

AIR QUALITY ASSESSMENT

on behalf of

FOUR ARCHITECTS LTD

for

**BRACKEN HOUSE, 44 – 58 CHARLES
STREET, MANCHESTER M1 7BD**

REPORT DATE: 15 APRIL 2024

REPORT NUMBER: 103143

**Miller Goodall Ltd
Ground Floor
Ashworth House
Deakins Business Park
Blackburn Road
Egerton
Bolton
Lancashire
BL7 9RP**

Tel: 01204 596166

www.millergoodall.co.uk

Company registration number 5201673



Summary

This air quality report has been prepared to accompany a planning application for a proposed development at Bracken House, 44 – 58 Charles Street, Manchester M1 7BD. It assesses the suitability of the site for the temporary relocation of the nursery play area.

Concentrations of NO₂ and PM₁₀ are likely to be below their respective short-term objectives at the proposed development site which is therefore considered suitable for its intended use with regards to air quality. Concentrations of PM_{2.5} are expected to be below the annual mean target.

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

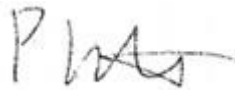
Prepared By Melody Horan

Reviewed By Philip Walton

Signed



Signed



Date

15 April 2024

Date

15 April 2024

Record of changes

Version	Date	Change	Initials
1	15 April 2024	First issue	MH

Contents

Summary

Contents

1 Introduction

2 Site Description

3 Proposed Development

4 Policy Context.....

4.1 Air Quality Objectives

4.2 Manchester City Council Air Quality & Planning Technical Guidance

4.3 Greater Manchester Action Plan 2016–2021.....

5 Methodology

5.1 Data Sources.....

5.2 Simple Air Quality Assessment.....

6 Baseline Air Quality

6.1 Local Air Quality.....

6.2 Air Quality Monitoring.....

6.3 Background Concentrations.....

7 Effect of Air Quality on the Proposed Development

8 Summary of Impacts and Conclusion.....

APPENDICES

Glossary of Terms

1

2

3

3

4

4

4

6

6

8

8

8

9

9

9

12

12

14

15

21

1 Introduction

- 1.1 Miller Goodall Ltd has been instructed to prepare an air quality assessment to accompany a planning application for the temporary relocation of the nursery play area at Bracken House, 44 – 58 Charles Street, Manchester M1 7BD. The site lies within the administrative boundary of Manchester City Council (MCC).
- 1.2 The report provides a review of the existing air quality in proximity to the proposed development site and assesses the suitability of the site for its intended use following Local Air Quality Management Technical Guidance¹.
- 1.3 The temporary relocation of the nursery play area will not impact traffic flows or heating associated with the nursery and there are no demolition or construction activities associated with the development. Therefore, the impact of the temporary relocation of the play area on local air quality is deemed insignificant and has not been included in this assessment.
- 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) and 2.5 micrometres (PM_{2.5}) since these pollutants are most likely to approach their respective air quality objectives in proximity to major roads and congested areas. This assessment has therefore focused on the impact of the proposed development on concentrations of NO₂, PM₁₀ and PM_{2.5}.

2 Site Description

- 2.1 The site is located in Manchester city centre and is currently part of a private car park.
- 2.2 The private car park is located to the north of the site and beyond this is the Manchester Piccadilly to Manchester Deansgate rail line. To the east of the development site is the building which houses the nursery associated with the proposed development, Paint Pots Manchester Day Nursery. Charles Street runs along the southern site boundary with residential apartments located beyond. York Street runs along the western site boundary, beyond which is the Maldron Hotel.

¹ Department for the Environment Food and Rural Affairs (2022). Local Air Quality Management Technical Guidance Document LAQM.TG(22)

- 2.3 The site is located in an Air Quality Management Area (AQMA). The site location and AQMA is shown in **Appendix A**.

3 Proposed Development

- 3.1 The proposed development is for the temporary relocation of the play area associated with Paint Pots Manchester Day Nursery.

4 Policy Context

4.1 Air Quality 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 United Kingdom left the European Union on 31st January 2020 and is no longer a member state. However, the current framework of air quality legislation was converted into domestic law through the European Union (Withdrawal) Act 2018^[2].
- 4.1.3 The relevant air quality standards and objectives 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.

² UK Parliament (2018): <http://www.legislation.gov.uk/ukpga/2018/16/contents/enacted>

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

Pollutant	Air Quality Objective	
	Concentration	Measured As
Nitrogen dioxide (NO ₂)	200 µg/m ³	1-hour mean not to be exceeded more than 18 times per year
	40 µg/m ³	Annual mean
Particles (PM ₁₀)	50 µg/m ³	24-hour mean not to be exceeded more than 35 per year
	40 µg/m ³	Annual mean
Particles (PM _{2.5})	25 µg/m ³	Annual mean (target)

- 4.1.4 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.
- 4.1.5 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.
- 4.1.6 As the development is for the outdoor play area associated with a nursery, the annual mean air quality objectives do not apply; however, the short-term objectives still apply¹.

4.2 Manchester City Council Air Quality & Planning Technical Guidance

4.2.1 MCC has published the Air Quality & Planning Technical Guidance, 2022 ^[3] to assist developers with air quality matters. The Guidance provides a summary of local air quality, the department overseeing air quality matters, local policy, but broadly for air quality it considers three overarching topics:

- Construction & demolition – assessment of dust and particulate matter emissions. The Guidance refers to assessment using the Institute of Air Quality Management ‘Guidance on the assessment of dust from demolition and construction’ 2014. Concerning Non-Road Mobile Machinery (NRMM) emissions, the Guidance specifies *“MCC recommends that NRMM used on the site of any major development within Manchester city centre for the purpose of construction or demolition works should meet Stage IV of EU directive 97/68/EC, and Stage IIIA as a minimum.”*
- Development Planning – assessment of air quality change to existing residents and predictions of air quality concentrations for future receptors. The Guidance refers to an assessment using the Environmental Protection UK ‘Land-use Planning & Development Control: Planning for Air Quality’ 2017.
- Electric vehicle charging – MCC encourages the adoption of electric vehicle charging for developments. Best practice is outlined in Appendix IV of the Guidance. MCC recommend 1 charging point per residential unit with allocated parking and 20% allocation for commercial uses with more than 11 parking spaces. The Guidance continues and specifies the capacities and electric requirements.

4.2.2 The MCC Guidance also specifies guidance for chimney stacks.

4.2.3 However, these topics are not relevant to this assessment. There is no demolition or construction activity, the proposed development is not expected to have an impact on local air quality and there are no parking spaces or chimney stacks associated with the temporary relocation of the nursery play area. The suitability of the site for its intended use has been assessed.

4.3 Greater Manchester Action Plan 2016–2021

4.3.1 The Greater Manchester Combined Authority (GMCA) Air Quality Action Plan 2016–2021 ^[4] provides information in respect of the actions planned by the Greater Manchester Authorities in relation to

³ Manchester City Council, 2022. Air Quality & Planning Technical Guidance

⁴ GMCA (2016) Greater Manchester Air Quality Action Plan 2016–2021

declared AQMAs. Action Plans are the mechanism by which the local authorities, in collaboration with national agencies and others, outline their plans for working towards achieving the air quality objectives through the powers available to them. In relation to managing new development, the action plan states that:

“Action 1.1

Greater Manchester (GM) 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.

Action 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 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 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.”

4.3.2 In January 2019, the joint GMCA & AQMA executive board met for the Greater Manchester Clean Air Plan: Update January 2019. Within the document, it states that Greater Manchester has signed up to become a World Health Organisation (WHO) ‘Breathelife’ city, with the associated aim of achieving WHO air quality targets by 2030. The WHO air quality targets refer to the 2005 Air Quality Guidelines (AQG), not the 2021 AQG. For NO₂ concentrations the WHO 2005 AQG is 40 µg/m³, for PM₁₀ it is 20 µg/m³ and for PM_{2.5} it is 10 µg/m³. It should be noted that the WHO AQGs are not legal requirements.

5 Methodology

5.1 Data Sources

5.1.1 The air quality assessment has been undertaken and prepared with reference to information from several sources, as detailed in **Table 2**.

Table 2: Key Information Sources

Data Source	Reference
Greater Manchester Combined Authority (GMCA)	GMCA (2023) <i>2022 Air Quality Annual Status Report (ASR)</i>
	GMCA (2021) <i>2020 Air Quality Annual Status Report (ASR)</i>
	GMCA (2016) <i>Greater Manchester Air Quality Action Plan 2016–2021</i>
	GMCA Clean Air Greater Manchester (website)
Department for Environment Food and Rural Affairs (Defra)	Defra <i>Local Air Quality Management Technical Guidance TG(22)</i> , updated 2022
Ministry of Housing, Communities & Local Government	Planning Practice Guidance: Air Quality, November 2019
	National Planning Policy Framework (NPPF), December 2023
Defra’s LAQM Support Tools	Local Air Quality Management 1 km x 1 km grid background pollutant maps

5.2 Simple Air Quality Assessment

5.2.1 A simple assessment of air quality in terms of the suitability of the site, which relies on already published information, has been completed using sources such as the Local Authority’s monitoring network and the Defra LAQM support tools.

6 Baseline Air Quality

6.1 Local Air Quality

- 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.
- 6.1.2 Monitoring results for 2016 and 2017 have been obtained from the GMCA (2021) 2020 Air Quality Annual Status Report (ASR) and the results from 2018 to 2022 were obtained from the GMCA (2023) 2022 Air Quality Annual Status Report (ASR).
- 6.1.3 The site is located within an AQMA. The site location and its relationship to the AQMA is shown in **Appendix A**.
- 6.1.4 The Greater Manchester AQMA has been declared based on the outputs of air dispersion modelling conducted in 2016 at a height of 0 m. This modelling work was completed by Transport for Greater Manchester (TfGM). All locations across Greater Manchester that were predicted to be above a NO₂ annual mean of 35 µg/m³ were declared as part of the AQMA. The annual mean objective is 40 µg/m³ and the selection of 35 µg/m³ as the threshold was selected to account for model uncertainty.
- 6.1.5 A screenshot of the TfGM modelling results in the area surrounding the site is shown in **Appendix B**. The TfGM modelling results indicate that the NO₂ annual mean concentrations along Charles Street ranged from 41 µg/m³ to 43 µg/m³ at a height of 0 m at the time of modelling (2016).

6.2 Air Quality Monitoring

Nitrogen Dioxide (NO₂)

- 6.2.1 MCC monitors NO₂ via automatic monitoring stations and diffusion tubes. There are two automatic monitoring stations, Oxford Road and Manchester Piccadilly, and several diffusion tubes within 860 m of the proposed development site. The results from the diffusion tube are shown in **Table 3** and the monitor locations are shown in **Appendix A**.

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

Site ID (Classification)	Location		Annual Mean NO ₂ Concentrations (µg/m³)						
			2016	2017	2018	2019	2020	2021	2022
Oxford Road (Kerbside)	384233	397287	66	65	62	59	36	44	43
Manchester Piccadilly (Urban Centre)	384310	398337	40	36	35	36	27	30	29
MAN72 Lockton Close (Urban background)	384761	397384	40.0	34.6	33.4	32.8	24.5	27.5	26.3
MAN82-MAN 84 Oxford Rd co-located tubes (Roadside)	384239	397276	60.2	56.2	54.0	52.0	33.9	40.7	42.6
MAN59-61 Manchester Piccadilly co-located tubes (Urban background)	384310	398337	40.8	35.7	31.6	33.1	22.3	24.6	25.3
MAN29 (Roadside)	384119	397503	66.2	57.7	58.8	55.4	39.0	44.8	49.8
Annual Mean NO ₂ air quality objective									40 µg/m³

6.2.2 The monitoring results in **Table 3** indicate that annual mean concentrations of NO₂ range from below the annual average air quality objective to well above it depending on proximity to road traffic emissions. The 2020 results show the impact of reduced traffic flows due to Covid-19 lockdowns. In 2021, when lockdown restrictions began to be lifted, concentrations increased at all sites, although did not rise as high as concentrations measured in 2019.

6.2.3 The NO₂ 1-hour mean objective is that the hourly mean of 200 µg/m³ is not to be exceeded more than 18 times per year. The GMCA 2022 Air Quality Annual Status reports provide the number of hours that the 1-hour mean has exceeded 200 µg/m³ at the automatic monitoring stations.

6.2.4 Since 2016, Manchester Piccadilly has only recorded one hour in which the 1-hour mean exceeded 200 µg/m³, which was in 2017. Therefore, since 2016, the short-term objective for NO₂ has not been exceeded at the Manchester Piccadilly automatic monitoring station.

6.2.5 In 2016, the 1-hour mean exceeded 200 µg/m³ 90 times at the Manchester Oxford Road automatic monitoring station. Since 2017, the greatest number of times the 1-hour mean has been exceeded annually at the Manchester Oxford Road automatic monitoring station was six times in 2017. Therefore, since 2017, the short-term objective for NO₂ has not been exceeded at the Manchester Oxford Road automatic monitoring station.

Particulate Matter (PM₁₀ & PM_{2.5})

6.2.6 MCC monitors PM₁₀ at Oxford Road and Manchester Piccadilly automatic monitoring stations. The Manchester Piccadilly automatic monitoring station also monitors PM_{2.5} concentrations. The results from the monitoring stations are shown in **Table 4**, **Table 5** and **Table 6**. The locations of the monitors are shown in **Appendix A**.

Table 4: Annual Mean PM₁₀ Concentrations Monitored by MCC within the Study Area

Site ID & Classification	Location		Annual Mean PM ₁₀ Concentrations (µg/m³)						
			2016	2017	2018	2019	2020	2021	2022
Oxford Road (Kerbside)	384233	397287	27	27	30	26	18	18	18
Manchester Piccadilly (Urban Centre)	384310	398337	20	20	21	20	15	15	17
Annual Mean PM ₁₀ air quality objective								40 µg/m³	

Table 5: 24-Hour Mean PM₁₀ Concentrations Monitored by MCC within the Study Area

Site ID & Classification	Location		Number of 24-Hour Mean PM10 > 50 µg/m³						
			2016	2017	2018	2019	2020	2021	2022
Oxford Road (Kerbside)	384233	397287	16	15	15	18	5	2	8
Manchester Piccadilly (Urban Centre)	384310	398337	3	3	2	7	1	2	4
24-Hour Mean PM10 air quality objective			not to be exceeded more than 35 per year						

Table 6: Annual Mean PM_{2.5} Concentrations Monitored by MCC within the Study Area

Site ID & Classification	Location		Annual Mean PM _{2.5} Concentrations (µg/m³)						
			2016	2017	2018	2019	2020	2021	2022
Manchester Piccadilly (Urban Centre)	384310	398337	10	8	11	12	8	9	10
PM _{2.5} Target Level								25 µg/m³	

6.2.7 The results indicate that since 2016 the PM₁₀ annual mean and 24-hour mean objective have not been exceeded at either automatic monitoring station and the PM_{2.5} concentrations at Manchester Piccadilly are below the PM_{2.5} target level.

6.3 Background Concentrations

- 6.3.1 Manchester Piccadilly and MAN72 are classed as urban background monitoring locations. The annual mean results for these monitoring locations are provided in **Table 3**, **Table 4** and **Table 6**.
- 6.3.2 Background concentrations of NO₂, PM₁₀ and PM_{2.5} obtained from the background concentration maps provided by Defra for the grid squares covering the proposed development⁵ are shown in **Table 7**.

Table 7: Background Pollutant Concentrations Obtained for the 1km x 1km Grid Squares Covering the Site and urban background monitor location, Manchester Piccadilly*

Grid Square	Pollutant	2024
		(µg/m³)
384500, 397500 (Site)	NO ₂	23.13
	PM ₁₀	13.55
	PM _{2.5}	8.55

** Background concentrations obtained from the latest 2018 based background maps*

7 Effect of Air Quality on the Proposed Development

- 7.1 As discussed, due to the development being for the temporary relocation of the nursery play area, the annual mean air quality objectives do not apply to the development itself; however, the short-term objectives still apply¹.
- 7.2 The Manchester Piccadilly to Manchester Deansgate rail line, which is to the north of the development site, is listed as a rail line with a heavy traffic of diesel passenger trains¹. Moving diesel locomotives can contribute to elevated short-term NO₂ and SO₂ concentrations close to the track. As the rail line is more than 30 m from the proposed development site, the effects associated with the rail line are not significant¹.
- 7.3 There is an urban background monitoring location approximately 860 m northeast of the proposed development site which consists of an automatic monitoring station, Manchester Piccadilly, and triplicate NO₂ diffusion tubes. There is also an urban background NO₂ diffusion tube, MAN72, approximately 520 m southeast of the proposed development site. Background concentration maps

⁵ <http://uk-air.defra.gov.uk/data/laqm-background-maps?year=2018>

provided by Defra for the grid squares covering the proposed development have also been reviewed. The background concentrations in **Table 3**, **Table 4**, **Table 6** and **Table 7** show that background concentrations of NO₂, PM₁₀ and PM_{2.5} are well below health-based air quality objectives of 40 µg/m³ for NO₂ and PM₁₀.

- 7.4 The AQMA is declared only on the basis of annual average levels of NO₂, not PM₁₀ concentrations. Therefore, the air quality objectives for particulate matter are not expected to be exceeded within MCC. The monitoring results discussed in **Section 6.2** support this. Monitored concentrations of PM_{2.5} are not expected to exceed the target level.
- 7.5 As discussed in **Section 6.1**, the TfGM 2016 modelling screenshot, provided in **Appendix B**, predicted that the NO₂ annual mean concentrations along Charles Street ranged from 41 µg/m³ to 43 µg/m³. Therefore, the modelling results indicate that the short-term objective for NO₂ was unlikely to be exceeded within the area surrounding the development site as the modelling annual mean concentrations were well below the indicative screening concentration of 60 µg/m³.
- 7.6 MCC monitors NO₂ and PM₁₀ at an automatic monitoring station, Oxford Road, approximately 190 m south of the proposed development site. There are two NO₂ diffusion tube sites, including a triplicate tube monitoring location approximately 200 m south of the proposed development site. These identified roadside and kerbside monitoring sites are located along the B5117, Oxford Street and Oxford Road, which is a busy and congested road. Comparatively, the proposed development site is located on a minor road, approximately 80 m east of the B5117 and 110 m west of the A34. Since 2017, the short-term objective for NO₂ has not been exceeded at the Manchester Oxford Road automatic monitoring station.
- 7.7 There are no monitoring sites representative of the proposed development site. However, the identified monitoring locations indicate air quality in the general area and how it has changed since 2016. The Greater Manchester 2022 Air Quality Status Report states that long-term trends show that there has been an improvement in air quality within Greater Manchester.
- 7.8 The monitoring results in **Section 6.2** corroborate the conclusion within the Greater Manchester 2022 Air Quality Status Report and show that there has been an improvement in air quality within the study area since 2016. Annual average NO₂ concentrations at all of the monitoring sites have fallen by at least 10 µg/m³. Therefore, the NO₂ concentrations at the proposed development site are expected to have improved compared to those predicted in the TfGM model outputs.

- 7.9 The evidence from existing information sources is that the proposed development site is likely to experience levels of NO₂ and PM₁₀ below the short-term objectives for the pollutants and below the annual mean target for PM_{2.5}.

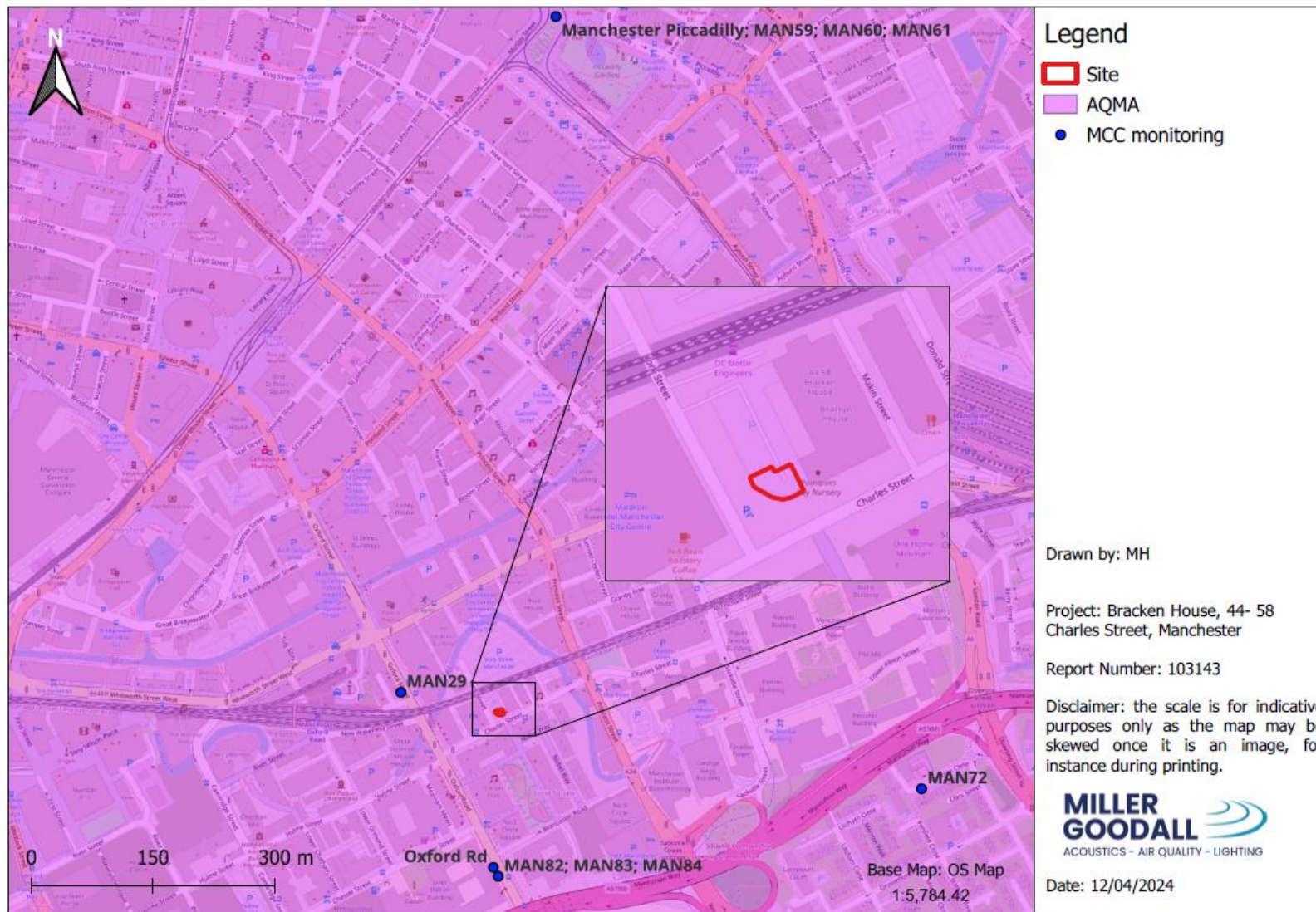
8 Summary of Impacts and Conclusion

- 8.1 This air quality report assesses the suitability of the site for the temporary relocation of the nursery play area.
- 8.2 Concentrations of NO₂ and PM₁₀ are likely to be below their respective short-term objectives at the proposed development site which is therefore considered suitable for its intended use with regards to air quality. Concentrations of PM_{2.5} are expected to be below the annual mean target.
- 8.3 There is, therefore, no reason for this application to be refused on the grounds of air quality.

APPENDICES

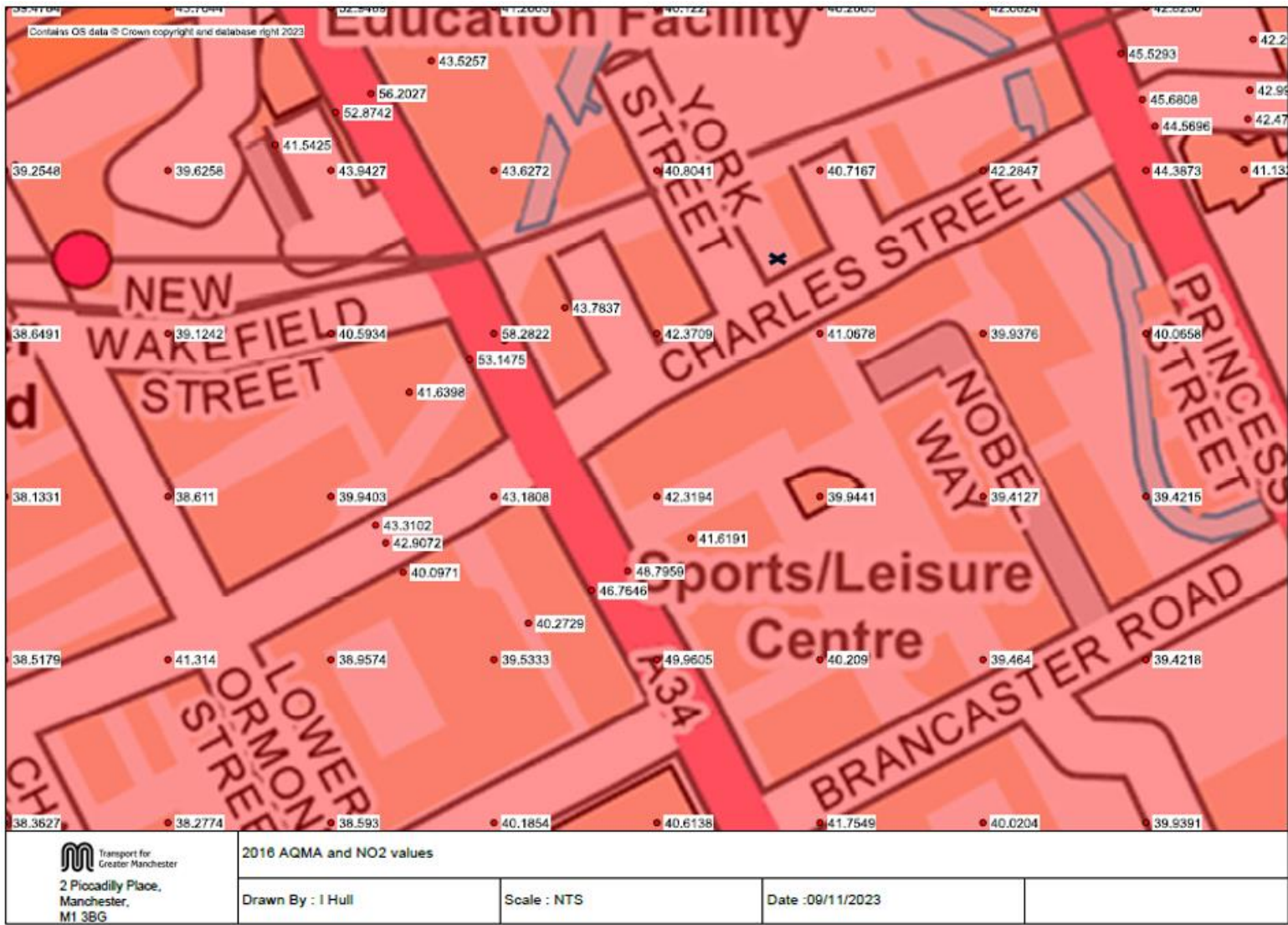
This page is left blank intentionally

Appendix A: Location of site, AQMA and MCC monitoring



This page is left blank intentionally

Appendix B: TfGM 2016 modelling screenshot (location of the site marked with a 'X')



This page is left blank intentionally

Glossary of Terms

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.

AQAP Air Quality Action Plan

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

Defra Department for Environment, Food and Rural Affairs

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.

EPUK Environmental Protection UK

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

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

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

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

