



AIR QUALITY ASSESSMENT

on behalf of

SIGNATURE LIVING LTD

for

**VICTORIA MILL, LOWER VICKERS STREET,
MANCHESTER**

REPORT DATE: 5TH MARCH 2019

REPORT NUMBER: 101545-2

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Summary

This air quality report is submitted in relation to a planning application for a residential conversion at Victoria Mill, Lower Vickers Street, Manchester.

This report provides a review of existing air quality in the vicinity of the proposed development. It also provides a simple assessment of the impact of the proposed development on local air quality in accordance with Local Air Quality Management and Technical Guidance

Existing air quality around the development has been reviewed. Concentrations of NO₂ and PM₁₀ are likely to be below their respective long and short-term objectives at the proposed development site which is therefore considered suitable for residential use with regards to air quality.

The impact of the development on local air quality is considered to be insignificant. Vehicle emissions associated with the proposed development are not likely to have a significant impact on local air quality.

Whilst the development is not expected to have a significant impact on air quality, MCC guidance requires that mitigation measures are adopted in line with IAQM/EPUK Guidance. As provision of electric vehicle charging is outside the scope of the planning approval for this development, a full travel plan has been produced for the development.

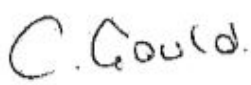
There is, therefore, no reason for this development to be refused on the grounds of air quality.

Prepared By Catherine Gould

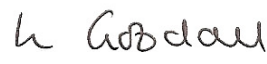
Reviewed By

Lesley Goodall

Signed


28th February 2019

Signed


28th February 2019

Record of changes

Version	Date	Change	Initials
1	1 st June 2017		
2	26 th February 2019	Update to previous report	CG
3	02 nd December 2020	Update to previous report - mitigation	LG

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1 Introduction

- 1.1 This air quality report is an update to our previous report (101545 dated 1st June 2017) in respect of Victoria Mill, Lower Vickers Street, Manchester. This is submitted in relation to condition 17 attached to planning permission granted in 2018 which permitted an amendment to the original scheme in respect of the creation of 5 additional apartments. The site lies within the administrative boundary of Manchester City Council (MCC). The condition states;
- a) The development hereby approved shall be constructed in accordance with the Air Quality Report completed by Miller Goodall Ltd dated 1st June 2017 in relation to the proposed construction methodology.*
- b) Prior to the first occupation of the development hereby approved, further air quality management details outlining the impact of the development and any necessary mitigation measures to be implemented within a timescale to be agreed in writing, shall be submitted to and approved in writing by the City Council as local planning authority. The development shall then be implemented in accordance with any mitigation measures identified within the assessment.*
- 1.2 The report provides a review of the existing air quality in proximity to the proposed development site and assesses the potential impact of the proposed development on local air quality, in accordance with Local Air Quality Management Technical Guidance¹.
- 1.3 Air pollution in urban areas is generally dominated by emissions from road vehicles. The quantity and composition of vehicle emissions is dependent on the type of fuel used, engine type, size and efficiency, vehicle speeds and the type of exhaust emissions abatement equipment employed.
- 1.4 The main pollutants of health concern from road traffic exhaust releases are nitrogen dioxide (NO₂) and fine particulates – normally assessed as the fraction of airborne particles of mean aerodynamic diameter less than ten micrometres (PM₁₀), since these pollutants are most likely to approach their respective air quality objectives in proximity to major roads and in congested areas. This assessment has therefore focused on the impact of the proposed development on concentrations of NO₂ and PM₁₀.

2 Site Description

- 2.1 The site is located approximately 2 km to the east of Manchester city centre. Victoria Mill is situated on a large plot that is largely occupied with car parking. This parking provision serves the existing residential provision in the southern mill block and the NHS functions in the ground floor of the northern mill block.
- 2.2 The Rochdale canal runs along the southern boundary of the site and a child's play park sits to the west of the site. Varley Street runs along the eastern boundary of the site and James Street along the northern boundary.

¹ Department for the Environment Food and Rural Affairs (2018) 'Local Air Quality Management Technical Guidance Document LAQM.TG (16)', London: Defra.

- 2.3 The site is not within an Air Quality Management Area (AQMA). The nearest pocket of AQMA is located along Oldham Road approximately 360m away. The site location and its relationship to the AQMA is shown in **Appendix A**.

3 Proposed Development

- 3.1 The development comprises 80 residential units, increasing by five to a total of 85 with the new permitted development.

4 Policy Context

4.1 Standards and Objectives

- 4.1.1 The standards and objectives relevant to the LAQM framework have been prescribed through the Air Quality (England) Regulations (2000) and the Air Quality (England) (Amendment) Regulations 2002; the Air Quality Standards Regulations 2010 set out the combined Daughter Directive limit values and interim targets for Member State compliance.
- 4.1.2 The current air quality standards and objectives (for the purpose of LAQM) are presented in Table 1. Pollutant standards relate to ambient pollutant concentrations in air, set on the basis of medical and scientific evidence of how each pollutant affects human health. Pollutant objectives, however, incorporate target dates and averaging periods which take into account economic considerations, practicability and technical feasibility.

Table 1: Air Quality Strategy Objectives (England) for the Purposes of Local Air Quality Management

Pollutant	Air Quality Objective		To be Achieved by
	Concentration	Measured As*	
Nitrogen dioxide (NO ₂)	200 µg/m ³	1-hour mean not to be exceeded more than 18 times per year	31/12/2005
	40 µg/m ³	Annual mean	31/12/2005
Particles (PM ₁₀)	50 µg/m ³	24-hour mean not to be exceeded more than 35 per year	31/12/2004
	40 µg/m ³	Annual mean	31/12/2004
Particles (PM _{2.5})	25 µg/m ³	Annual mean (target)	2020
	15% cut in annual mean (urban background exposure)		2010-2020

Note: *how the objectives are to be measured is set out in the UK Air Quality (England) Regulations (2000).

- 4.1.3 Where an air quality objective is unlikely to be met by the relevant deadline, local authorities must designate those areas as AQMAs and take action to work towards meeting the objectives. Following the designation of an AQMA, local authorities are required to develop an Air Quality Action Plan (AQAP) to work towards meeting the objectives and to improve air quality locally.

- 4.1.4 Possible exceedances of air quality objectives are generally assessed in relation to those locations where members of the public are likely to be regularly present and are likely to be exposed for a period of time appropriate to the averaging period of the objective.

4.2 Local Planning Policy

- 4.2.1 Policy EN 16 of Manchester's Local Development Framework Core Strategy states:

"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 development the Council will consider the impacts on air quality, alongside other plan objectives. This includes cumulative impacts, particularly in Air Quality Management Areas."

4.3 Greater Manchester Air Quality Action Plan 2016-2021

- 4.3.1 The Greater Manchester Combined Authority (GMCA) Air Quality Action Plan (AQAP) 2016-2021 provides guidance for all 10 GMCA local authorities on development plans and their relation to defined AQMAs. All 10 local authorities amongst other partners, such as transport, planning and health authorities, will work together to implement the AQAP and aim to meet air quality objectives.
- 4.3.2 To ensure consistency across the region impacts from emissions associated with construction sites including dust and particulates due to site preparation, demolition and construction, and exhaust emissions from non-road mobile machinery and generators or other static plant the Institute of Air Quality Management (2014) (IAQM) Guidance on the Assessment of Dust from Demolition and Construction will be adopted as guidance to be used by all Greater Manchester councils in order to properly assess potential impacts from construction activity and implement appropriate mitigation controls.

The IAQM states;

1.1 Greater Manchester councils to adopt the most recent IAQM Guidance on the Assessment of Dust from Demolition and Construction as current best practice to assess and mitigate emissions from construction sites.

- i. Where a key priority area is affected by a proposed scheme, a high level of mitigation control will be requested*

1.2 GM local authorities will adopt the most recent IAQM/EPUK guidance for air quality assessment as current best practice, to help ensure that planning applications consider potential local air quality impacts and opportunities to improve air quality are realised.

- i. Where a Key Priority Area is significantly adversely affected by a proposed scheme, a high level of mitigation control will be requested.*

- ii. The IAQM/EPUK guidance will also be used to screen and assess industrial sources, such as boilers or large stationary engines.*

GM local authorities are to recommend mitigation controls in accordance with the most recent guidance and the other actions in this document for new developments that contribute to a deterioration of air quality in Air Quality Management Areas (AQMAs). Where the requirement for an air quality assessment is triggered, it should include a review of monitoring data. Where monitoring is not currently undertaken, it may be requested to inform the application or to confirm the effects.

5 Methodology

5.1 Data Sources

- 5.1.1 The air quality assessment of the proposed development was undertaken with reference to information from a number of sources, as detailed in **Table 2**.

Table 2: Key Information Sources

Data Source	Reference
Greater Manchester Combined Authority (GMCA)	GMCA (2017) <i>2016 Air Quality Annual Status Report for Greater Manchester</i>
Greater Manchester Combined Authority (GMCA)	GMCA (2016) <i>Greater Manchester Air Quality Action Plan 2016-2021</i>
Manchester City Council (MCC)	MCC (2012) <i>Manchester's Local Development Framework Core Strategy</i>
Department for Environment Food and Rural Affairs (Defra)	Defra (2018) <i>Local Air Quality Management Technical Guidance TG(16)</i>
Environmental Protection UK (EPUK) and Institute of Air Quality Management (IAQM)	EPUK and IAQM (January 2017) <i>Land Use Planning and Development Control: Planning for Air Quality (v1.2)</i>
Defra's LAQM Support Tools	Local Air Quality Management 1 km x 1 km grid background pollutant maps
Institute of Air Quality Management (IAQM)	IAQM (2014) <i>Assessment of Dust from Demolition and Construction</i>

6 Baseline Air Quality

6.1 Introduction

- 6.1.1 Baseline air quality at the proposed development has been established by examining monitoring data produced by MCC and background concentration maps provided by Defra for the grid squares covering the proposed development.

6.2 Local Authority Air Quality Monitoring

Nitrogen Dioxide (NO₂)

- 6.2.1 MCC does have automatic monitoring sites within its authority. The location of the automatic stations denotes that the results are not representative of conditions at the proposed development because of their distance from the site.
- 6.2.2 MCC undertake diffusion tube monitoring of NO₂ across its authority. There are two diffusion tubes, MAN36, approximately 820m northeast of the site on Rochdale Road, and MAN23, approximately 940m northwest of the site on Oldham Road. The tubes are not deemed representative of the site; both tubes are located on busy roadside locations which the site is not. As such the monitoring results are likely to be may be higher at the tube locations than at the site.
- 6.2.3 The results from the diffusion tubes are shown in **Table 3**; the location of the tubes are shown in **Appendix A**.

Table 3: Annual Mean NO₂ Concentrations Monitored by the LA within the Study Area

Site ID and Type	Location		Annual Mean NO ₂ Concentrations (µg/m ³)		
			2015	2016	2017
MAN36 (Kerbside)	385205	399750	32.75	40.11	34.41
MAN23 (Kerbside)	386459	400090	36.25	-	-
Annual Mean NO ₂ air quality objective			40 µg/m ³		

- 6.2.4 MAN23 has ceased to be in operation with the latest results attained from 2015. The monitoring results in Table 3 indicate that annual mean concentrations of NO₂ were close to the NO₂ annual mean objective at these monitoring locations in 2016 but below that in other years.
- 6.2.5 The results indicate that the short-term objective for NO₂ is unlikely to be exceeded at the monitoring site as annual mean concentrations are less than 60 µgm³ ¹.

Particulate Matter (PM₁₀)

- 6.2.6 MCC undertakes continuous monitoring of PM₁₀, however, the nearest monitoring tubes are on busier roads so exposure is likely to be higher at these locations, therefore, they are unrepresentative of site conditions.

6.3 DEFRA Background Concentrations

- 6.3.1 There are no background monitoring locations in the vicinity of the proposed development site and neighbouring residential areas. Background concentrations of NO₂ and PM₁₀ were therefore obtained from the background concentration maps provided by Defra for the grid squares covering the proposed development². These are shown in **Table 4** below.

² <http://uk-air.defra.gov.uk/data/laqm-background-maps?year=2015>

Table 4: Background Pollutant Concentrations Obtained for the 1km x 1km Grid Squares Covering the Site*

Grid Square	Pollutant	2018	2019	2020
		($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)
386500,399500	NO ₂	21.82	20.76	19.63
	PM ₁₀	16.47	16.38	16.29
385500,399500	NO ₂	22.42	21.25	20.02
	PM ₁₀	13.90	13.79	13.68
386500,398500	NO ₂	20.62	19.63	18.58
	PM ₁₀	13.59	13.49	13.39

* Background concentrations obtained from the latest 2015 based background maps

7 Impact of the Development on Local Air Quality

- 7.1 The transport consultant for the project, DTPC (Northwest) LLP, has confirmed the extant B1 use daily two-way trips and the proposed residential two-way trips. These are shown in **Table 5** below.

Table 5: Daily Two-Way Trips

Building Use	Two Way Daily Trips
Current B1	1287
Proposed Residential	624
Net Difference (Proposed-Current)	-663

- 7.2 **Table 5** shows that the proposed development is expected to produce almost half the number of daily two-way trips than the current use. The impact of the development on local air quality will, therefore, be beneficial as there will be less car movements associated with the development, thus less of an impact at existing sensitive receptor locations.
- 7.3 The impact of the development on local air quality is, therefore, expected to be not significant and is likely to have a beneficial impact.

8 Mitigation

- 8.1 Whilst the development is not expected to have a significant impact on air quality, MCC guidance requires that mitigation measures are adopted in line with IAQM/EUPUK Guidance. The scheme that condition 17 relates to did not propose any works to the car park/access areas so the installation of electric vehicle charging points is understood to be beyond the scope of the planning approval.

- 8.2 However, whilst this development is not expected to generate significant additional traffic, SCP Transportation Planning: Infrastructure Design has produced a full travel plan³ for the development which focuses on journeys to local educational facilities and key local employment areas, along with leisure journeys. The travel plan suggests measures to reduce reliance on single occupancy private vehicle use and to reduce the overall need and distance that residents' travel. Provision is made for cycle storage; all 1 bedroom properties will be provided with a storage shed that can contain fixings for 1 cycle and all 2 bedroom properties will be provided for a storage shed that contains fixings for 2 cycles. These secure storage facilities will be located on the lower ground floor of the building.
- 8.3 The travel plan will be managed by a travel plan coordinator and contains objectives and targets to guide the travel plan, along with a detailed implementation plan which aims to promote sustainable travel through delivery of a number of enabling and assisting measures. Monitoring and marketing measures are also identified, together with time scales for implementation, responsibilities and an indication of the budget required in order to deliver actions.

9 Summary of Impacts and Conclusion

- 9.1 The suitability of the site for residential receptors with regards to air quality was considered. Annual background concentrations of NO₂ and PM₁₀ were predicted to be well below the respective air quality objectives. The monitoring results of the nearby diffusion tubes indicate that annual and short-term concentrations of NO₂ and PM₁₀ would be below the respective objectives.
- 9.2 The traffic associated with this development is not expected to have a significant impact on local air quality when considered in accordance with IAQM Guidance¹. Whilst the development is not expected to have a significant impact on air quality, MCC guidance requires that mitigation measures are adopted in line with IAQM/EUPUK Guidance. In this instance, compliance is achieved through the provision of a full travel plan for the development.
- 9.3 There is, therefore no reason for this application to be refused on the ground of air quality.

³ SCP Transportation Planning: Infrastructure Design (2017) Full Travel Plan Doc Ref: VAL/17317/TP/0

APPENDICES



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Glossary of Terms

AADT Annual Average Daily Traffic flow

Air Quality Standard Pollutant standards relate to ambient pollutant concentrations in air, set on the basis of medical and scientific evidence of how each pollutant affects human health and the environment

Air Quality Objective Pollutant Objectives incorporate future dates by which a standard is to be achieved, taking into account economic considerations, practicability and technical feasibility

Annual Mean A mean pollutant concentration value in air which is calculated on a yearly basis, yielding one annual mean per calendar year. In the UK air quality regulations, the annual mean for a particular substance at a particular location for a particular calendar year is:

- (a) in the case of lead, the mean of the daily levels for that year;
- (b) in the case of nitrogen dioxide, the mean of the hourly means for that year;
- (c) in the case of PM₁₀, the mean of the 24-hour means for that year.

Annoyance (Dust) Loss of amenity due to dust deposition or visible dust plumes, often related to people making complaints, but not necessarily sufficient to be a legal nuisance.

AQAP Air Quality Action Plan

AQEG Air Quality Expert Group

AQMA Air Quality Management Area

AQMP Air Quality Management Plan

AQO Air Quality Objective

AQS Air Quality Strategy for England, Scotland, Wales and Northern Ireland

Background Concentrations The term used to describe pollutant concentrations which exist in the ambient atmosphere, excluding local pollution sources such as roads and stacks

CO Carbon monoxide

Construction Any activity involved with the provision of a new structure (or structures), its modification or refurbishment. A structure will include a residential dwelling, office building, retail outlet, road, etc.

Construction Impact Assessment An assessment of the impacts of demolition, earthworks, construction and trackout. In this Guidance, specifically the air quality impacts.

Defra Department for Environment, Food and Rural Affairs

Demolition Any activity involved with the removal of an existing structure (or structures). This may also be referred to as de-construction, specifically when a building is to be removed a small part at a time.

Deposited Dust that is no longer in the air and which has settled onto a surface. Deposited dust is also sometimes called amenity dust or nuisance dust, with the term nuisance applied in the general sense rather than the specific legal definition.

DMRB Design Manual for Roads and Bridges

DMP Dust Management Plan; a document that describes the site-specific methods to be used to control dust emissions.

Dust Solid particles that are suspended in air, or have settled out onto a surface after having been suspended in air. The terms dust and particulate matter (PM) are often used interchangeably, although in some contexts one term tends to be used in preference to the other. In this guidance the term 'dust' has been used to include the particles that give rise to soiling, and to other human health and ecological effects. Note: this is different to the definition given in BS 6069, where dust refers to particles up to 75 µm in diameter.

Earthworks Covers the processes of soil-stripping, ground-levelling, excavation and landscaping.

Effects The consequences of the changes in airborne concentration and/or dust deposition for a receptor. These might manifest as annoyance due to soiling, increased morbidity or mortality due to exposure to PM₁₀ or PM_{2.5} or plant dieback due to reduced photosynthesis. The term 'significant effect' has a specific meaning in EIA regulations. The opposite is an insignificant effect. In the context of construction impacts any effect will usually be adverse, however, professional judgement is required to determine whether this adverse effect is significant based in the evidence presented.

EPAQS Expert Panel on Air Quality Standards

EPUK Environmental Protection UK

HGV Heavy Goods Vehicle

Impacts The changes in airborne concentrations and/or dust deposition. A scheme can have an 'impact' on airborne dust without having any 'effects', for instance if there are no receptors to experience the impact.

LAQM Local Air Quality Management

LDF Local Development Framework

LGV Light Goods Vehicle

Mg/m³ Microgrammes (of pollutant) per cubic metre of air. A measure of concentration in terms of mass per unit volume. A concentration of 1 µg/m³ means that one cubic metre of air contains one microgramme (millionth of a gramme) of pollutant

NO₂ Nitrogen Dioxide

NO_x A collective term used to represent the mixture of nitrogen oxides in the atmosphere, as nitric oxide (NO) and nitrogen dioxide (NO₂)

NPPF National Planning Policy Framework

Nuisance The term nuisance dust is often used in a general sense when describing amenity dust. However, this term also has specific meanings in environmental law:

Statutory nuisance, as defined in S79(1) of the Environmental Protection Act 1990 (as amended from time to time).

Private nuisance, arising from substantial interference with a person's enjoyment and use of his land.

Public nuisance, arising from an act or omission that obstructs, damages or inconveniences the right of the community.

Each of these applying in so far as the nuisance relates to the unacceptable effects of emissions. It is recognised that a significant loss of amenity may occur at lower levels of emission than would constitute a statutory nuisance.

Note: as nuisance has a specific meaning in environmental law, and to avoid confusion, it is recommended that the term is not used in a more general sense.

PM_{2.5} The fraction of particles with a mean aerodynamic diameter equal to, or less than, 2.5 µm. More strictly, particulate matter which passes through a size selective inlet as defined in the reference method for the sampling and measurement of PM_{2.5}, EN 14907, with a 50% efficiency cut-off at 2.5 µm aerodynamic diameter

PM₁₀ The fraction of particles with a mean aerodynamic diameter equal to, or less than, 10 µm. More strictly, particulate matter which passes through a size selective inlet as defined in the reference method for the sampling and measurement of PM₁₀, EN 12341, with a 50% efficiency cut-off at 10 µm aerodynamic diameter

RSS Regional Spatial Strategy

Running Annual Mean A mean pollutant concentration value in air which is calculated on an hourly basis, yielding one running annual mean per hour. The running annual mean for a particular substance at a particular location for a particular hour is the mean of the hourly levels for that substance at that location for that hour and the preceding 8759 hours

Trackout 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.

