial Pollution.	21
4.5 Defra Predicted Concentrations.	21
4.6 Summary of Background Data.	21
5. Construction Phase Assessment.	23
5.1 Construction Phase Dust Assessment.	23
5.2 Construction Phase – Vehicular Pollutants.	26

5.3 Construction Phase – Non-Road Mobile Machinery.	26
6. Operational Phase Assessment.	27
6.1 Road Traffic Emissions Screening Assessment.	27
6.2 Site Suitability.	27
7. Mitigation.	29
7.1 Construction Phase.	29
7.2 Operational Phase.	32
8. Summary and Conclusions.	33
9. Glossary of Terms.	34
References.	35
Appendix 1 - EHO Consultation.	36
Appendix 2 - Professional Experience.	39

Executive Summary.

Hoare Lea have been commissioned by Morgan Sindall to undertake an Air Quality Assessment to support the planning application for a proposed school development on the site of the former Newall Green High School, Greenbrow Road, Manchester, M23 2SX (hereafter referred to as the 'Application Site').

The Proposed Development comprises the partial demolition of existing buildings to the north of the main school building and refurbishment and extensions to the main school building, with associated hardstanding and landscape works at the former Newall Green High School site.

The baseline assessment shows that the Application Site is not located within an Air Quality Management Area (AQMA), but it is approximately 500 m northwest of the Manchester City Council (MCC)'s AQMA. Automatic monitoring results indicated that there has been no exceedance of the annual mean nitrogen dioxide (NO₂) Air Quality Objective (AQO) at the two nearby automatic monitoring locations in 2019. Moreover, there has also been no exceedances of the annual mean and 24-hour mean particulate matter (PM₁₀ and PM_{2.5}) AQOs in 2019 at these automatic monitoring locations. Passive diffusion tube monitoring locations indicate no exceedances of the annual mean NO₂ AQO in 2019.

Initial traffic information has been provided by Flinders Chase, the appointed Traffic Consultants for the project. It is noted that there will be no additional traffic generated by the Proposed Development, compared to the former Newall Green High School which closed in 2021. Since traffic from the former school is included within the baseline data, which considers 2019 as the most recent representative baseline year, there is not expected to be any significant changes from baseline air quality. Additional road traffic is below the screening criteria and as such, in line with the Environmental Protection UK (EPUK) and the Institute of Air Quality Management (IAQM) guidance, the impact of additional traffic on local air quality is considered insignificant and a detailed assessment of the trip generation is not required.

The energy strategy for the Proposed Development is all electric, utilising zero-emissions technologies, such as Air Source Heat Pumps (ASHPs) for heating. Moreover, no life-safety generated are required in the energy strategy. As no combustion sources are proposed for the primary source of energy supply, no local air quality impacts are anticipated and a detailed assessment of impacts of combustion emissions from the energy plant has been screened out of this assessment.

The current ventilation strategy comprises of providing, wherever possible, natural and hybrid ventilation as the primary solution. The mechanical ventilation will be provided to internal rooms and areas where natural or hybrid ventilation solutions are not feasible. Classrooms will be provided with a mix of natural and hybrid ventilation while sanitary accommodation/washrooms and kitchen spaces, will be provided with dedicated mechanical extract ventilation and dedicated extract fan, respectively.

In line with IAQM's Construction and Demolition Dust guidance, it was identified a high risk of dust soiling impacts and a low risk of increases in PM₁₀ concentrations due to construction activities. The risk of dust causing a loss of local amenity and increased exposure to fine particulate matter concentrations has been used to identify appropriate mitigation measures. Provided these are implemented and included within a dust management plan, for example through a planning condition, the residual impacts are considered to be not significant.

The site suitability assessment indicates no likely exceedances of the relevant AQOs for NO₂, PM₁₀ and PM_{2.5} at the Application Site. The Proposed Development is set back more than 600 m from the M56 and therefore concentrations are likely to be lower with increasing distance from any motorway road. Defra predicted background concentrations are predicted to be in compliance with the relevant AQOs in 2024, the anticipated opening year of the Proposed Development.

Based on this assessment, the Application Site is considered suitable for the Proposed Development without the inclusion of mitigation and air quality should not be considered as a constraint to the planning. It is considered that the Proposed Development conforms with the National Planning Policy Framework (NPPF) and the MCC Core Strategy Development Plan.

1. Introduction.

Hoare Lea have been commissioned by Morgan Sindall to undertake an Air Quality Assessment to support the planning application for a proposed school development on the site of the former Newall Green High School, Greenbrow Road, Manchester, M23 2SX (hereafter referred to as the 'Application Site').

1.1 Proposed Development.

The Proposed Development comprises the partial demolition of existing buildings to the north of the main school building and refurbishment and extensions to the main school building, with associated hardstanding and landscape works at the former Newall Green High School site.

The energy strategy for the Proposed Development is all electric, utilising zero-emissions technologies, such as Air Source Heat Pumps (ASHPs) for heating. Moreover, no life-safety generated are required in the energy strategy. As no combustion sources are proposed for the primary source of energy supply, no local air quality impacts are anticipated and a detailed assessment of impacts of combustion emissions from the energy plant has been screened out of this assessment.

The current ventilation strategy comprises of providing, wherever possible, natural and hybrid ventilation as the primary solution. The mechanical ventilation will be provided to internal rooms and areas where natural or hybrid ventilation solutions are not feasible. Within classrooms, a mix of natural and hybrid ventilation is proposed, using façade openings and hybrid natural ventilation units. Moreover, sanitary accommodation and washrooms will be provided with dedicated mechanical extract ventilation whilst kitchen spaces will be provided via a dedicated extract fan.

1.2 Application Site Description and Location.

The Application Site is located within Manchester City Council (MCC) administrative area at the approximate National Grid Reference (NGR): [X 380870, Y 387500].

The Application Site is bound by Clay Lane to the west and residential properties to the north. To the east of the Application Site there are a number of residential properties and to the north is the Roundthorn Industrial Estate. Further east of the Application Site is the North Cheshire Motorway (M56).

The Application Site currently comprises the disused Newall Green High School site which closed during August 2021.

A visual representation of the Application Site boundary is displayed in Figure 1.



Figure 1: Visual Representation of the Application Site Boundary. Contains OS Data Crown Copyright and Database Rights 2022.

1.3 Scope of Assessment.

An email detailing the proposed methodology for the Air Quality Assessment was provided to MCC on March 30th, 2023. A response from MCC was received on April 5th, 2023. A copy of the correspondence with MCC has been included in Appendix 1.

A summary of the scope of the assessment includes:

- A review of relevant legislation, policy and guidance documents;
- Determination of baseline scenario, using MCC monitoring data and Department for Environment, Food and Rural Affairs (Defra) predicted background concentrations;
- Assessment of potential air quality impacts during the construction phase;
- Assessment of potential air quality impacts during the operational phase;
- Assessment of Site Suitability of the Application Site for the Proposed Development; and
- Identification of required mitigation measures.

2. Legislation, Policy and Guidance Documents.

2.1 Air Quality Strategy and Local Air Quality Management.

The Environment Act 1995 (Part IV)¹ requires the Secretary of State to publish an air quality strategy and local authorities to review and assess the quality of air within their boundaries. The latter has become known as Local Air Quality Management (LAQM).

The Air Quality Strategy² provides the policy framework for local air quality management and assessment in the UK. It sets out air quality standards and objectives for key air pollutants. These standards and objectives are designed to protect human health and the environment. The Strategy also sets out how the different sectors of industry, transport and local government, can contribute to achieving these AQOs.

Local authorities are required to identify whether the AQOs have been, or will be, achieved at relevant locations, by the applicable date. If the AQOs are not achieved, the authority must declare an (AQMA and should prepare an action plan within 12 months. An action plan must identify appropriate measures and policies that can be introduced in order to work towards achieving the AQO(s).

The AQOs set out the extent to which the Government expects the standards to be achieved by a certain date. They take account of economic efficiency, practicability, technical feasibility and timescale. The AQOs for use by local authorities are prescribed within the Air Quality (England) Regulations 2000³, and the Air Quality (England) (Amendment) Regulations 2002⁴.

The AQOs for Nitrogen Dioxide (NO₂) and particulate matter (PM₁₀ and PM_{2.5}) are set out in Table 1. The AQOs for NO₂, PM₁₀ and PM_{2.5} were to have been achieved by 2005, 2004 and 2020 respectively and continue to apply in all future years thereafter. These targets are accompanied by the long term (10 µg/m³ by 2040) and interim (12 µg/m³ by 31st January 2028) PM_{2.5} targets outlined in the Environmental Improvement Plan 2023⁵.

Table 1: Air Quality Objectives for NO₂, PM₁₀ and PM_{2.5}

Pollutant	Time Period	Objective
Nitrogen Dioxide (NO ₂)	1-hour Mean	200 µg/m ³ Not to be exceeded more than 18 times a year
	Annual Mean	40 µg/m ³
Fine Particles (PM ₁₀)	24-hour Mean	50 µg/m ³ Not to be exceeded more than 35 times a year
	Annual Mean	40 µg/m ³
Fine Particles (PM _{2.5}) *	Annual Mean	20 µg/m ³

*The time period in LAQM.TG22⁶ states "Work towards reducing emissions/concentrations of fine particulate matter (PM_{2.5})"

The AQOs apply at locations where members of the public are likely to be regularly present and exposed over the averaging period of the AQO. Examples of where the annual mean AQOs should apply are provided in the Local Air Quality Management Technical Guidance (LAQM.TG(22))⁶, and include: building facades of residential properties, schools, hospitals. The annual mean AQOs are not relevant for the building facades of offices or other places of work where members of the public do not have regular access, kerbsides or gardens.

The 24-hour AQO for PM₁₀ is considered to apply at the same locations as the annual mean AQO, as well as in gardens of residential properties and at hotels.

The 1-hour AQO for NO₂ also applies wherever members of the public might regularly spend 1-hour or more, including outdoor eating locations, pavements of busy shopping streets, carparks and bus stations which are not fully enclosed. The 1-hour AQO does not apply at kerbside sites where the public do not have regular access.

2.2 EU Limit Values.

The European Union has also set limit values for NO₂, PM₁₀ and PM_{2.5}; these are legally binding and have been implemented into English legislation by The Air Quality Standards Regulations 2010⁷ and The Air Quality Standards (Amendment) Regulations 2016⁸.

The limit values for NO₂, PM₁₀ and PM_{2.5} are the same as the English objectives (given in Table 1), but applied from 2010 for NO₂, 2005 for PM₁₀ and 2015 for PM_{2.5}. The limit values apply at all locations (apart from where the public does not have access, where health and safety at work provisions apply and on the road carriageway).

2.3 WHO Guidelines Values.

The WHO has produced air quality guidelines⁹ to offer global guidance on thresholds and limits for key air pollutants that pose health risks. The 2005 WHO guidelines have been set out in Table 2 for NO₂, PM₁₀ and PM_{2.5} concentrations. The WHO also released revised air quality guidelines in September 2021¹⁰. The revised annual mean thresholds for NO₂, PM₁₀ and PM_{2.5} are 10 µg/m³, 15 µg/m³ and 5 µg/m³ respectively. However, the revised guidelines are yet to be included in policies and carried into effect.

Table 2: 2005 WHO guidelines for NO₂, PM₁₀ and PM_{2.5}

Pollutant	Time Period	Objective
NO ₂	1-hour Mean	200 µg/m ³ 1-hour mean
	Annual Mean	40 µg/m ³ annual mean
PM ₁₀	Annual Mean	20 µg/m ³
PM _{2.5}	Annual Mean	10 µg/m ³

2.4 The Environment Act.

The Environment Act 2021¹¹ acts as the UK's new framework of environmental protection and came into force on 1st April 2022. With regard to air quality, the Environment Act establishes a legally binding duty on government to bring forward at least two new air quality targets in secondary legislation. This was implemented through the Environmental Improvement Plan⁵ which outlines new PM_{2.5} targets for future years. These are a long term target of 10 µg/m³ by 2040 and an interim target of 12 µg/m³ by 31st January 2028.

2.5 Building Regulations.

The Building Regulations help to ensure that new buildings, conversions, renovations and extensions (domestic or commercial) are going to be safe, healthy and high performing. Detailed regulations cover specific topics including structural integrity, fire protection, accessibility, energy performance, acoustic performance, protection against falls, electrical and gas safety. Part F of the Building Regulations (2021)¹² provides guidance on indoor air quality and the pollutant concentrations that must not be exceeded in buildings for use as either dwellings or non-dwellings.

2.6 General Nuisance Legislation.

Part III of the Environmental Protection Act (EPA) 1990 (as amended) contains the main legislation on Statutory Nuisance and allows local authorities and individuals to take action to prevent a statutory nuisance. Section 79 of the EPA defines, amongst other things, smoke, fumes, dust and smells emitted from industrial, trade or business premises so as to be prejudicial to health or a nuisance, as a potential Statutory Nuisance.

Fractions of dust greater than 10 µm in diameter (i.e. greater than PM₁₀) typically relate to nuisance effects as opposed to potential health effects and therefore are not covered within the Air Quality Strategy. In legislation there are currently no numerical limits in terms of what level of dust deposition constitutes a nuisance.

2.7 Clean Air Strategy.

The Clean Air Strategy (CAS)¹³, published in 2019, sets out the Government's proposals aimed at delivering cleaner air in England, and also indicates how devolved administrations intend to make emissions reductions. It

sets out the comprehensive action that is required from across all parts of government and society to deliver clean air.

2.8 Planning Policy.

2.8.1 National Planning Policy Framework.

The National Planning Policy Framework (NPPF) 2021¹⁴ sets out planning policy for England. It includes advice on when air quality should be a material consideration in development control decisions. Relevant sections are set out below:

Paragraph 55: “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.”

Paragraph 104: “...c) opportunities to promote walking, cycling and public transport use are identified and pursued; d) the environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account - including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains...”

Paragraph 105: “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: “Planning policies and decisions should contribute to and enhance the natural and local environment by: preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality.”

Paragraph 185: “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: “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.”

Paragraph 188: “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.”

The NPPF is supported by Planning Practice Guidance (PPG)¹⁵.

The PPG states that:

Paragraph 001 (Reference ID: 32-001-20191101): “Defra carries out an annual national assessment of air quality using modelling and monitoring to determine compliance relevant Limit Values. It is important that the potential impact of new development on air quality is taken into account in planning where the national assessment indicates that relevant limits have been exceeded or are near the limit or where the need for emissions reductions has been identified.”

Paragraph 002 (Reference ID: 32-002-20191101): Plans may need to consider ways in which the development could be made appropriate in locations where air quality is or is likely to be a concern, and not give rise to unacceptable risks from pollution. This could, for example entail identifying measures for offsetting the impact on air quality arising from new development including supporting measures in an air quality action plan or low emissions strategy where applicable”.

Paragraph 005 (Reference ID: 32-005-20191101): “Whether air quality is relevant to a planning decision will depend on the proposed development and its location. Concerns could arise if the development is likely to have an adverse effect on air quality in areas where it is already known to be poor, particularly if it could affect the implementation of air quality strategies and action plans and / or breach legal obligations (including those relating to the conservation of habitats and species). Air quality may also be a material consideration if the proposed development would be particularly sensitive to poor air quality in its vicinity.

The PPG also sets out the information that may be required in an air quality assessment, stating that:

Paragraph 007 (Reference ID: 32-007-20191101): “Assessments need to be proportional to the nature and scale of development proposed and the potential impacts (taking into account existing air quality conditions), and because of this are likely to be locationally specific. The scope and content of supporting information is best discussed and agreed between the local planning authority and applicant before it is commissioned”.

It also provides guidance on options for mitigating air quality impacts, and makes clear that:

Paragraph 008 (Reference ID: 32-008-20191101): “Mitigation options will need to be locationally specific, will depend on the proposed development and need to be proportionate to the likely impact.”

2.9 Local Policy.

2.9.1 Manchester City Council Core Strategy Development Plan.

The Manchester Core Strategy Development Plan¹⁶ was adopted in 2012 and covers the years 2012 to 2027. This document outlines the vision of the MCC for Manchester until the year 2027 alongside the planning policies used to deliver that vision. Policies relevant to air quality are given below:

Policy EN16 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 impact 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 developments the Council will consider the impacts on air quality, alongside other plan objectives. This includes cumulative impacts, particularly in Air Quality Management Areas”.

Policy CC 5 Transport

“The Transport Strategy for Manchester City Centre will be delivered to ensure that transport is managed in a way which supports the projected growth of the City Centre.

[...]

Proposals will be supported that improve pedestrian safety, improve air quality and increase the scope of accessible public realm improvements.”

Policy EN 7 Energy Infrastructure Opportunities

“There will be a general presumption in favour of low and zero carbon decentralised energy schemes, subject to the following considerations:

[...]

- The cumulative impact of energy schemes will be taken into account when considering applications, to include modelled impacts on air quality and landscape character, with reference to Policy EN16 Air Quality.

[...]"

Policy DM1 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.

[...]"

2.9.2 Manchester Citywide Unitary Development Policies – Environmental Improvement and Protection.

The Application Site is located within Area '25' of MCC's City Centre Small Area Policies Map¹⁷. Within this area, Part 1 of the Extant Unitary Development Policies (UDP) – Environmental Improvement and Protection¹⁸ applies. This policy aims to encourage high-quality development within the city centre to enhance the City's environment. Whilst this policy does not specifically mention air quality, it highlights the Council's efforts to improve the environment through improved traffic routing schemes and increased "green" areas between city developments.

2.9.3 Local Air Quality Management in Manchester.

An AQMA was declared in Greater Manchester in 2016 for exceedances of the annual mean NO₂ AQO. The AQMA covers the 10 districts of Greater Manchester, including arterial routes, district centres, and the airport. Consequently, an Air Quality Action Plan¹⁹ was published in 2016 to set out actions and measures to bring about an improvement in air quality, to benefit the health of the population. The current Air Quality Action Plan expired in 2021, however it has not yet been replaced so it will be considered for the purpose of this assessment. The proposed actions cover three main themes:

- Reduce Traffic - for instance by encouraging modal shift from private vehicle use to public transport, cycling and walking.
- Increasing Efficiency - of traffic movement by reducing congestion and stop-start travel to achieve a smoother emission profile and overall lower emissions, which may be particularly significant at peak hours.
- Improve Fleet - by incentivising the replacement of older, more polluting vehicles with newer, smaller, cleaner, lower-emissions vehicles.

Alongside the Air Quality Action Plan, the Greater Manchester Low Emission Strategy²⁰ presents a long-term approach to carbon emissions and air quality in the period up to 2040. The key aims of the strategy are to:

- 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
- Reduce air pollution as a contributor to ill-health in Greater Manchester.

A Clean Air Zone (CAZ) covering Greater Manchester, for which an outline business case²¹ was submitted in March 2019, and planned to launch in 2022 to target the most polluting commercial vehicles including older Heavy Duty Vehicles (HDVs), buses, coaches, taxis and private hire vehicles. However, it was decided on 30th May 2022 that this will no longer go ahead due to significant changes in local air quality and economic issues since the COVID-19 pandemic²².

Furthermore, Transport for Greater Manchester established the Greater Manchester Electric Vehicle (GMEV) Network in 2013. The network offers free electric vehicle charging for a nominal annual fee to help the mass adoption of electric vehicles across the region, playing a central role in improving air quality.

2.9.4 Transport Strategy for Manchester City Centre 2040.

The Transport Strategy for Manchester City Centre²³ adopted in March 2021 sets out the strategy for Manchester to create a well-connected, zero-carbon centre offering residents, workers and visitors a place to live. The Transport Strategy aims to promote residential and commercial developments within the city alongside 'greener' means of transportation. The Proposed Development does not include for any on-site parking but includes capacity for 256 cycle spaces.

2.10 Assessment Guidance.

The primary guidance documents consulted in undertaking this assessment are detailed below.

2.10.1 Defra Local Air Quality Management Technical Guidance.

Defra Local Air Quality Management Technical Guidance (LAQM.TG(22))⁶ was published for use by local authorities in their LAQM review and assessment work. The document provides key guidance in aspects of air quality assessment, including screening, use of monitoring data, and use of background data that are applicable to all air quality assessments.

2.10.2 EPUK-IAQM 'Air Quality Guidance for Planning'.

Environmental Protection UK (EPUK) and the Institute of Air Quality Management (IAQM) have published guidance²⁴ to help ensure that air quality is properly accounted for in the development control process. It clarifies when an air quality assessment should be undertaken, what it should contain, and how impacts should be described and assessed including guidelines for assessing the significance of impacts.

2.10.3 IAQM 'Construction and Demolition Dust Guidance'.

Guidance on the assessment of dust from demolition and construction has been published by the IAQM²⁵. The guidance provides a methodology to determine the dust emission magnitude and provides a series of matrices to determine the risk magnitude of potential dust sources associated with construction activities. This allows for the identification of appropriate mitigation measures that are defined within further IAQM guidance.

2.10.4 Building Bulletin 101: Ventilation, thermal comfort and indoor air quality 2018.

This guidance²⁶ sets out regulations, standards and guidance on ventilation, thermal comfort, and indoor air quality for school buildings. The guidance on indoor air quality states that the location of air intakes must be from unpolluted zones. Moreover, these zones are defined as areas where the ambient air quality meets the WHO (2005) guidelines and any national air quality standards or regulations.

2.10.5 Manchester City Council Air Quality & Planning Technical Guidance.

This technical guidance was published in February 2022²⁷ to inform applicants, developers and air quality consultants of the 'Our Manchester Strategy 2016-2025'. It sets out the relevant local policies and acknowledges the City's current AQMA situation, breaches of AQOs and ambitions to reduce PM_{2.5} concentrations to below the 2005 WHO guidelines by 2030. The guidance also provides best practice recommendations for electric vehicle charging infrastructure.

3. Assessment Methodology.

3.1 Consultation.

The approach to the assessment, as described in section 1.3, was provided to the MCC for review. A response from MCC was received on April 5th, 2023. A copy of the correspondence has been included in Appendix 1.

3.2 Existing Air Quality in the Study Area.

A baseline air quality review was undertaken to determine the existing air quality in the vicinity of the Application Site. This desk-top study was undertaken using the following sources:

- Air quality data for MCC, including a review of the Greater Manchester Combined Authority (GMCA) air quality reports and local monitoring data²⁸;
- The UK Pollutant Release and Transfer Register²⁹;
- Background pollution maps taken from Defra's Local Air Quality Management (LAQM) website³⁰;
- Pollution Inventory from the Environment Agency³¹
- The UK Ambient Air Quality Interactive Map³²;
- Ordnance Survey data and aerial photography from Google Maps.

3.3 Construction Phase Impacts.

3.3.1 Construction Dust Assessment.

The assessment of construction dust impacts has been undertaken in line with the IAQM methodology. Activities on the proposed construction site have been divided into four types to reflect their different potential impacts. These are:

- Demolition;
- Earthworks;
- Construction; and
- Trackout

The risk of dust emissions was assessed for each activity with respect to:

- Potential loss of amenity due to dust soiling; and
- The risk of health effects due to a significant increase in exposure to PM₁₀.

The first stage of the assessment involves screening to determine whether there are any sensitive receptors within the threshold distances defined by the IAQM guidance. A detailed assessment of the impact of dust from construction sites will be required where:

- A 'human receptor' is located within 350 m of the boundary of the Site or within 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the Site entrance;
- An 'ecological receptor' is located within 50 m of the boundary of the Site or within 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the Site entrance.

The magnitude of dust emission for each activity is determined on the basis of the guidance, indicative thresholds, information available relating to the project and expert judgement. The risk of dust effects arising is based upon the relationship between the dust emission magnitude and the sensitivity of the area. The risk of impact is then used to determine the mitigation requirements.

Descriptors for magnitude of impact and impact significance used in this assessment of construction phase dust are given in the guidance²⁵ available online.

3.3.2 Construction Traffic.

3.3.2.1 Construction Traffic Emissions Screening.

A screening assessment has been undertaken with reference to the following EPUK and IAQM guidance indicative criteria:

- a change of Light Duty Vehicle (LDV) flows of more than 500 Annual Average Daily Traffic (AADT) (outside an AQMA);
- a change of Heavy Duty Vehicle (HDV) flows of more than 100 AADT (outside an AQMA);
- a change of LDV flows of more than 100 AADT (within an AQMA); and/or
- a change of HDV flows of more than 25 AADT (within an AQMA).

3.3.2.2 NRMM Emissions Screening.

Non-Road Mobile Machinery (NRMM) refers to mobile machines, transportable industrial equipment or vehicles which are fitted with an internal combustion engine and not intended for transporting goods or passengers on roads. NRMM emissions have been screened following the guidance in Defra's LAQM.TG(22)⁶.

3.4 Operational Phase Impacts.

3.4.1 Road Traffic Impacts.

The screening assessment has been undertaken with reference to the following documents:

- Defra's LAQM.TG(22)⁶; and
- EPUK and IAQM guidance indicative criteria, i.e.:
 - a change of LDV flows of more than 500 AADT (outside an AQMA); and/or
 - a change of HDV flows of more than 100 AADT (outside an AQMA).

Where these criteria are exceeded, a detailed assessment is required, although the guidance advises that "the criteria provided are precautionary and should be treated as indicative", and "it may be appropriate to amend them on the basis of professional judgement".

Where impacts can be screened out there is no need to progress to a more detailed assessment.

3.4.2 Site Suitability Assessment.

A qualitative 'site suitability' assessment has been undertaken to consider the exposure of future occupants, introduced by the Proposed Development, to current air quality.

Site Suitability will be assessed qualitatively using monitoring data from the GMCA Annual Status Report (ASR) 2021³³ and Defra predicted background concentrations³⁰.

3.5 Assessment of Significance.

3.5.1 Construction Phase Impacts.

The IAQM guidance²⁵ on the assessment of dust from demolition and construction states that the primary aim of the risk assessment is to identify site specific mitigation that, once implemented, should ensure that there will be no significant effect. Therefore, the assessment has been used to determine an appropriate level of mitigation for the construction phase.

The determination of which mitigation measures are recommended include elements of professional judgement and the professional experience of the consultants preparing this report is set out in Appendix 2.

3.5.2 Operational Phase Impacts.

The EPUK and IAQM guidance²⁴ has been used to assess the potential for significant impacts as a result of vehicle emissions from traffic associated with the Proposed Development. The focus of the guidance is to assess traffic emission impacts and advises on how to describe the air quality impacts and their significance.

3.5.3 Site Suitability Assessment.

To determine the significance of predicted air quality impacts based upon a site suitability assessment, the EPUK/IAQM guidance states:

“Where the air quality is such that an air quality objective at the building façade is not met, the effect on residents or occupants will be judged as significant, unless provision is made to reduce their exposure by some means.”

“As a member of the WHO Climate and Clean Air Coalition, and UN Environment-led ‘Breathe Life’ cities network, the GMCA including MCC has pledged to achieve the 2005 WHO air quality guideline for PM_{2.5} of 10 µg/m³ (micrograms per cubic metre) by 2030.”

As such, the WHO PM_{2.5} guideline as well as BB101 guidance²⁶, will be taken into consideration when determining Site Suitability.

4. Baseline Environment.

This section sets out the available information on air quality in the vicinity of the Application Site.

4.1 Site Setting.

The Application Site is located within MCC's area of administration at approximate NGR: X 380870, Y 387500.

The Application Site is bound by Clay Lane to the west and residential properties to the north. To the east of the Application Site is residential properties and to the north is the Roundthorn Industrial Estate. Further to the east of the Application Site is the M56.

The Application Site currently comprises the disused Newall Green High School site which closed during August 2021.

4.2 Local Air Quality Management Review and Assessment.

The GMCA have declared an AQMA for exceedances of the annual mean NO₂ AQO which covers Manchester City Centre, the area around Manchester Airport and the main arterial traffic routes into the city. However, the most recent GMCA ASR (2021)³³ states that there has been a gradual improvement in air quality throughout the area. The Application Site is not within this designated AQMA and is approximately 500 m west of the closest section of the AQMA covering M56 North Cheshire Motorway. Figure 2 shows the location of the Application Site in relation to the nearby GMCA AQMA.

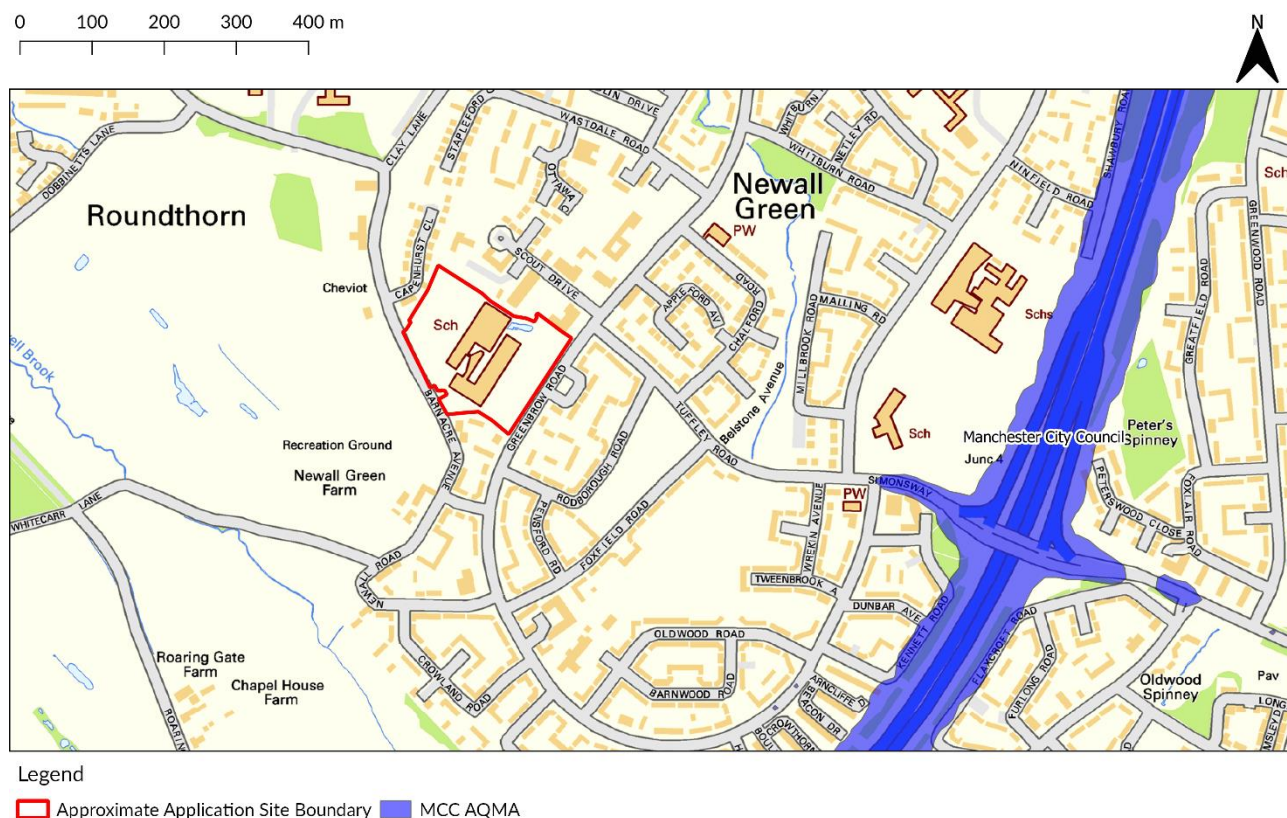


Figure 2: Location of the GMCA AQMA in the context of the Application Site Boundary. Contains OS Data Crown Copyright and Database Rights 2022.

Exceedances of the annual mean NO₂ AQO were still recorded at some of the nearby monitoring locations during 2019, but the 1-hour mean NO₂ concentration AQO was met. Similarly, the respective annual mean AQOs for PM₁₀ and PM_{2.5} have not recorded any exceedances between 2015 and 2020.

Based on the available 2020 monitoring data from the most recent GCMA ASR, released in 2021 during the COVID-19 pandemic, there has been a decrease in pollutant concentrations across monitoring locations within MCC. The reduction in pollutant concentrations during 2020 is directly attributable to reduced traffic levels as a result of Government implemented lockdowns. As such, the pollutant concentrations recorded at monitoring stations in 2020 are not considered to be representative of “normal” air quality conditions. Whilst it is expected that as a result of the COVID-19 pandemic that behaviours will change in the future, the impact of this on air quality long-term is currently unknown and therefore the use of 2020 data has been omitted from this assessment however has been shown in the baseline assessment for information purposes.

4.3 Local Air Quality Monitoring.

There are 20 automatic monitoring stations within the GMCA area, with three operated by MCC. The closest automatic monitoring station is MAHG (Manchester Sharston) located approximately 3.5 km southeast of the Application Site and classed as Suburban. Review of the remaining automatic monitoring stations within the GMCA has shown that the automatic monitoring station STK7 (Stockport Cheadle A34), located within the Stockport Metropolitan Borough Council, is located approximately 4 km northeast from the Application Site and classed as roadside.

Recent monitoring data from the last five years of representative monitoring data for the two automatic monitoring stations within 4 km of the Application Site is detailed in Table 3 and a visual representation of the locations of both automatic monitoring stations with respect to the Application Site is shown in Figure 3.

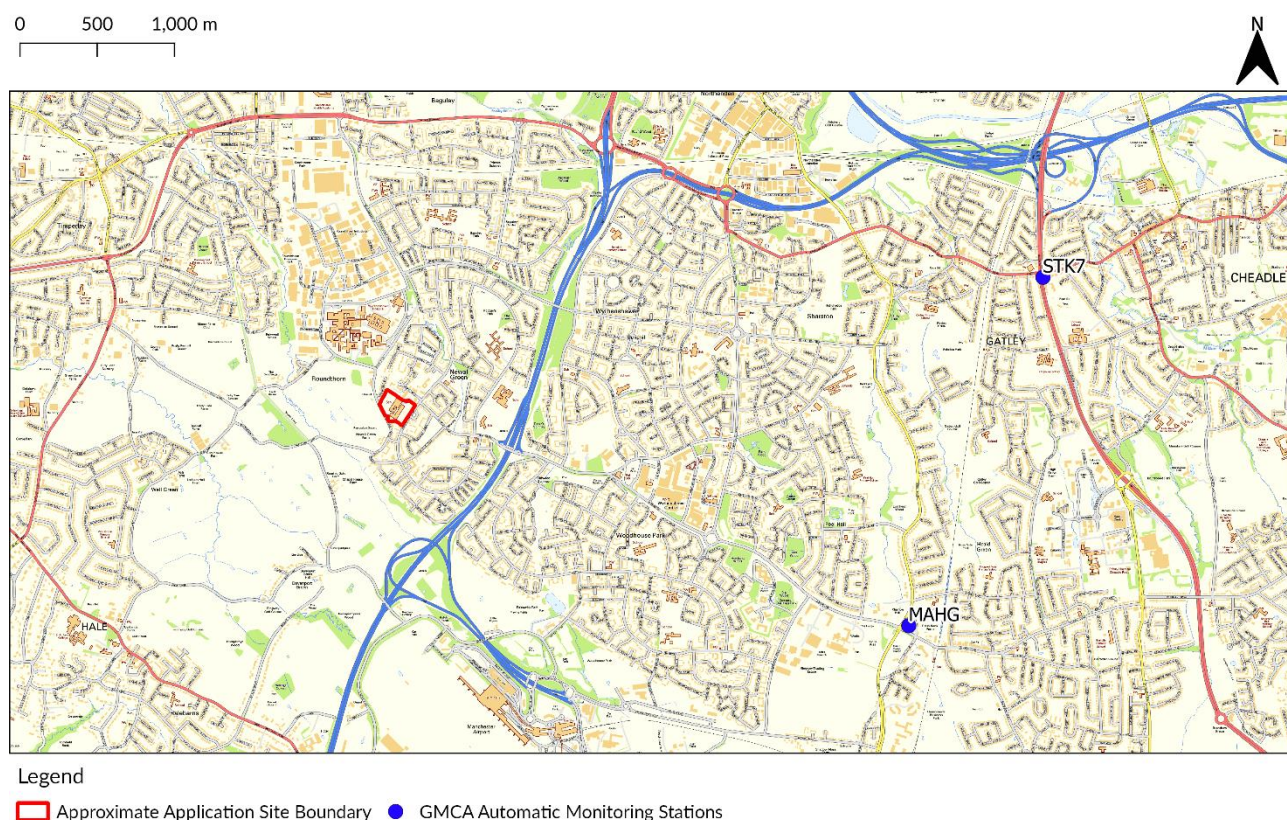


Figure 3: Automatic Monitoring Stations within 4 km of the Application Site. Contains OS Data © Crown Copyright and Database rights 2022.

Table 3: Automatic Monitoring Locations

Monitoring site and distance (km) from site boundary (approx.)	Objective	2015	2016	2017	2018	2019	2020
NO₂							
MAHG, Suburban, Manchester Sharston (3.5 km)	Annual mean (µg/m ³)	n/d	23	24	24	23	14
	Number of hours with concentrations >200 µg/m ³	n/d	0	0	0	0	0
STK7, Roadside, Stockport Cheadle A34 (4 km)	Annual mean (µg/m ³)	n/d	n/d	43	37	36	26
	Number of hours with concentrations >200 µg/m ³	n/d	n/d	0	0	0	0
PM₁₀							
MAHG, Suburban, Manchester Sharston (3.5 km)	Annual mean (µg/m ³)	n/d	13.6	13.4	14.2	14.2	11.9
	Number of days with concentrations > 50 µg/m ³	n/d	0	0	0	3	0
STK7, Roadside, Stockport Cheadle A34 (4 km)	Annual mean (µg/m ³)	n/d	n/d	18	19	17	15
	Number of days with concentrations > 50 µg/m ³	n/d	n/d	0	0	3	0
PM_{2.5}							
MAHG, Suburban, Manchester Sharston (3.5 km)	Annual mean (µg/m ³)	n/d	8.2	7.6	8.1	n/d	n/d
Notes: n/d – no data available Exceedances of the relevant AQO are shown in bold .							

As shown in Table 3, the data at the closest automatic monitoring location, MAHG, has been in compliance with both the annual mean and 1-hour mean NO₂ AQOs from 2015 to 2020. Similarly, it has not recorded any exceedances for both the annual mean and 24-hour mean PM₁₀ AQOs from 2015 to 2020.

MAHG also monitors PM_{2.5} concentrations however, according to the most recent GMCA ASR (2021)³³, there was a failure at the monitoring location during 2019 and 2020, hence no data was captured in these years. MAHG had previously not recorded an exceedance of the annual mean PM_{2.5} AQO from 2016 to 2018. As per the MCC Air Quality & Planning Technical Guidance²⁷, the WHO PM_{2.5} guidelines must be considered. Recorded concentrations of PM_{2.5} at MAHG have not exceeded the WHO guideline of 10 µg/m³ in the years 2016 to 2018.

MCC operates 38 passive diffusion tubes to monitor NO₂ concentrations. A review of the most recent monitoring data available indicated that there are two passive diffusion tube monitoring locations within the vicinity of the Application Site. Recent monitoring results are shown in Table 4 and the passive diffusion tube locations are illustrated in Figure 4.

0 100 200 300 400 m



Legend

 Approximate Application Site Boundary • Passive Diffusion Tube Monitoring Locations

Figure 4: Passive Diffusion Tube Monitoring Locations within 2 km of the Application Site. Contains OS Data © Crown Copyright and Database rights 2022.

Table 4 details the monitoring results for all passive diffusion tube sites for the most recent years available.

Table 4: Passive Diffusion Tube Monitoring Results

Site ID	Site Type	Site Name	Distance (km) from Application Site (approx.)	Annual Mean NO ₂ Concentration (µg/m ³)					
				2015	2016	2017	2018	2019	2020
MA8ANO	Urban Background	St Pauls School	0.5	n/d	32.4	29.2	26.6	28.0	18.2
MA94NO	Roadside	Greenwood Road	1.4	n/d	n/d	n/d	n/d	32.1	25.2

Note:
n/d – no data available

As shown in Table 4 above, there were no recorded exceedances of the annual mean NO₂ AQO from the last five years of available monitoring data. The highest recorded annual mean concentration of NO₂ in 2019, the most recent year of available monitoring data, was recorded at MA94NO as 32.1 µg/m³ which is 80% of the annual mean NO₂ AQO.

An annual mean concentration of 60 µg/m³ or above is often used to indicate a possible exceedance of the 1-hour mean NO₂ AQO. In the last five years of available monitoring data, none of the passive diffusion tube monitoring locations within 2 km of the Application Site have recorded an exceedance of 60 µg/m³ and as such, no exceedance of the 1-hour mean NO₂ AQO is expected.

4.4 Industrial Pollution.

A desk-based review of potential industrial sources using the UK Pollutant Release and Transfer Register²⁹ and the Environment Agency's Pollution Inventory identifies two potential sources of air pollution from industrial or waste management sources. However, none of these sources have significant emissions to air, hence are no likely to impact air quality at the Application Site.

Table 5: Sources of Industrial Pollution within 2 km of the Application Site

Pollution Source	Source Type	Nitrogen oxides (Taken to be NO ₂ +NO), PM, or Volatile Organic Compound release to air since 2015
AMEY LG Limited	Treatment and disposal of non-hazardous waste	None
Unit H2	Treatment and disposal of hazardous waste	None
SE Recycling Ltd	S1515 No 15: Waste of electrical and electronic equipment	None
Portable Battery Recycling Limited	S1515 No 15: Waste of electrical and electronic equipment	None

4.5 Defra Predicted Concentrations.

The background concentrations have been obtained from the national maps published by Defra³⁰. These estimated concentrations are produced on a 1 km by 1 km grid basis for the whole of the UK. The Application Site falls into grid square X 380500 Y 387500 and the predicted concentrations for this grid square for NO₂, PM₁₀ and PM_{2.5} are provided in Table 6 for 2019, the most recent year with available monitoring data, for 2023, the current year, and for 2024, the confirmed opening year for the Proposed Development.

Table 6: Predicted Background Concentrations

Year	Predicted Background Concentration (µg/m ³)		
	NO ₂	PM ₁₀	PM _{2.5}
2019	16.9	11.3	7.6
2023	14.6	10.8	7.2
2024	14.1	10.7	7.2

As shown in Table 6, background concentrations are below the relevant AQOs for all pollutants. Also, background concentrations are well below the WHO guideline for all pollutants.

4.6 Summary of Background Data.

The Application Site is not located within the GMCA AQMA, and it is approximately 600 m northwest at the closest point.

There has been no exceedance of the annual mean NO₂ AQO and no likely indication of an exceedance of the 1-hour mean NO₂ AQO in the last five years of available monitoring data from passive diffusion tube monitoring locations within 2 km of the Application Site.

Annual mean and 24-hour mean PM₁₀ concentrations and annual mean PM_{2.5} concentrations, at all automatic monitoring stations, in the vicinity of the Application Site, were below the respective AQOs. Moreover, the annual mean PM_{2.5} did not exceed the WHO guidelines at MAHG from 2016 to 2018.

There are no sources of industrial air pollution within 2 km of the Application Site that could have an impact on local air quality.

Predicted Defra background concentrations, for pollutants NO₂, PM₁₀ and PM_{2.5}, are below the relevant AQOs and the WHO guideline in 2019, the most recent year with available monitoring data, for 2023, the current year and for 2024 the confirmed opening year for the Proposed Development.

5. Construction Phase Assessment.

The potential for air quality impacts during the construction of the Proposed Development are assessed in this section.

5.1 Construction Phase Dust Assessment.

The risk of dust impacts is based on the potential dust emissions magnitude and the sensitivity of the area. These two factors are then combined to determine the risk of dust impacts with no mitigation applied. In the absence of any site-specific information, a higher risk category has been applied to represent a worst-case scenario.

The construction works of the Proposed Development are split into two phases: Phase 1 comprises of establishment of a temporary school accommodation followed by Phase 2 which comprises demolition and strip out, and construction of the new build (i.e., sports hall and classroom extension).

Phase 1 is anticipated to commence prior to the school summer holidays and as such students are expected to be present on-site. Moreover, Phase 1 will be in operation when Phase 2 works commence. Therefore, on-site sensitive receptors as well as off-site existing sensitive receptors, in the surrounding area of the Application Site, were considered for the assessment of Phases 1 and 2.

Phases 1 and 2 differ in terms of the main access for trackout. During Phase 1, the main access will be via Greenbrow Road which will be shared by contractor and public vehicles. Phase 1 will be in operation during Phase 2 and as such the main access will be via Clay Lane. During Phase 2, vehicles are not advised to exit the site via the north of Clay Lane due to the proximity of Wythenshawe Hospital.

5.1.1 Assessment Screening.

There are 'human receptors' within 350 m of the Application Site but no designated habitat sites within 50 m of the Application 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.

Therefore, an assessment of construction dust on ecological receptors can be screened out from this assessment but an assessment of construction dust at human receptors is required.

5.1.2 Potential Dust Emission Magnitude.

The potential magnitude of dust emissions from demolition, earthworks, construction and trackout have been assessed, as identified in Table 7. When determining the magnitude of dust emissions activities, all phases have been considered to occur simultaneously, as worst-case scenario.

Table 7: Predicted Magnitude of Dust Emissions

Activity	Magnitude	Justification
Demolition	Medium	The proposals include the partial demolition of existing buildings to the north of the main school building. Based on the construction method statement and the phasing plans*, demolition activities are expected to be below 20,000 m ³ . As such, in line with IAQM guidance, the magnitude of dust emissions from demolition works will be small.
Earthworks	Small	Based on the phasing plans*, earthworks activities are likely to be minimal. Some works will require foundations for the temporary school accommodation, sports hall, and classroom extensions. The total area to be affected by earthworks is expected to be less than 2,500 m ² . The soil type is loamy and clayey ³⁴ which is potentially dusty soil type. As such, in line with IAQM guidance, the magnitude of dust emissions from earthworks will be small.
Construction	Small	The proposals include the partial demolition of existing buildings to the north of the main school building and refurbishment and extensions to the main school building. The exact construction volumes for the Application Site are not currently available, but estimates taken from the phasing plans* show that the total volume is likely to be below 25,000 m ³ . It is expected use of typical building materials including concrete, which is potentially dusty.

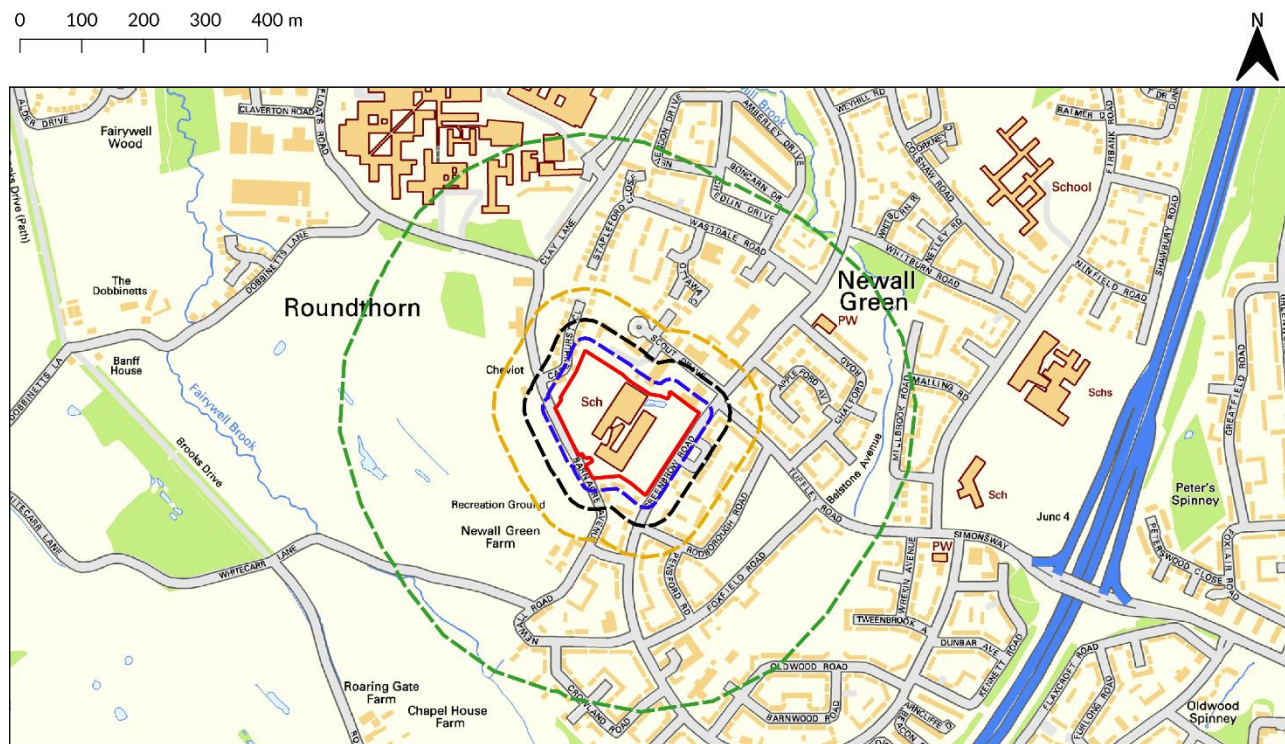
Activity	Magnitude	Justification
		As such, in line with IAQM guidance, the magnitude of dust emissions from construction works will be small.
Trackout	Small	The number of outward HDV movements per day are unknown. However, due to the size and nature of the Application Site and based on an initial review of the surrounding area, using QGIS, there is likely to be no unpaved road lengths within the Application Site Boundary. The soil type, at the Application Site, is loamy and clayey ³⁴ which is a potentially dusty soil type. Therefore, in line with IAQM guidance, the potential magnitude of dust emissions from trackout activities is likely to be small.
*FS0998-MSC-XX-XX-T-MC-2.pdf		

5.1.3 Sensitivity of the Study Area.

The sensitivity of the area takes into account the following factors:

- The specific sensitivities of receptors in the area;
- The proximity and number of those receptors;
- In the case of PM₁₀, the local background concentration; and
- Site-specific factors, such as whether there are natural shelters, such as trees or other vegetation, to reduce the risk of wind-blown dust.

0 100 200 300 400 m



Legend

- Approximate Application Site Boundary
 20 m from site boundary
 100 m from site boundary
 350 m from site boundary
 50 m from site boundary

Figure 5: Distance band criteria from the Application Site Boundary. Contains Ordnance Survey Data © Crown Copyright 2022.

The sensitivity of the area and the factors considered are detailed in Table 8.

Table 8: Sensitivity of the Area

Sensitivity Type	Factors	Sensitivity of Area	
		On – Site Activity	Trackout
Dust Soiling	Students are anticipated to be present on-site during Phase 1 and Phase 2, hence on-site sensitive receptors will be considered in this assessment. These receptors are classed as high sensitivity receptors and as such the sensitivity of the area with respect to dust soiling impacts is considered to be high. There are also further 10-100 residential properties within 50 m of the Application Site. There are 10-100 car park spaces, from the staff at the Wythenshaw Hospital, and a further 10-100 car park spaces at the Newall Green Day Nursery and the Maples Medical Centre, within 350 m of the Application Site, which are low sensitivity and have also been considered. As such, the sensitivity of the area with respect to dust soiling is considered to be high. As explained above, main access for trackout differs in Phase 1 and Phase 2. Moreover, for trackout, the distances are measured from the side of the roads used by construction traffic, up to 50 m from 'Small' sites such as the Application Site. During Phase 1, it is anticipated that there will be between 10-100 residential properties, which are classed as high sensitivity receptors, within 50 m of the surrounding road network. As such, the sensitivity of the area, during Phase 1, is considered to be medium. During Phase 2, it is anticipated that there will be between 1-10 residential properties, classed as high sensitivity receptors, within 50 m of the surrounding road network. As such, the sensitivity of the area, during Phase 2, is considered to be low. Moreover, for the purpose of this assessment, the worst-case sensitivity of the area has been considered, which is during Phase 1.	High	Medium
Human Health	As explained above, on-site receptors are anticipated to be present during Phases 1 and 2, which are considered high sensitivity receptors. As a worst-case scenario, it has been assumed that there will be more than 100 on-site sensitive receptors. However, the annual mean PM₁₀ concentration at the closest automatic monitoring site to the Application Site was 14.2 µg/m³ in 2019, the most recent year with representative monitoring data available, as presented in Table 3. Additionally, the closest suburban automatic monitoring location, MAHG, recorded a concentration for PM₁₀ in 2019, the baseline year, of 14.2 µg/m³. As the PM₁₀ concentrations are less than 24 µg/m³ and as such, the sensitivity of the area, with respect to human health impacts, is considered to be medium. During Phase 1, trackout distances are measured from the side of the roads used by construction traffic, up to 50 m from 'Small' sites such as the Application Site. It is anticipated that there will be between 10-100 residential properties, which are classed as high sensitivity receptors, within 50 m of the surrounding road network. Moreover, during Phase 2, it is anticipated that there will be between 1-10 residential properties, classed as high sensitivity receptors, within 50 m of the surrounding road network. As such, the sensitivity of the area is also considered to be low.	Medium	Low

5.1.4 Risk of Dust Impacts.

The outcomes of the assessments of potential magnitude of dust emissions and the sensitivity of the area are combined to determine the risk of impact. This risk is then used to inform the selection of appropriate mitigation. Table 9 details the risk of dust impacts for demolition, earthworks, construction and trackout activities.

Table 9: Summary of Potential Unmitigated Dust Risks

Potential Impact	Sensitivity	Demolition	Earthworks	Construction	Trackout
Magnitude		Medium	Small	Small	Small
Dust Soiling Impacts	High	Medium Risk	Low Risk	Low Risk	Low Risk
Human Health Impacts	Medium	Medium Risk	Low Risk	Low Risk	Negligible

5.2 Construction Phase – Vehicular Pollutants.

The Application Site is not located within an AQMA and therefore the higher screening criterion (i.e. 500 LDV and 100 HDV) would apply. However, the Application Site is located within 500 m of the MCC's AQMA and therefore the lower screening criterion (i.e. 100 LDV and 25 HDV) would apply for construction traffic routed into the AQMA.

Information on traffic movements anticipated during construction works was unavailable for the completion of the Air Quality Assessment. However, the development quantum is not anticipated to result in a significant increase in movements above the EPUK and IAQM criterion. The duration of movements will be short-term in nature and are not considered further within the context of this assessment. Therefore, in accordance with the criterion presented within EPUK and IAQM guidance, additional road vehicle trips during the construction phase of the Proposed Development "can be considered to have insignificant effects" on air quality.

5.3 Construction Phase – Non-Road Mobile Machinery.

Exhaust emissions of NO_x and fine particulate matter (PM₁₀ and PM_{2.5}) from Non-Road Mobile Machinery (NRMM), associated with construction sites, may have a significant effect on local air quality. Typically, NRMM is associated with construction sites and, therefore there is a potential for NRMM emissions to adversely affect local air quality as a result of the Proposed Development.

LAQM.TG(22)⁶ guidance states that, with the application of suitable control measures and site management, exhaust emissions from on-site NRMM are "unlikely to make a significant impact on local air quality. In the vast majority of cases, they will not need to be quantitatively assessed".

6. Operational Phase Assessment.

The potential for air quality impacts during the operation of the Proposed Development are assessed in this section.

6.1 Road Traffic Emissions Screening Assessment.

Initial traffic information has been provided by Flinders Chase, the appointed Traffic Consultants for the project. It is noted that there will not be any additional traffic generated by the Proposed Development, compared to the former Newall Green High School. Since the former Newall Green High School closed in 2021, traffic from the former school is already included within the baseline data which considers 2019 as the most recent representative baseline year.

As there is no change in traffic generated by the Proposed Development, there is not expected to be any significant changes in baseline air quality. As such, additional road traffic is below the indicative criteria in the EPUK and IAQM guidance of a change of more than 500 AADT LDV and/or 100 AADT HDV and therefore the potential impact of additional road traffic on local air quality is considered insignificant and a detailed assessment of the trip generation is not required.

6.2 Site Suitability.

This section presents a review of MCC monitoring data in the vicinity of the Application Site, for the purpose of identifying the suitability of the Application Site for school use and identify any requirements for potential mitigation to be embedded into the Proposed Developments design.

As presented in section 2 in line with LAQM.TG(22)⁶, Part F of the Building Regulations (2021)¹² and BB101 guideline²⁶, the annual mean, 24-hour mean and 1-hour mean objectives apply to the Proposed Development due to its proposed use as a school. As such, this section considers the predicted annual mean, 24-hour mean, and 1-hour mean NO₂ concentrations at the Application Site.

6.2.1 Annual mean NO₂ concentrations.

The closest suburban automatic monitoring station to the Application Site is MAHG which is located approximately 3 km east of the M56. This automatic monitoring station is likely to represent background pollutant concentrations due to it being setback from motorway. MAHG did not record any exceedance of the annual mean NO₂ AQO in the last five years of representative monitoring data.

Moreover, STK7, the closest roadside automatic monitoring station to the Application Site, is located within 2 m from the A34. Due to the high traffic on the A34 and STK7 being located closer to the nearest road than the Application site, STK7 is likely to represent a worst-case of recorded concentrations. Annual mean NO₂ concentrations at this monitoring station have recorded annual mean NO₂ concentrations below the AQO in 2019, the most recent year with representative monitoring data available.

The closest roadside passive diffusion tube monitoring location, MA94NO, is located approximately 1.4 km northeast of the Application Site. MA94NO is located within 40 m from the M56 whilst the Application Site is approximately 600 m from the M56. Therefore, due to the setback distance, concentrations at the Application Site are expected to be lower than recorded concentrations at MA94NO. In 2019, MA94NO recorded an annual mean NO₂ concentrations of 32.1 µg/m³ which equates to 80% of the AQO.

Moreover, the Defra predicted background NO₂ concentration at the Application Site are below the annual mean NO₂ AQO in the baseline year, 2019, current year, 2023, and in 2024, the opening year for the Proposed Development. As there have been no exceedances of the annual mean NO₂ AQO in the most recent representative monitoring year at worst case monitoring locations; NO₂ concentrations at the Application Site are considered to be below the annual mean NO₂ AQO (in line with Part F of the Building Regulations (2021)¹² and with BB101 guidance²⁶) and the Application Site is considered suitable for school use without mitigation.

6.2.2 1-hour NO₂ Concentrations.

As outlined in the preceding section, monitoring data from STK7 represents a worst-case scenario. There were no recorded exceedances of the 1-hour mean NO₂ AQO in recent years at STK7. Moreover, MAHG did not record any exceedance of the 1-hour mean NO₂ AQO in the last five years of representative monitoring data. Since it is expected that pollutant concentrations recorded at MAHG are a better representation of concentrations at the Proposed Development, exceedance of the 1-hour mean NO₂ AQO are not anticipated at the Proposed Development.

Therefore, NO₂ concentrations at the Proposed Development are considered to be below the 1-hour mean NO₂ AQO and the Application Site is considered suitable for school use without mitigation.

6.2.3 PM₁₀ and PM_{2.5} Concentrations.

A review of the annual mean PM₁₀ and PM_{2.5} concentrations monitored within 4 km of the Application Site has been completed as part of the baseline review with recent monitoring results, presented in Table 3.

At MAHG, the closest automatic monitoring station shown within Table 3, that monitors PM₁₀ and PM_{2.5}, there has been no exceedance of the annual mean AQOs, or the WHO guideline, for PM₁₀ and PM_{2.5} in the last five years of representative monitoring data. Also, no exceedances of the 24-hour mean AQO for PM₁₀ have been recorded between 2015 and 2019.

As shown in Table 6 the Defra predicted background concentration for both PM₁₀ and PM_{2.5} concentrations at the Application Site are below the annual mean and 24-hour mean AQOs PM₁₀ or the annual mean AQOs for PM_{2.5} in the following years; 2019, 2023 and 2024.

Therefore, both PM₁₀ and PM_{2.5} concentrations in the vicinity of the Application Site are considered to be below their respective annual mean AQOs (in line with Part F of the Building Regulations (2021)¹² and with the BB101 guidance²⁶) and the Application Site is considered suitable for the proposed school use without the need for additional mitigation measures.

6.2.4 Significance of Air Quality Impacts.

To determine the significance of predicted air quality impacts based upon a site-suitability assessment, such as that undertaken as part of this assessment, the EPUK & IAQM guidance states:

“Where the air quality is such that an air quality objective at the building façade is not met, the effect on residents or occupants will be judged as significant, unless provision is made to reduce their exposure by some means.”

With regards to the Proposed Development, the unmitigated impact significance associated with the Proposed Development has been predicted in accordance with the stated assessment methodology. The following factors have been considered when providing justification:

- The Proposed Development will not introduce any new receptor into an area of exceedance of the annual or 1-hour mean NO₂ AQO based upon a review of NO₂ monitoring data and Defra predicted background concentrations within the development locale;
- The Proposed Development will not introduce any new receptor exposure into an area of exceedance of the annual mean PM₁₀ AQO based upon a review of PM₁₀ monitoring data and Defra predicted background concentrations within the development locale; and
- The Proposed Development will not introduce any new receptor exposure into an area of exceedance of the annual mean PM_{2.5} AQO based upon a review of PM_{2.5} monitoring data and Defra predicted background concentrations within the development locale.

As no exceedances of the considered AQOs are predicted, mitigation measures are not required for the operational phase of the Proposed Development. As such, the overall effect is considered to be ‘not significant’.

7. Mitigation.

7.1 Construction Phase.

To mitigate the potential impacts during the construction phases (i.e., Phase 1 and Phase 2) it is recommended that mitigation measures as detailed in the IAQM guidance are implemented. These mitigation measures have been carefully selected for the Proposed Development and are based upon the dust risk categories outlined in the guidance²⁵.

It is recommended that the local authority approve a Dust Management Plan (DMP) prior to works commencing on site, and that this is implemented using an appropriately worded planning condition. Table 10 below details the measures that should be incorporated in the DMP. For general mitigation measures, which excludes those specifically targeted towards demolition, earthworks, construction and trackout (which are given towards the end of the table), medium risk measures have been applied as these represent the highest risk category determined in Table 9. This approach is consistent with the IAQM guidance.

Table 10: Mitigation Measures

Issue	Mitigation Measure
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.
Dust Management Plan	Develop and implement a Dust Management Plan (DMP), which may include measures to control emissions, approved by the Local Authority. The DMP may include monitoring of dust deposition, dust flux, real-time PM ₁₀ continuous monitoring and/or visual inspections.
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	Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the Local Authority when asked. This should include regular dust soiling check of surfaces such as street furniture, cars, window sills within 100 m of the site boundary, with cleaning to be provided if necessary.
	Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the Local Authority when asked.
	Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.
	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 is a large site, before work on a phase commences.
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.

Issue	Mitigation Measure
	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 cover as described below.
	Cover, seed or fence stockpiles to prevent wind whipping.
Operating vehicles/machinery and sustainable travel	Ensure all vehicles switch off engines when stationary – no idling vehicles.
	Avoid the use of diesel or petrol-powered generators and use mains electricity or battery powered equipment where practicable.
	Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the Local Authority, where applicable).
	Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.
	Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking and car-sharing).
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/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.
	Use enclosed chutes and conveyors and covered skips.
	Minimize 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 and burning of waste materials.
Demolition	Soft strip inside building before demolition.
	Ensure effective water suppression is used during demolition activities.
	Avoid explosive blasting, using appropriate manual or mechanical alternatives.
	Bag and remove any biological debris before demolition.
Earthworks	Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.
	Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.

Issue	Mitigation Measure
	Only remove the cover in small areas during work and not all at once.
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, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.
	Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.
	For smaller supplies of fine powder materials, ensure bags are sealed after use and stored appropriately to prevent dust.
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 in continuous 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 haul 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 site exit, wherever site size and layout permits.
	Access gates to be located at least 10 m from receptors where possible.

Potential dust effects during the construction phase are considered to be both temporary and short-term in nature. The impacts are determined to be 'temporary' as they will only potentially occur throughout the construction phase and 'short term' because these will only arise at particular times when certain activities and meteorological conditions combine to create the predicted level. Notwithstanding this, with the application of the above dust control and mitigation measures, it is considered that residual effect at all receptors will be 'not significant' in accordance with the IAQM guidance.

7.1.1 Construction Phase Road Traffic Emissions.

The need for further assessment of the potential air quality impacts associated with construction phase road traffic emissions, principally HDV movements, have been screened out as they are considered to have an insignificant effect on air quality and mitigation measures are not required.

7.1.2 Construction Phase NRMM Emissions.

In accordance with Part 4 of the IAQM Control of Dust and Emissions guidance, all NRMM would need to adhere to the emissions standards for NO₂ and PM₁₀ set out for NRMM. It is therefore considered the likely effects of construction plant on local air quality would be insignificant.

7.2 Operational Phase.

7.2.1 Road Traffic Emissions.

Potential air quality impacts associated with operational phase development trips have been screened out from further assessment as ‘the impacts [on air quality from operational phase movements] can be considered to have insignificant effects’ in accordance with the EPUK and IAQM guidance²⁴. Therefore, further mitigation measures are not considered to be required.

Although not required based on the outcomes of this assessment, mitigation measures in the form of Electric Vehicle (EV) charging points have been included within the main car park of the Proposed Development, in line with the MCC’s Air Quality and Planning Guidance²⁷. The main car park will comprise 69 parking spaces including 14 EV charging points.

7.2.2 Baseline Site Suitability Review.

A review of MCC monitoring data in the vicinity of the Application Site, and mapped concentrations by Defra in the locale of the Application Site, indicates no likely exceedance of the annual and 1-hour mean NO₂, the annual and 24-hour mean PM₁₀ or the annual mean PM_{2.5} AQOs.

Moreover, monitoring data shows that the annual mean PM_{2.5} concentrations are below the WHO guideline at the Application Site, which complies with Part F of the Building Regulations (2021)¹² and with BB101 guidance²⁶, as in line with the MCC Air Quality & Planning Technical Guidance²⁷.

As no exceedances of any considered AQOs are predicted, this follows the 1st hierarchy principle of the IAQM guidance to ‘prevent and avoid’ exposure³⁵. Therefore, no embedded mitigation into the Proposed Development design is required and natural ventilation is possible from an air quality perspective.

8. Summary and Conclusions.

This report details the potential air quality impacts associated with the construction and operation of the for a proposed school development on the site of the former Newall Green High School, Greenbrow Road, Manchester, M23 2SX.

The findings of the assessment are as follows:

- The baseline assessment has shown that the Application Site is not located within an AQMA. However, it is located approximately 500 m to the west of the MCC's AQMA. All automatic monitoring locations have not recorded exceedances of respective AQOs for NO₂ in 2019. No exceedances of the respective AQOs for PM₁₀ and PM_{2.5} have been recorded in 2019. Defra predicted background concentrations, in the Application Site locale, are below the relevant AQOs for all pollutants;
- A qualitative assessment of the potential dust impacts during the construction of the Proposed Development has been undertaken. Through good practice and implementation of appropriate mitigation measures, it is expected that the release of dust would be effectively controlled and mitigated, with resulting impacts considered to be 'not significant'. All dust impacts are considered to be temporary and short-term in nature;
- Initial traffic information has been provided by Flinders Chase, the appointed Traffic Consultants for the project. It is noted that there will not be any additional traffic generated by the Proposed Development, compared to the former Newall Green High School which closed in 2021. Since traffic from the former school is included within the baseline data, which considers 2019 as the most recent representative baseline year, there is not expected to be any significant changes in baseline air quality. Additional road traffic is below the screening criteria and as such, in line with the EPUK and IAQM guidance, the impact of additional traffic on local air quality is considered insignificant and a detailed assessment of the trip generation is not required;
- The proposed energy strategy is all electric, utilising zero emissions technologies such as ASHPs. As no combustion sources are proposed for the primary energy supply, no local air quality impacts are anticipated and a detailed assessment of impacts of combustion emissions, from the energy plant, has been screened out of this assessment; and,
- A qualitative site suitability assessment review has been undertaken to assess the suitability of the Application Site for the proposed school use. Based on the assessment results, there will be no likely exceedances of the annual mean, 24-hour and 1-hour mean NO₂, PM₁₀ and PM_{2.5} AQOs at the Proposed Development. Moreover, monitoring data show that relevant pollutant concentrations are below their respective WHO guideline at the Proposed Development (in line with Part F of the Building Regulations (2021)¹² and with BB101 guidance²⁶). Therefore, the Application Site is considered suitable for the Proposed Development without the inclusion of mitigation.

Based on the information above, it is considered that air quality should not be viewed as a constraint to planning and the Proposed Development conforms to the principles of NPPF and the MCC Core Strategy Development Plan.

9. Glossary of Terms.

AADT	Annual Average Daily Traffic
AQMA	Air Quality Management Area
AQAL	Air Quality Assessment Level
AQO	Air Quality Objective
Defra	Department for Environment, Food and Rural Affairs
DMP	Dust Management Plan
EPUK	Environmental Protection UK
GMCA	Greater Manchester Combined Authority
HDV	Heavy Duty Vehicles (> 3.5 tonnes gross vehicle weight)
IAQM	Institute of Air Quality Management
LAQM	Local Air Quality Management
LDV	Light Duty Vehicles ($\leq$ 3.5 tonnes gross vehicle weight)
MCC	Manchester City Council
$\mu\text{g}/\text{m}^3$	Micrograms per cubic metre
NO_2	Nitrogen dioxide
NO_x	Nitrogen oxides (taken to be $\text{NO}_2 + \text{NO}$)
NPPF	National Planning Policy Framework
NRMM	Non-Road Mobile Machinery
Objectives	A nationally defined set of health-based concentrations for nine pollutants, seven of which are incorporated in Regulations, setting out the extent to which the standards should be achieved by a defined date. There are also vegetation-based objectives for sulphur dioxide and nitrogen oxides
PM_{10}	Particulate matter with an aerodynamic diameter less than 10 micrometres
$\text{PM}_{2.5}$	Particulate matter with an aerodynamic diameter less than 2.5 micrometres
PPG	Planning Practice Guidance
Standards	A nationally defined set of concentrations for nine pollutants below which health effects do not occur or are minimal
Trackout	The process involving the transport of dust and dirt from the construction / demolition site onto the public road network, where it may be deposited and then re-suspended by vehicles using the network. This arises when heavy duty vehicles (HDVs) leave the construction / demolition site with dusty materials, which may then spill onto the road, and/or when HDVs transfer dust and dirt onto the road having travelled over muddy ground on site

References.

- ¹ The Stationery Office (1995) The Environment Act 1995 (Part IV), London
- ² Defra (2007) The Air Quality Strategy for England, Scotland, Wales and Northern Ireland – [online], (Last accessed: 06/03/2023), Available at: www.gov.uk/government/publications/the-air-quality-strategy-for-england-scotland-wales-and-northern-ireland-volume-1
- ³ The Stationery Office (2000) Statutory Instrument 2000, No 928, The Air Quality (England) Regulations 2000, London
- ⁴ The Stationery Office (2002) Statutory Instrument 2002, No 3043, The Air Quality (England) (Amendment) Regulations 2002, London
- ⁵ Department for Environment, Food & Rural Affairs (2023) Environmental Improvement Plan 2023 – [online], (Last accessed: 06/03/2023), Available at: <https://www.gov.uk/government/publications/environmental-improvement-plan>
- ⁶ Defra (2022) Local Air Quality Management Technical Guidance (TG22) – [online], (Last accessed: 21/03/2023), Available at: <https://laqm.defra.gov.uk/wp-content/uploads/2022/08/LAQM-TG22-August-22-v1.0.pdf/>
- ⁷ The Stationery Office (2010) Statutory Instrument 2010, No 1001, The Air Quality Standards Regulations 2010, London
- ⁸ The Stationery Office (2016) Statutory Instrument 2016, No 1184, The Air Quality Standards (Amendment) Regulations 2016, London
- ⁹ WHO (2005) Air Quality Guidelines – [online], (Last accessed: 06/03/2023), Available: https://apps.who.int/iris/bitstream/handle/10665/69477/WHO_SDE_PHE_OEH_06.02_eng.pdf;jsessionid=66E22FDBE284CBF2CA8161756C3FF958?sequence=1
- ¹⁰ World Health Organisation (2021) WHO Global Air quality guidelines – [online], (Last accessed: 06/03/2023), Available at: <https://apps.who.int/iris/bitstream/handle/10665/345329/9789240034228-eng.pdf;sequence=1&isAllowed=y>
- ¹¹ The Stationery Office (2021) Statutory Instrument 2021, The Environment Act 2021, London
- ¹² HMSO (2021). The Building Regulations 2021. Approved Document Part F: Ventilation
- ¹³ Defra (2019) The Clean Air Strategy – [online], (Last accessed: 06/03/2023), Available at: www.gov.uk/government/publications/clean-air-strategy-2019
- ¹⁴ Ministry of Housing, Communities & Local Government (2021) National Planning Policy Framework, Department for Communities and Local Governments, London
- ¹⁵ Ministry of Housing, Communities & Local Government (2019) Planning Practice Guidance, London
- ¹⁶ Manchester City Council (2012) Core Strategy Development Plan Document – [online], (Last accessed 06/03/2023). Available at: https://www.manchester.gov.uk/downloads/download/5672/core_strategy
- ¹⁷ Manchester City Council – City Centre Small Area Policies Map – [online], (Last accessed: 06/03/2023). Available at: https://secure.manchester.gov.uk/downloads/download/4975/extant_udp_policies
- ¹⁸ Manchester City Council – Extant Unitary Development Policies, Part 1 – Environmental Improvement and Protection – [online], (Last accessed: 06/03/2023). Available at: https://secure.manchester.gov.uk/downloads/download/4975/extant_udp_policies
- ¹⁹ Greater Manchester Combined Authority, Transport for Greater Manchester (2016) Greater Manchester Air Quality Action Plan 2016-2021 – [online], (Last accessed: 06/03/2023). Available at: https://www.manchester.gov.uk/downloads/download/4166/air_quality_reports
- ²⁰ Greater Manchester Combined Authority, Transport for Greater Manchester (2016) Greater Manchester Low-Emission Strategy – [online], (Last accessed: 06/03/2023), Available: greatermanchester-ca.gov.uk/media/1276/low-emission-strategy-dec-2016.pdf
- ²¹ Transport for Greater Manchester (2019) Greater Manchester's Outline Business Case to tackle Nitrogen Dioxide Exceedances at the Roadside – [online], (Last accessed: 06/03/2023), Available: assets.ctfassets.net/gwn52pjrtij/1UTXtx1sZoj9ecwPzmKVCG/97077e8c2d4e1df2bbe0c7cd48388fbc/CAP_Exec_Summary_FINAL.pdf
- ²² Clean Air Greater Manchester (2022) Next Steps for Greater Manchester Clean Air Plan – [online], (Last accessed: 06/03/2023), Available at: <https://cleanairgm.com/>
- ²³ Manchester City Council (2021) City Centre Transport Strategy to 2040 – [online], (Last Accessed: 31/03/2023), Available at: https://www.manchester.gov.uk/downloads/download/1871/transport_strategy_for_manchester_city_centre
- ²⁴ Environmental Protection UK and Institute of Air Quality Management (2017), Land-Use Planning & Development Control: Planning For Air Quality v1.2 – [online], (Last accessed: 27/03/2023), Available at: iaqm.co.uk/text/guidance/air-quality-planning-guidance.pdf
- ²⁵ Institute of Air Quality Management (2016) Guidance on the assessment of dust from demolition and construction v1.1 – [online], (Last accessed: 27/03/2023), Available at: iaqm.co.uk/text/guidance/construction-dust-2014.pdf
- ²⁶ BB 101: Guidelines on ventilation, thermal comfort, and indoor air quality in schools. August 2018. – [online], (Last Accessed: 30/03/2023), Available at: <https://www.gov.uk/government/publications/building-bulletin-101-ventilation-for-school-buildings>
- ²⁷ Manchester City Council (2022) Air Quality and Planning Guidance – [online], (Last accessed: 30/03/2023), Available at: https://www.manchester.gov.uk/downloads/download/5199/environmental_and_public_protection_information_for_developers
- ²⁸ Greater Manchester Combined Authority, Air Quality Annual Status Report (2021) – [online], (Last Accessed: 30/03/2023), Available at: https://www.manchester.gov.uk/downloads/download/4166/air_quality_reports
- ²⁹ Defra (2014) UK Pollutant Release and Transfer Register – [online], (Last accessed: 27/03/2023), Available at: www.gov.uk/guidance/uk-pollutant-release-and-transfer-register-prtr-data-sets
- ³⁰ Defra (2020) Background Pollution Maps – 2018 – [online], (Last accessed: 27/03/2023), Available at: uk-air.defra.gov.uk/data/laqm-background-maps?year=2018
- ³¹ Environment Agency (2020) Pollution Inventory – [online], (Last accessed: 27/03/2023), Available at: data.gov.uk/dataset/cfd94301-a2f2-48a2-9915-e477ca6d8b7e/pollution-inventory
- ³² Defra (n.d) UK Ambient Air Quality Interactive Map – [online], (Last accessed: 27/03/2023), Available at: uk-air.defra.gov.uk/data/gis-mapping
- ³³ Manchester City Council (2021) Air Quality Annual Status Report – [online], (Last accessed: 21/03/2023), Available at: https://www.manchester.gov.uk/downloads/download/4166/air_quality_reports
- ³⁴ Cranfield Soil and Agrifood Institute Soilsmap map – [online], (Last Accessed: 27/03/2023), Available at: <http://www.landis.org.uk/soilsmap/>
- ³⁵ Institute of Air Quality Management (2018) Mitigation of Development Air Quality Impacts, Version 1.1 – [online], (Last accessed: 27/03/2023), Available at: iaqm.co.uk/text/position_statements/mitigation_of_development.pdf

Appendix 1 - EHO Consultation.

From: Sue Jones <sue.jones@manchester.gov.uk>
Sent: 05 April 2023 07:57
To: Campello, Leticia
Subject: AQ assessment methodology Greenbrow Road

You don't often get email from sue.jones@manchester.gov.uk. [Learn why this is important](#)

Dear Leticia,

Thank you for your proposals the methodology appears fine. You may also want to consider any EVC points for the staff car park, [MCC's AQ Guidance Note](#).

I look forward to receiving the report.

Kind regards

Sue

Sue Jones
Environmental Protection Officer
Environmental Protection
Environmental Health
The Neighbourhoods Directorate
Manchester City Council

email: sue.jones@manchester.gov.uk
website: www.manchester.gov.uk
Telephone 0161 234 1389
Internal: 31389

We are now on Twitter, for latest news and updates follow us [@EnvHealthMcr](#)

This email and any files transmitted with it are confidential and intended solely for the use of the individual or entity to whom they are addressed.
If you have received this email in error, please notify the system manager.
The full text of the Council's email disclaimer is available at: www.manchester.gov.uk/emaildisclaimer.
Your personal data is very important to us. Please refer to our privacy notice at: www.manchester.gov.uk/privacy for further information.

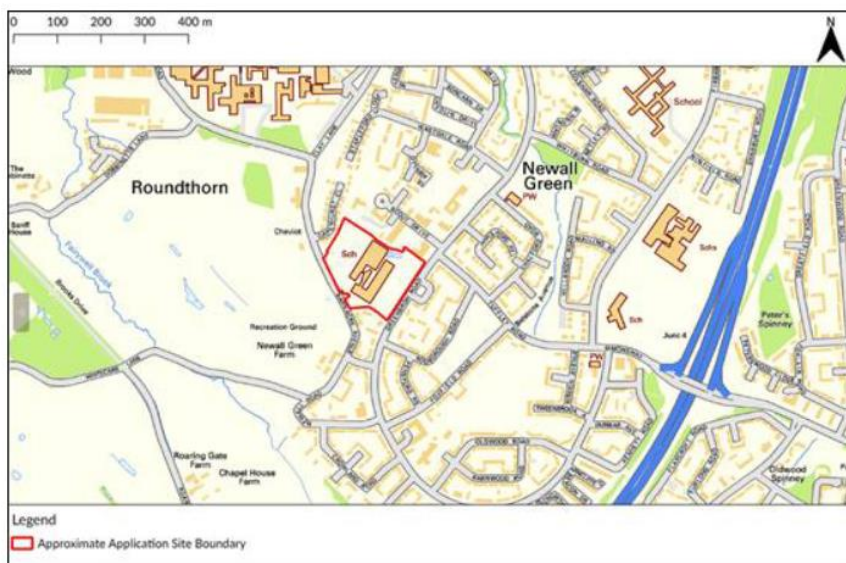
This footnote also confirms that this email message has been swept for the presence of computer viruses.

From: Campello, Leticia
Sent: 30 March 2023 14:57
To: 'envh.licensing@manchester.gov.uk'
Cc: Day, Andy1
Subject: Air Quality Scope of Assessment - Greenbrow Road, Manchester

To whom it may concern,

Hoare Lea have been instructed to undertake an air quality assessment for a proposed school redevelopment at Greenbrow Road, Manchester, M23 2SX.

I have set out our proposed assessment approach below and would invite any comments or local air quality considerations you may have. The site is located at the below location (red outline).



The proposal, on the site of the former Newall Green High School (closed in 2021), comprises the partial demolition of existing building to the north of the main school building and refurbishment and extensions of the main school building, with associated hardstanding and landscape works at the Greenbrow Road, Manchester, M23 2SX.

Hoare Lea propose to undertake the assessment using the following methodology:

- A baseline assessment will be undertaken using data from the Greater Manchester Combined Authority's most recent Annual Status Report (June 2021).
- Defra's predicted background pollution maps will be used to establish background concentrations in the area.
- An assessment of the construction impacts on air quality and dust using the EPUK/IAQM methodology, in compliance with 'The Control of Dust and Emissions During Construction and Demolition', 2014.
- Initial traffic information has been provided by Flinders Chase, the appointed traffic consultants for the project. It is noted that there will not be any additional traffic generated by the Proposed Development, compared to the former Newall Green High School. Since the former high school closed in 2021, traffic from the former school is already included within the baseline data which considers 2019 as the most recent representative baseline year. As there is no change in traffic generated by the school, there is not expected to be any significant changes in baseline air quality. As such, the potential impact of additional road traffic on local air quality is likely to be considered insignificant and a detailed assessment of the trip generation is unlikely to be required.

- The proposed energy strategy for the Proposed Development is for an all-electric approach with no on-site emissions associated with the proposed plant. As such, an assessment of the impact of emissions from the Proposed Developments energy plant has been scoped out in line with the EPUK/IAQM document 'Land-Use Planning & Development Control: Planning for Air Quality' January 2017.
- We propose to assess the suitability of the site qualitatively (without modelling) due to the location of the Application Site being set back approximately 600 m from the nearest main road (M56 North Cheshire Motorway). It is therefore likely that pollutant concentrations will be close to background levels. NO₂, PM₁₀ and PM_{2.5} concentrations will be determined using:
 - Defra predicted background concentrations for the proposed opening year of the Proposed Development.
 - Monitored pollutant concentrations at automatic monitoring locations in the vicinity of the Application Site.
 - Monitored NO₂ concentrations at passive diffusion tube locations in the vicinity of the Application Site.
- The assessment will be undertaken in line with the EPUK and IAQM document 'Land-Use Planning & Development Control: Planning for Air Quality' January 2017.
- Consider the proposed development in line with MCC Air Quality & Planning Technical Guidance, August 2022

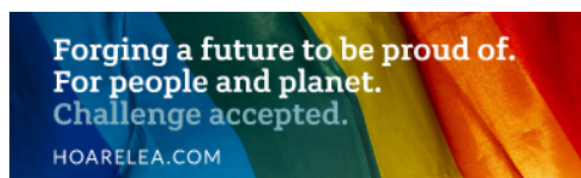
I would be grateful if you could please confirm your acceptance of the proposed methodology and provide me with any comments you may have.

Please do not hesitate to contact me if you would like to discuss anything further.

Kind Regards,

Leticia Campello
Air Quality Consultant

DDI +44 20 3668 7381
Tel +44 20 3668 7100
Email leticia.campello@hoarelealea.com



Appendix 2 - Professional Experience.

Kathryn Woolley (Hoare Lea), BSc (Hons), AMIEnvSc, MIAQM

Kathryn is a Senior Associate of the Air Quality team with Hoare Lea. She is an Associate Member of the Institution of Environmental Sciences and a Full Member of the Institute of Air Quality Management.

She has a diverse portfolio of experience and has worked on a range of projects from initial site feasibility, through planning and development to construction and operation. Kathryn's expertise covers planning, and air quality, specifically in relation to residential developments, industrial fixed installations such as district heating networks. Kathryn has completed over 70 EIAs in the past 9 years throughout the UK and abroad including; St Johns Masterplan in Manchester (residential led), Leicester City Football club training facility north of Leicester (sports use), 1-5 Grosvenor Place, Westminster (mixed use residential, retail and hotel site), and Chestnut Avenue in Eastleigh (residential and community use).

Andy Day (Hoare Lea), BSc (Hons), MSc, AMIEnvSc, AMIAQM

Andy is a Senior Air Quality Consultant with Hoare Lea. He is an Associate member of the Institute of Environmental Sciences and a full Member of the Institute of Air Quality Management. He is a chemistry graduate with a Master's specialising in the catalysed removal of harmful volatile organic compounds (VOCs) often generated from the combustion of fuel in car engines.

Andy has worked on a range of projects of varying size across a number of different sectors. His experience focusses on work up to and through planning for air quality assessments and environmental impact assessments. Andy also has experience in detailed dispersion modelling of road traffic and energy combustion plant, emission mitigation statements, damage cost calculations, indoor and outdoor air quality monitoring and assessing the air quality impact at ecologically sensitive sites.

Andy has a particular interest in reducing emissions for the benefit of human health and the environment through the life cycle of a building.

Leticia Campello (Hoare Lea), BEng (Hons), MSc, AMIEnvSc, AMIAQM

Leticia is an Air Quality Consultant with Hoare Lea. She is an Associate Member of the Institution of Environmental Sciences and an Associate of the Institute of Air Quality Management. She has worked on a range of projects in different sectors including residential, commercial, laboratory and industrial.

Leticia has gained experience in air quality assessments, including detailed assessments of dust, odour, roads, and industrial emissions. Her experience has been focused on preparing air quality assessments to support planning application as well as environmental impact assessments.



KATHRYN WOOLLEY

SENIOR ASSOCIATE

+44 20 3668 7233

kathrynwoolley@hoarelealea.com

HOARELEA.COM

Western Transit Shed
12-13 Stable Street
London
N1C 4AB
England

