

ADVISORY

Wilson Bowden Developments Ltd
Plot Q, Kingsway Business Park
Rochdale
Indoor Air Quality Plan

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Rochdale
Indoor Air Quality Plan

Birmingham
Livery Place, 35 Livery Street, Colmore Business District
Birmingham, B3 2PB
T: 0121 233 3322

Leeds
Whitehall Waterfront, 2 Riverside Way
Leeds, LS1 4EH
T: 0113 233 8000

London
11 Borough High Street
London, SE1 9SE
T: 0207 407 3879

Manchester
11 Portland Street
Manchester, M1 3HU
T: 0161 233 4260

Nottingham
5th Floor, Waterfront House, Station Street
Nottingham, NG2 3DQ
T: 0115 924 1100

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P01	December 2025	S2	H. Lillis MSc, BSc (Hons), AMIAQM, AMIEEnvSc	A. Goodhand MSc, BSc (Hons), MIAQM, MIEEnvSc PISEP, CSci	D. Harvey BEng (Hons)
P02	January 2026	S2	H. Lillis MSc, BSc (Hons), AMIAQM, AMIEEnvSc	A. Goodhand MSc, BSc (Hons), MIAQM, MIEEnvSc PISEP, CSci	D. Harvey BEng (Hons)
P03	May 2026	S2	H. Lillis MSc, BSc (Hons), AMIAQM, AMIEEnvSc	A. Goodhand MSc, BSc (Hons), MIAQM, MIEEnvSc PISEP, CSci	D. Harvey BEng (Hons)

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EXECUTIVE SUMMARY

BWB Consulting Limited was appointed by Wilson Bowden Developments Ltd to prepare an Indoor Air Quality Plan for a proposed development at Plot Q, Kingsway Business Park, Rochdale. The proposed development comprises a warehouse distribution/production unit with first floor office and core facilities.

Indoor air pollution can have a negative impact on human health and wellbeing. Consideration of indoor air quality and reducing sources of pollution indoors during the design of developments is recommended to minimise adverse health effects associated with air pollution where possible.

The principles of creating a good indoor air quality environment, as detailed in BREEAM UK New Construction 2018 guidance, were followed in the production of this Indoor Air Quality Plan. These principles include reducing or removing sources of indoor air contaminants where possible, diluting and controlling contaminant levels internally where sources cannot be removed and maintaining good indoor air quality once the building is operational to protect the health and wellbeing of occupants.

Utilising building materials with certified low contaminant emissions can reduce the presence of internal contaminants in the buildings prior to operation. Ensuring buildings are well-ventilated post-completion and pre-operation to flush out any residual airborne contaminants will further reduce the potential for indoor air contaminants to influence the health and wellbeing of users. Testing of indoor contaminant levels can also be undertaken to establish whether contaminant levels are below recommended levels.

The design of any ventilation strategy for the proposed development should aim to minimise ingress of external pollutants and enable sufficient air circulation to be achieved and reduce build-up of contaminants inside. The proposed development should be well-maintained to reduce the potential for mould, bacteria or odours to build up through implementing a suitable cleaning regime and enabling regular inspections of internal fittings and equipment to ensure there are appropriate operating conditions and to identify any malfunctions at the earliest opportunity.

CONTENTS

EXECUTIVE SUMMARY	iii
1. INTRODUCTION.....	1-5
Appointment & Background.....	1-5
Site Setting	1-5
Proposed Development	1-5
2. BREEAM UK NEW CONSTRUCTION V6.1 REQUIREMENTS	2-6
BREEAM Overview	2-6
Indoor Air Quality Plan Prerequisite	2-6
Ventilation - One Credit Available (Targeted)	2-6
Post-Construction Indoor Air Quality Measurement – Credit Not Applicable At This Stage	2-7
3. LEGISLATION, POLICY AND GUIDELINES	3-8
National Legislation	3-8
Local Policy	3-8
Guidelines.....	3-9
4. CONTAMINANT SOURCES	4-11
Internal Sources.....	4-11
External Sources	4-11
5. REMOVAL, DILUTION AND CONTROL OF CONTAMINANT SOURCES.....	5-14
Travel Plan	5-14
Heating, Cooling and Energy Strategy	5-14
Ventilation	5-14
Maintenance	5-15
6. PROCEDURES FOR PRE-OCCUPANCY FLUSH OUT	6-16
7. THIRD PARTY TESTING AND ANALYSIS	7-17
Monitoring Strategy	7-17
Re-Testing.....	7-17
8. MAINTAINING INDOOR AIR QUALITY DURING OPERATION	8-18
9. CONCLUSION	9-19

APPENDICES

APPENDIX 1: FIT OUT MATERIALS

1. INTRODUCTION

Appointment & Background

- 1.1 BWB Consulting Limited (BWB) was instructed by Wilson Bowden Developments Ltd (the Client) to prepare an Indoor Air Quality Plan (IAQP) for a proposed development at Plot Q, Kingsway Business Park, Rochdale ('the Site').
- 1.2 Poor indoor air quality can cause a number of health effects such as dizziness, shortness of breath and respiratory tract irritation. It can also affect productivity and cause fatigue. This IAQP considers the existing sources of pollutants in the vicinity of the Site and the potential sources of contaminants that may be introduced as part of the proposed development. With considerate building design and fit out, sources of contaminants within the proposed development can be reduced.
- 1.3 This IAQP was prepared in accordance with the principles set out in Building Research Establishment's Environmental Assessment Method (BREEAM) UK V6.1 New Construction 2018¹ and details the likely sources of indoor air contaminants and design and fit-out measures that can be implemented to reduce sources of indoor air contaminants and promote good indoor air quality for future occupants.

Site Setting

- 1.4 The Site is located at Plot Q in Kingsway Business Park, Rochdale within the administrative area of Rochdale Metropolitan Borough Council (RMBC). The Site currently comprises open greenfield space.
- 1.5 To the north and east of the Site is land within the Kingsway Business Park. The wider area includes additional warehouse units to the north and residential units to the east of the Site.
- 1.6 The Site is not located within an existing Air Quality Management Area (AQMA); however, the Rochdale AQMA is located approximately 575m northwest of the Site and was declared by RMBC for potential exceedances of the current annual mean air quality objective for nitrogen dioxide (NO₂).

Proposed Development

- 1.7 The proposed development comprises a warehouse distribution/production unit with first floor office and core facilities.

¹ Building Research Establishment's Environmental Assessment Methodology (2024) BREEAM New Construction 2018 Version 6.1 Technical Manual Version SD5079.

2. BREEAM UK NEW CONSTRUCTION V6.1 REQUIREMENTS

BREEAM Overview

- 2.1 BREEAM is a sustainability assessment and certification scheme which provides market recognition for buildings with a low environmental impact. The grading system ranges from 'Pass' to 'Outstanding' and the proposed development is targeting 'Excellent'. There are several categories within a BREEAM assessment including Health and Wellbeing from which Indoor Air Quality is recognised under section Hea02.
- 2.2 In addition to the IAQP being a pre-requisite, there are three criteria with a total of four credits on which a building is assessed under the Hea02 Indoor Air Quality standards as follows:
- Ventilation (one credit available);
 - Emissions from Construction Products (two credits available); and
 - Post-Construction Indoor Air Quality Measurement (one credit available).
- 2.3 The proposals do not include for the fit out of the building at this stage and this Indoor Air Quality Plan has been produced for shell and core elements only. Therefore, only potentially applicable future credits and recommended procedures are detailed in this document. **Appendix 1** does however outline some considerations related to fit out materials.

Indoor Air Quality Plan Prerequisite

- 2.4 The production of an IAQP is a prerequisite of Hea02. In accordance with BREEAM, a site-specific IAQP should be prepared for the proposed development to identify potential contaminant sources within, and in the vicinity of, the proposed development and ways to reduce contaminant build up within the proposed development.
- 2.5 The IAQP must consider the following:
- Removal of contaminant sources;
 - Dilution and control of contaminant sources;
 - Procedures for pre-occupancy flush out;
 - Third party testing and analysis;
 - Maintaining good indoor air quality in-use; and
 - Any relevant local authority plans or policies (for example, Air Quality Management Areas or Local Air Quality Action Plans).

Ventilation - One Credit Available (Targeted)

- 2.6 Attainment of the ventilation credit under Hea02 provides recognition that a building has minimal concentrations and recirculation of pollutants via effective design. For a shell and core assessment, point A must be adhered to:

- A. Ensure that an ingress of fresh air is available by adhering to the criteria of the relevant standard for ventilation.

Post-Construction Indoor Air Quality Measurement – Credit Not Applicable At This Stage

- 2.7 To attain the post-construction indoor air quality credit, the following points must be adhered to:
- Post-construction but pre-occupancy formaldehyde concentration must not exceed $100 \mu\text{g.m}^{-3}$ as a 30-minute mean and the method for sampling should be performed in accordance with ISO 16000-2 and ISO 16000-3; and
 - Post-construction but pre-occupancy TVOC concentration must not exceed $500 \mu\text{g.m}^{-3}$ as an 8-hour mean and the method for sampling should be performed in accordance with ISO 16000-5 and ISO 16000-5 or ISO 16017-1.
- 2.8 In the event that an exceedance is measured during sampling, the project team must confirm that the IAQP will be adhered to, to reduce concentrations of pollutant to below the set limits. The measured concentrations of formaldehyde and TVOC should be reported via the BREEAM Scoring and Reporting Tool.
- 2.9 The Post-Construction Indoor Air Quality Measurement credit is not applicable for shell and core developments; however, it is recommended that post-construction/pre-occupation testing be undertaken at the appropriate stage and would be within the responsibility of the fit-out contractor.

3. LEGISLATION, POLICY AND GUIDELINES

National Legislation

Air Quality Objectives and Targets

- 3.1 At the time of writing, statutory limits for indoor air quality did not exist in the UK. In the absence of legally binding limits, the current UK air quality objectives² were utilised in this IAQP. The current UK air quality objectives² for pollutants relevant to this IAQP are detailed in **Table 3.1**.

Table 3.1: Air Pollutants, Objectives and Targets

Pollutant	Current UK Air Quality Objectives ²
Nitrogen dioxide (NO ₂)	40 µg.m ⁻³ (annual mean)
	200 µg.m ⁻³ (1-hour mean, up to 18 exceedances per year)
Carbon Monoxide (CO)	10,000 µg.m ⁻³ (maximum daily running 8-hour mean)
Particulate Matter (PM ₁₀)	40 µg.m ⁻³ (annual mean)
	50 µg.m ⁻³ (24-hour mean, up to 35 exceedances per year)
Particulate Matter (PM _{2.5})	20 µg.m ⁻³ (annual mean)
	<i>10 µg.m⁻³ (annual mean interim target to be achieved by 31 December 2030, as detailed within the Environmental Improvement Plan³)</i>
	<i>10 µg.m⁻³ (annual mean to be achieved by 31 December 2040)⁴</i>
Benzene	5 µg.m ⁻³ (running annual mean)
1,3-butadiene	2.25 µg.m ⁻³ (running annual mean)

Italics denotes future air quality objectives that will come into force in the future

Local Policy

Rochdale Adopted Core Strategy

- 3.2 Rochdale Borough Council adopted the Rochdale Adopted Core Strategy on 19th October 2016 to help support the local plan. The Core Strategy is the lead document within the Local Plan and details policies and plans for future development in the area. A review of the Core Strategy indicates the following policies are relevant to air quality:

² Department of the Environment (DoE) (1997) The UK National Air Quality Strategy, London: HMSO

³ Defra (2025) Environmental Improvement Plan 2025

⁴ HMSO (2023) Statutory Instruments 2023 No. 96 The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023

"G9 – Reducing the impact of pollution, contamination and land instability

We will reduce all forms of pollution , contamination and land stability in the borough, by:

a. Focusing on measures that reduce air pollution in Air Quality Management Areas, and other areas where pollution levels are unacceptable, particularly around motorways and main roads

b. Requiring that development does not have impacts that lead to an unacceptable increase in air, water, noise, light or other pollution; c. Ensuring sensitive new developments such as housing, schools and hospitals are not adversely affected by existing sources of pollution such as roads and certain types of industry;

d. Requiring a Low Emissions Strategy (LES) where development requires a Transport Assessment, and in other circumstances as appropriate;

[...]

g. Using planning conditions or obligations to control pollution from new development, or the impact of pollution on new development."

And;

"DM1: 'General Development Requirements

All development proposals, including changes of use of land and buildings, extensions and alterations, will be expected to demonstrate that they:

[...]

d. Mitigate against any impacts due to noise, air, dust, light and odour pollution, traffic generation or inadequate access, where such mitigation is identified as being necessary;

f. Do not have an adverse impact on health."

Greater Manchester Clean Air Plan

- 3.3 RMBC forms part of the Greater Manchester Combined Authority (GMCA). There are plans to introduce a Clean Air Zone in Greater Manchester which would involve a daily charge for Heavy Goods Vehicles (HGVs), vans, buses, coaches, taxis and private hire vehicles that do not meet emissions standards. At the time of writing, a date for implementation was not available for inclusion within this IAQP. Should the government approve the Greater Manchester Clean Air Plan, this would push Greater Manchester to meet legal limits for NO₂ by 2026.

Guidelines

World Health Organisation Guidelines

- 3.4 The World Health Organisation (WHO) published Guidelines for Indoor Air Quality: Selected Pollutants in 2010⁵ and the Global Air Quality Guidelines were published in 2021⁶. The purpose of the WHO guidelines is to offer global guidance on air quality limits on pollutants that pose health effects.

⁵ World Health Organisation (2010) Guidelines for indoor air quality: selected pollutants

⁶ World Health Organisation (2021) WHO global air quality guidelines, Particulate matter (PM_{2.5} and PM₁₀), ozone, nitrogen dioxide, sulphur dioxide and carbon monoxide

- 3.5 At the time of writing, the WHO guidelines were not policy requirements but the Guidelines for Indoor Air Quality: Selected Pollutants⁵ are required to be targeted by BREEAM for formaldehyde and total volatile organic compounds. The Global Air Quality Guidelines⁶ are not required to be targeted by BREEAM but have been included for reference. All WHO guidelines for pollutants relevant to this IAQP have been included in **Table 3.2**.

Table 3.2: WHO Guidelines

Pollutant	Averaging Period	Concentration ($\mu\text{g.m}^{-3}$)	BREEAM Target
NO ₂	Annual mean	10	None
PM ₁₀	Annual mean	15	None
PM _{2.5}	Annual mean	5	None
CO	24-hour mean	4000	None
Ozone (O ₃)	8-hour	100	None
Formaldehyde	30 minute mean	≤ 100	$\leq 100 \mu\text{g.m}^{-3}$ (30 minute mean)
Total Volatile Organic Compounds (TVOC)	8-hour mean	≤ 500	$\leq 500 \mu\text{g.m}^{-3}$ (8-hour mean)

4. CONTAMINANT SOURCES

4.1 Contaminants that have the potential to influence indoor air quality have a variety of sources which may be internal or external to the proposed development. Contaminants are split into two groups as set out below:

- Contaminants that can be prevented; and
- Contaminants that are unavoidable.

4.2 Contaminants that are unavoidable can only be controlled or diluted to minimise emissions and their influence on indoor air quality.

4.3 The proposed development comprises a warehouse and offices and therefore there are a number of sources which may contribute to poor indoor air quality.

Internal Sources

4.4 Building users are a source of carbon dioxide, moisture and odour, and activities such as smoking close to air inlets has the potential to introduce contaminants into the indoor air quality environment.

4.5 Cleaning supplies are likely to contain VOCs amongst other pollutants. Evaporation of such pollutants means that the surrounding air may become contaminated.

4.6 Furthermore, indoor environments which have been recently decorated act as sources of VOCs which are emitted from carpets, materials, furniture and paints. These emissions are likely to reduce during the lifetime of such furnishings however may pose an initial risk when the building is new.

4.7 Operations within the warehouse area may include the use of internal plant such as forklifts and may be either electric or diesel powered. Should the use of diesel forklifts be used, these will emit vehicle exhaust gases such as nitrogen oxides and particulates.

External Sources

4.8 The proposed development is located approximately 575m southwest of the Rochdale AQMA which was declared for potential exceedances of the NO₂ objective. RMBC undertakes monitoring of NO₂, PM₁₀ and PM_{2.5} concentrations within its administrative area. No PM₁₀ or PM_{2.5} monitoring is undertaken in the vicinity of the Site. The closest NO₂ monitoring location to the Site is approximately 550m west, along the A664, where NO₂ concentrations below the current annual mean air quality objective for England between 2020 and 2024. The Site is set back from the major road network and therefore it is considered unlikely that the current air quality objective of 40µg.m⁻³ will be exceeded at the Site.

4.9 The Site is however located in close proximity to the internal road network of Kingsway Business Park which may influence the indoor air quality of the Site as a result of road traffic emissions. Car parking is proposed at the Site and will be located directly outside of the unit. Stationary vehicles that are left in parking bays with the engine switched on, are sources of several toxic gases and particulates.

- 4.10 The air intakes at the proposed development should be located away from the parking bays so that potential pollutants entering the building are reduced.
- 4.11 It was confirmed by BWB Consulting Ltd, the appointed Mechanical Engineers, that there are no proposed combustion sources to provide heating and hot water for the Site. Therefore, the development will not include any external pollution sources which may influence indoor air quality.
- 4.12 The Site is located within an existing commercial/industrial area and a review of aerial imagery did not indicate any significant sources of industrial emissions within close proximity.
- 4.13 **Table 4.1** provides a summary of the likely sources of both internal and external contaminants and the typical substances emitted from shell and core developments of this nature.

Table 4.1: Sources and Types of Internal and External Air Contaminants

Contaminant Source	Process / Activity	Products Used	Typical Substances Emitted
Building users	Breathing	n/a	Carbon dioxide (CO ₂), odours, bacteria, viruses
	Sweating		Water vapour, odours
	Digestion, excretion, skin scaling		Intestinal gases, bacteria and viruses, allergenic dust
Kitchen areas	Cooking, cleaning products	Foodstuffs, cleaning products	Odours, water vapour, particulates, hydrocarbons, terpenes and volatile organic compounds (VOCs)
Toilets and shower areas	Personal care, sanitation	Cosmetics and consumer products, detergents and cleaning products, disinfectants	Solvents, inorganic and organic aerosols, water vapour, ammonia and chlorine
Tobacco / smoking area	Smoking near to buildings	Tobacco products	Carbon monoxide (CO), oxides of nitrogen (NO _x), nicotine, aldehydes, nitrosamines and poly aromatic hydrocarbons (PAHs)
Mould	Spore release	n/a	Bacteria, fungus, mycotoxins

Contaminant Source	Process / Activity	Products Used	Typical Substances Emitted
Building materials	Product processing, outgassing, ageing, abrasion, decomposition	Building preservatives, corrosion prevention agents, insulation materials, sealants, paints, concrete additives, furnishings	Various gases and particulates including solvents, plasticisers, monomers, oligomers, wood presentative, flame-proofing agents, fibres, radon, ammonia
Ventilation systems	Operation and maintenance	Filters, insulation material	Microorganisms, fibres
Vehicles	Deliveries, local road traffic, road abrasion and resuspension	Fuels, plastic and rubber material	Vehicle exhaust gases (CO, NO _x , hydrocarbons, PAHs) and particulate matter from exhausts and tyre and brake wear and road abrasion

5. REMOVAL, DILUTION AND CONTROL OF CONTAMINANT SOURCES

- 5.1 The following methods are recommended for utilisation at the proposed development to remove or reduce contaminant sources where possible to acceptable levels of emissions.

Travel Plan

- 5.2 BWB Consulting Ltd, the Transport Consultants for the project, will provide a Travel Plan to support the planning application for the project. The proposed development will provide the required number of electric vehicle (EV) charging points within the car park. The proposed development will also include cycle storage to encourage active travel to Site.

Heating, Cooling and Energy Strategy

- 5.3 The proposed energy strategy comprises an all-electric approach including the use of heat recovery variable refrigerant flow (VRF) systems. An all-electric energy strategy will limit on-site carbon, NO_x and particulate matter emissions and therefore eliminate the requirement of exhaust flues associated within combustion plant which may act as a localised source of pollution for air intake at the proposed development.

Ventilation

Ventilation Strategy

- 5.4 It is understood that the ventilation strategy at the proposed development will comprise ceiling void mounted heat recovery units for the office spaces and the warehouse area will be naturally ventilated. The ventilation strategy will follow the statutory guidance of the Buildings Regulations, Part F of BS ISO 17772-1 2017.
- 5.5 Ventilation units within the proposed development should enable sufficient air volumes, velocities and temperatures to the occupied areas. Ventilation in bathrooms and any areas where cooking may occur should also be considered to reduce circulation of odours and allergens across the wider floor area. Different flow rates will be required to circulate air in larger spaces such as the office and warehouse areas compared to smaller rooms such as the toilets, which will have separate ventilation/extract units.
- 5.6 As the 'Ventilation' credit is targeted, the air permeability/tightness must meet the Building Regulations Approved Document F limit of 10 m³.hr.m⁻². A minimum fresh air rate of 1.5 L/s/m² is recommended within occupied spaces of the building which allows for occupied flush out to occur, in the event that it is required. The ventilation rates provided by the Mechanical Engineer will be at a minimum of 1.2 L.s⁻¹.m⁻² and is therefore just below the recommended fresh air rate but remains above the minimum fresh air rate of 1 L.s⁻¹.m⁻² and is in accordance with the Building Regulations minimum requirements of 10 L.s⁻¹ per person.

Air Intakes and Exhausts

- 5.7 Air intakes for the proposed development should be located with the aim of minimising the accumulation of air contamination. The 'Ventilation Methodology' in Hea02 states that air inlets should be located at least 10m from the main road traffic sources including internal access roads to prevent polluted ambient air being drawn into the building. Furthermore, air exhausts should ideally be located at least 10m away from the air intakes to reduce recirculation of contaminated air into the building.

Maintenance

- 5.8 The proposed development should be cleaned regularly to prevent build-up of odours, bacteria and viruses and promote cleanliness. Cleaning products are a source of indoor air contaminants themselves and, therefore, the use of cleaning products should be considerate of the users of the proposed development to minimise exposure. It is recommended that cleaning activities take place at the end of the working day after staff have left to minimise exposure to contaminants from cleaning products, and provide the greatest period of ventilation and dilution of contaminants prior to re-occupation of the space the following day.
- 5.1 In addition, the ventilation system should be maintained in accordance with an Operation and Maintenance Manual to ensure appropriate function and regularly tested to identify any faults at the earliest opportunity and minimise any impact on indoor air quality.

6. PROCEDURES FOR PRE-OCCUPANCY FLUSH OUT

- 6.1 It is also recommended that where possible, ventilation is run at maximum rates for as long as possible to reduce internal contaminant levels as far as practicable post construction and fit-out, but prior to first operation. This is recommended even where testing is not proposed as it will dilute contaminants within the proposed development and therefore, improve indoor air quality for users once operational.
- 6.2 The following flush-out procedures relevant to the proposed development are outlined below:
- Naturally ventilated spaces:
 - Intensively ventilate the room or building for 15 minutes, using all openable windows and doors.
 - Following intensive ventilation, keep all doors and windows closed for at least eight hours (ideally overnight) prior to testing. No sealing of gaps that are normally present should be undertaken to enable levels to represent normal operations.
 - Mechanically ventilated spaces:
 - Run the ventilation systems for at least three hours before testing is started.
 - Testing must be undertaken under normal climate control conditions including humidity, temperature and ventilation rates.
- 6.3 It is beneficial to indoor air quality to undertake regular flush-out exercises across the proposed development once operational to minimise contaminant build up and maintain good indoor air quality.
- 6.4 Where VOC and formaldehyde testing is proposed, should the 'Post-Construction Indoor Air Quality Measurement' credit be targeted in the future, a pre-occupancy flush out is essential to ensure that the levels of contaminants measure a true representation of levels likely to be experienced within the proposed development once operational. The pre-occupancy flush out procedure should be undertaken in accordance with the requirements of BS 16000-5.

7. THIRD PARTY TESTING AND ANALYSIS

- 7.1 The credit to complete post-construction VOC and formaldehyde testing is not applicable for shell and core assessments, however it is recommended that testing be carried out at the appropriate stage by a suitably qualified professional. Testing should be carried out following pre-occupancy flush out but prior to first operation. The testing procedures are low cost and are set out below.

Monitoring Strategy

- 7.2 Sampling should be performed in rooms that will be occupied for long periods of time. A representative number of rooms should be sampled which considers emissions from different furnishings and in different ventilation areas. During sampling, doors and windows should remain closed to minimise the influence of emissions from external sources. Should there be larger areas such as open plan, it may be useful to sample in two different areas to understand the homogeneity of the indoor environment.
- 7.3 In addition to the VOC and Formaldehyde sampling, sampling of the temperature and relative humidity to consider the influences of the indoor environment should be conducted.
- 7.4 The measured VOC and Formaldehyde concentrations within the sampled areas should not exceed the criteria summarised in Section 3.

Re-Testing

- 7.5 If testing reveals that levels are above the thresholds detailed above, recommendations on how to reduce it should be provided by the third-party undertaking testing (e.g. further flush out, removal of materials) followed by further testing. Results should be reported via the BREEAM Scoring and Reporting Tool.

8. MAINTAINING INDOOR AIR QUALITY DURING OPERATION

8.1 Once the proposed development is in operation, it is important to maintain the indoor air quality environment. The following steps are recommended for maintaining indoor air quality for the commercial end use:

- Appoint an indoor air quality representative or manager who is accountable for the quality of the environment and has the authority, knowledge and training to oversee or manage the indoor air quality environment;
- Regularly assess the indoor air quality of the building by reviewing potential pollutant sources, reviewing records pertinent to the design and operation of the mechanical ventilation systems and obtaining feedback from building users to help identify any indoor air quality issues;
- Educate building users including staff and visitors utilising the space. Where possible, training opportunities and establishment of pollutant source management policies should be identified; and
- Ensure the building is operated and maintained to facilitate improved indoor air quality through the establishment of operation and maintenance procedures including the maintenance of mechanical ventilation systems in line with manufacturer recommendations. Procedures for monitoring indoor air quality and responding to air quality complaints should be established and response times to leaks, floods and other pollution accidents that occur in the building should be reviewed to prevent any indoor air quality problems from developing.

9. CONCLUSION

- 9.1 BWB Consulting Limited (BWB) was instructed by Wilson Bowden Developments Ltd to prepare an IAQP for the proposed development at Plot Q, Kingsway Business Park, Rochdale to support BREEAM New Construction V6.1.
- 9.2 The principles of creating a good indoor air quality environment, as detailed in BREEAM UK New Construction V6.1 guidance, were followed in the production of this Indoor Air Quality Plan.
- 9.3 The IAQP identified that the proposed development is not located within an AQMA; however, the Rochdale AQMA is located approximately 575m northeast of the Site and was declared for potential exceedances of annual mean air quality objective for NO₂. Monitoring data in the development locale indicates that pollutant concentrations were below the relevant current air quality objectives between 2020 and 2024. The proposed development is set back from any major road network and therefore pollutant concentrations at the Site are also anticipated to be below the relevant current air quality objective for England.
- 9.4 Internal and external contaminant sources were identified that have the potential to influence indoor air quality for staff and building users. Measures were recommended to remove or reduce contaminant sources where possible, and procedures were detailed to support pre-operation flush-out to dilute and remove contaminants prior to operation of the buildings. The proposed development should be well-maintained to reduce the potential for mould, bacteria or odours to build up through implementing a suitable cleaning regime and enabling regular inspections of internal fittings and equipment to ensure there are appropriate operating conditions and to identify any malfunctions at the earliest opportunity.
- 9.5 An IAQP is a prerequisite to BREEAM Hea 02. Once an IAQP is submitted, the ventilation credit (one) can be targeted and is likely to be awarded if the relevant criteria are met, as detailed within Section 5.
- 9.6 With considerate design and fit-out, as detailed in the IAQP, it is considered that the proposed development can reduce indoor contaminants to promote health and wellbeing for staff and visitors.

APPENDICES

APPENDIX 1: FIT OUT MATERIALS

Fit Out Materials

Products utilised in the fit out of the proposed development have the potential to release airborne contaminants during their installation and once in-situ. It is recommended that the proposed development is well ventilated during fit out to allow dilution and dispersion of contaminants. A period of de-gassing is also recommended, whereby materials and furniture installed during fit out are left to de-gas contaminants that are naturally emitted from the materials when first installed, prior to first occupancy.

Wherever possible, it is recommended that materials utilised for fit-out installation (e.g. adhesives), decoration (e.g. paints and floor coverings) and operation (e.g. wooden shelving) have a low VOC and formaldehyde content. Table 5.11 of the BREEAM UK New Construction 2018 Hea 02 Indoor Air Quality methodology provides emissions criteria for products to minimise the presence of contaminants by ensuring materials and products are low in VOC and formaldehyde.

Although only shell and core elements are relevant for this BREEAM assessment, it is considered best practice to consider the above elements.

