

ENVIRONMENT

Manchester Quays Two Limited
Shipyard
Manchester
Air Quality Assessment

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Manchester Quays Two Limited Shipyards Manchester Air Quality Assessment

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EXECUTIVE SUMMARY

BWB Consulting Limited was appointed by Manchester Quays Two Limited to undertake an air quality assessment for a proposed food hall and event space at land to the north of Water Street in Manchester known as the Shipyards.

The Site is located within the administrative area of Manchester City Council. The Site is located within the Greater Manchester Combined Authority Air Quality Management Area which was declared for potential exceedances of the annual mean air quality objective for nitrogen dioxide.

A qualitative construction phase dust assessment was undertaken in accordance with Institute of Air Quality Management guidance and measures were recommended for inclusion in a Dust Management Plan to minimise emissions during construction activities. With the implementation of these mitigation measures the impact of construction phase dust emissions was considered to be 'not significant' in accordance with Institute of Air Quality Management guidance.

The proposed development trip generation was screened using the Institute of Air Quality Management and Environmental Protection UK two stage screening process, to determine whether a detailed road traffic emissions impact assessment was required. Consideration was also given to the Manchester City Council Air Quality and Planning Technical Guidance. The proposed development trip generation did not exceed the relevant screening criteria and therefore detailed dispersion modelling of development-generated road traffic was not undertaken.

Based on the assessment results, the impact of the proposed development on local air quality was considered to be not significant.

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1. INTRODUCTION

- 1.1 BWB Consulting Limited (BWB) was instructed by Manchester Quays Two Limited (the Client) to undertake an air quality assessment for a proposed food hall and event space at land north of Water Street in Manchester known as the Shipyards ('the Site').
- 1.2 The assessment considers construction phase dust impacts and operational phase road traffic emissions. A qualitative construction phase dust assessment was undertaken in accordance with relevant guidance. An operational phase road traffic emissions screening assessment was undertaken to consider the requirement for a detailed assessment of additional vehicles generated by the proposed development.
- 1.3 This report is necessarily technical in nature so to assist the reader a glossary of air quality terminology can be found in **Appendix A**.

Site Setting

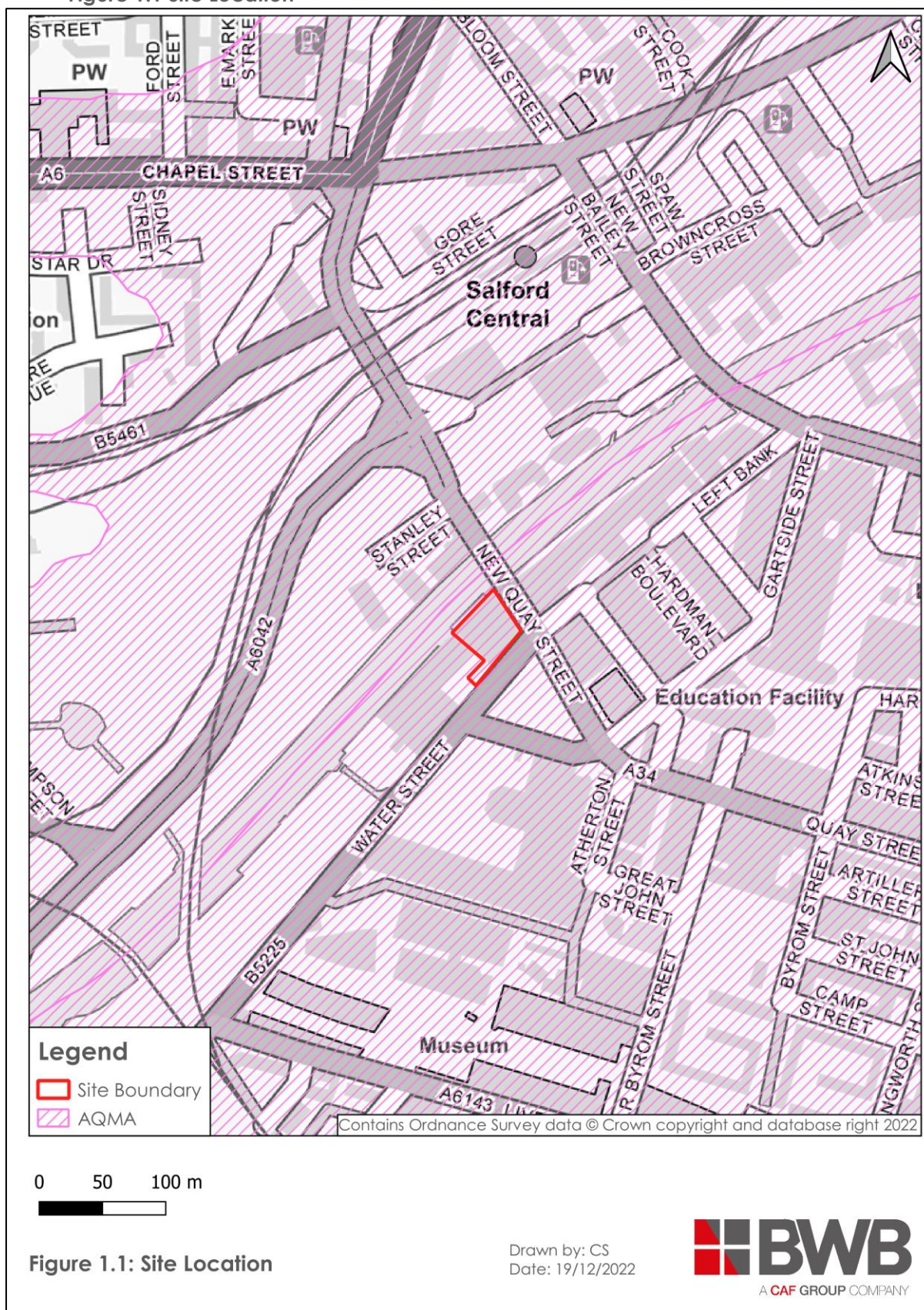
- 1.4 The Site is located to the north of Water Street in Manchester, within the administrative area of Manchester City Council (MCC). The Site is also located within the Greater Manchester Combined Authority (GMCA) Air Quality Management Area (AQMA) which was declared for potential exceedances of the annual mean air quality objective for nitrogen dioxide (NO₂).
- 1.5 The Site currently comprises sheds associated with the former shipyard and these are to be retained and refurbished as part of the proposed development. The Site also comprises undercroft car parking associated with the adjacent Manchester Marriott Victoria & Albert Hotel which will remain in situ when the proposed development is operational. The car park is for use by hotel patrons only and does not form part of the proposed development.
- 1.6 To the immediate north of the Site is the River Irwell which provides a natural boundary between the administrative areas of MCC and Salford City Council (SCC). A hotel and residential properties are located across the River Irwell. To the east of the Site is New Quay Street with residential and commercial properties beyond. To the south of the Site is Water Street with commercial uses currently under construction beyond, forming the St John's Strategic Regeneration Framework area. To the west of the Site is the River Irwell with residential properties beyond. **Figure 1.1** details the location of the proposed development.
- 1.7 Principal air pollution sources in the vicinity of the Site are likely to comprise road traffic emissions.

Proposed Development

- 1.8 The proposed development comprises the regeneration of the shipyard sheds to provide a food hall and event space including a ground floor terrace over the River Irwell and a mezzanine level. The proposed development is car free and pedestrian

access will be via both Water Street and New Quay Street. The proposed development masterplan is detailed in **Appendix B**.

Figure 1.1 Site Location



2. LEGISLATION, PLANNING POLICY & GUIDANCE

National Legislation and Planning Policy

2.1 The following national legislation and planning policy is relevant to air quality and was considered in the undertaking of the assessment. A summary of the relevant national legislation and planning policy is provided in **Appendix C**:

- European Parliament, EU 2008 ambient Air Quality Directive (2008)¹;
- HMSO, Air Quality (England) Regulations (2000)²;
- HMSO, Environment Act (1995)³;
- HMSO, Environment Act (2021)⁴;
- Department for Environment, Air Quality Strategy (1997)⁵;
- Department for Environment, Food and Rural Affairs, The Environment (Miscellaneous Amendments) (EU Exit) Regulations (2020)⁶;
- Department for the Environment, Food and Rural Affairs, Air Quality Strategy (2007)⁷;
- Ministry of Housing, Communities and Local Government, National Planning Policy Framework (NPPF) (2021)⁸; and
- Ministry for Housing, Communities and Local Government, Planning Practice Guidance (PPG) for air quality (2019)⁹.

Local Planning Policy

2.2 The following local and regional planning policy was considered in the undertaking of the assessment and a summary is provided in **Appendix C**:

- Manchester City Council, Manchester's Local Development Framework: Core Strategy Development Plan Document (2012)¹⁰.

Air Quality Assessment Guidance

2.3 The following guidance was utilised in the air quality assessment:

- Defra, Local Air Quality Management Technical Guidance (LAQM.TG(22)) (2022)¹¹;
- Institute of Air Quality Management, Guidance on the assessment of dust from demolition and construction (2014)¹²; and

¹ European Parliament (2008) Council Directive 2008/50/EC on Ambient Air Quality and Cleaner Air for Europe

² HMSO (2000) Statutory Instrument 2000 No. 928, The Air Quality (England) Regulations 2000 (as amended), London: HMSO

³ HMSO (1995) The Environment Act 1995, London: TSO

⁴ HMSO (2021) The Environment Act 2021, London: TSO

⁵ Department of the Environment (DoE) (1997) The UK National Air Quality Strategy, London: HMSO

⁶ Department of the Environment, Food and Rural Affairs (Defra) (2020) The Environment (Miscellaneous Amendments) (EU Exit) Regulations, London: HMSO

⁷ Department of the Environment, Food and Rural Affairs (Defra) (2007) The Air Quality Strategy for England, Scotland, Wales and Northern Ireland, London: HMSO

⁸ Ministry of Housing, Communities & Local Government (2021) National Planning Policy Framework, HMSO London

⁹ Ministry for Housing, Communities and Local Government (2019) Planning Practice Guidance Air Quality

¹⁰ Manchester City Council (2012) Manchester's Local Development Framework: Core Strategy Development Plan Document

¹¹ Defra (2021) Local Air Quality Management Technical Guidance LAQM.TG(16)

¹² Institute of Air Quality Management (2014) Guidance on the assessment of dust from demolition and construction, Institute of Air Quality Management, London

- Institute of Air Quality Management and Environmental Protection UK, Land-Use Planning and Development Control: Planning for Air Quality (2017)¹³; and
- Manchester City Council, Air Quality & Planning Technical Guidance (2022)¹⁴.

¹³ Institute of Air Quality Management and Environmental Protection UK (2017) Land-Use Planning and Development Control: Planning for Air Quality

¹⁴ Manchester City Council (2022) Air Quality & Planning Technical Guidance

3. METHODOLOGY

Consultation with Manchester City Council

- 3.1 Consultation was undertaken with the Environmental Health and Protection Department at MCC in which the proposed methodology was provided via email on the 20th December 2022. A response was received on the 21st December 2022 from MCC who agreed the proposed methodology.
- 3.2 The assessment methodology, as agreed with MCC, is summarised below:
- Construction Phase - A construction phase dust assessment was undertaken and relevant measures to mitigate construction phase dust emissions were recommended. The assessment was undertaken in accordance with guidance provided by the Institute of Air Quality Management (IAQM)¹².
 - Operational Phase – An operational phase road traffic emissions screening assessment was undertaken in accordance with IAQM and Environmental Protection UK (EPUK) guidance¹³.
 - The MCC Air Quality & Planning Technical Guidance¹⁴ was also considered as part of the assessment. The proposed development was classified as 'major' in accordance with the Town & Country Planning Act as the proposals comprise more than 1,000m² of floorspace. However, the predicted trip generation does not exceed the relevant screening criteria once distributed across the network. As such, the offsetting of emissions associated with the proposed development is not considered to be required and a damage cost calculation was not undertaken.
- 3.3 Full details of the methodology used in the assessment, as agreed with MCC, are provided below.

Construction Phase Dust Assessment

- 3.4 An assessment of the potential impacts arising from the construction of the proposed development was undertaken in accordance with IAQM Guidance¹². The full assessment methodology is not reproduced within this report but a summary of the assessment steps are provided below:
- Step 1 – screen the requirement for a more detailed assessment. No assessment is required if there are no receptors within a certain distance of the works.
 - Step 2 – assess the risk of dust impacts separately for each of the four activities considered (demolition, earthworks, construction and trackout).
 - Step 2A – determine the potential dust emission magnitude for each of the four activities;
 - Step 2B – determine the sensitivity of the area;
 - Step 2C – determine the risk of dust impacts by combining the findings of steps 2A and 2B.
 - Step 3 – determine the site-specific mitigation for each of the four activities; and
 - Step 4 – examine the residual effects and determine significance.

Operational Phase Road Traffic Emissions – Screening Assessment

- 3.5 Guidance published by the IAQM and EPUK¹³ provides a two-stage approach to determine the level of assessment required in the consideration of the impact of development-generated road traffic emissions on local air quality.

Stage 1

- 3.6 The Stage 1 criteria requires that the assessment progress to Stage 2 if any of the following apply:
- The development comprises:
 - 10 or more residential units or a site area of more than 0.5ha; or
 - More than 1,000m² of floor space for all other uses or a site area greater than 1ha.
 - Coupled with any of the following:
 - The development has more than 10 parking spaces; or
 - The development will have a centralised energy facility or other centralised combustion process.

Note: Consideration should be given to the potential impacts of neighbouring sources on the site, even if an assessment of impacts of the development on the surrounding area is screened out.

Stage 2

- 3.7 The IAQM and EPUK guidance¹³ provides the following indicative criteria to determine whether a detailed road traffic emissions assessment is required for a proposed development.
- 3.8 The Stage 2 criteria relevant to the proposed development are:
- A change in Light Duty Vehicles (LDV) of more than 100 vehicles as a 24 hour Annual Average Daily Traffic (AADT) flow within an AQMA; and
 - A change in HDV flow of more than 25 vehicles as a 24 hour AADT flow within an AQMA.

4. BASELINE CONDITIONS

Local Air Quality Management

- 4.1 The Site is located within the GMCA AQMA and is approximately 15m from the SCC AQMA; both AQMAs were declared for potential exceedances of the annual mean air quality objective for NO₂.

Local Air Quality Monitoring

Nitrogen Dioxide

- 4.2 GMCA undertakes NO₂ monitoring within its administrative boundary using a network of automatic monitoring stations and diffusion tubes. The closest monitoring location to the Site is the SA39NO roadside passive diffusion tube, approximately 350m north along Trinity Way.
- 4.3 At the time of assessment 2020 and 2021 data was available to review. However, due to the influence of the COVID-19 pandemic lockdown restrictions, 2020 and 2021 monitoring data is not considered representative of normal conditions. The IAQM released a position statement¹⁵ in August 2021 with regard to 2020 and 2021 monitoring datasets, which recommends that until the influence of the COVID-19 pandemic is fully understood, 2019 monitoring data should be treated as the last year of typical monitoring data.
- 4.4 Bias adjusted NO₂ monitoring results, for the locations in the vicinity of the Site, are detailed in **Table 4.1**. Exceedances of the annual mean objective are highlighted in **bold**.

Table 4.1: GMCA NO₂ Monitoring Data in 2015 – 2021

ID	Grid Reference	Site Monitoring Type	Distance from and direction to Site boundary	Monitored Annual Average Concentration (µg.m ⁻³)						
				2015	2016	2017	2018	2019	2020	2021
SA39NO	383040 398563	Roadside	350m north	38.5	46.8	41.6	39.1	41.7	30.4	33.0
SA27NO	383078 398741	Roadside	540m north	35.4	39.8	36.8	34.1	37.2	26.7	28.8
SA79NO	382602 398519	Roadside	600m north west	-	-	-	-	41.1	27.3	30.0
SA81NO	382561 397722	Roadside	690m south west	-	-	-	-	46.4	34.8	42.3
SA60NO	382445 397724	Roadside	790m south west	-	-	40.7	40.2	36.7	27.0	32.6

¹⁵ Institute of Air Quality Management (IAQM) (2020) Implications of the COVID-19 Pandemic on Air Quality Monitoring and Assessments

ID	Grid Reference	Site Monitoring Type	Distance from and direction to Site boundary	Monitored Annual Average Concentration ($\mu\text{g.m}^{-3}$)						
				2015	2016	2017	2018	2019	2020	2021
MA77NO	383576 397489	Urban Background	800m south east	37.5	44.2	38.8	41.0	43.7	26.9	30.8
MA24NO	383968 398070	Kerbside	830m east	55.2	45.3	44.7	40.3	40.8	26.8	31.8
MAN3	384310 398337	Urban Centre	1.2km east	39	40	36	35	37	27	30

- data not available. Data presented to level of precision detailed by GMCA.

- 4.5 Exceedances of the NO₂ annual mean air quality objective were recorded at all monitoring locations within the vicinity of the Site between 2015 and 2021 during at least one year, with the exception of diffusion tube SA27NO. 2019 is considered to be the most recent year with representative data and exceedances were recorded at five of the seven monitoring locations within the vicinity of the Site.
- 4.6 All of the monitoring locations considered are within the GMCA AQMA and therefore elevated NO₂ concentrations are anticipated. Elevated NO₂ concentrations are expected particularly at the kerbside monitoring location MA24NO and at roadside monitoring locations adjacent to major junctions, such as SA39NO and SA79NO, where queuing traffic occurs and high volumes of traffic are present along a main arterial road in the city centre.
- 4.7 The Site is located adjacent to an A-road however away from any major junctions, similar to the SA27NO diffusion tube located approximately 540m north. As such, annual mean NO₂ concentrations at this location are considered to be representative of the Site. No exceedances of the annual mean NO₂ air quality objective were recorded at SA27NO in the period of 2015-2021 and therefore exceedances of the annual mean NO₂ air quality objective are not anticipated to occur at the Site.
- 4.8 With regard to the short term air quality objective for NO₂, annual mean NO₂ concentrations at all monitoring locations within the vicinity of the Site are less than 60 $\mu\text{g.m}^{-3}$ in the period of 2015 to 2021 and therefore in accordance with Defra guidance¹¹, it is considered that exceedances of the current 1-hour mean NO₂ air quality objective at the Site are unlikely.

Particulate Matter (PM₁₀ and PM_{2.5})

- 4.9 MCC also monitor PM₁₀ and PM_{2.5} at the MAN3 automatic monitoring station located approximately 1.2km east of the Site. Annual mean concentrations have been below the relevant current air quality objectives for PM₁₀ and PM_{2.5} between the period of 2015 and 2021. PM₁₀ and PM_{2.5} concentrations are therefore also considered to be below the respective current air quality objectives at the Site.

Background Pollutant Concentrations

- 4.10 MCC undertake background monitoring of NO₂ at an urban background diffusion tube located approximately 800m south of the Site. MA77NO is located within a street canyon and is therefore not considered to be representative of conditions at the Site. As no representative background air quality monitoring is undertaken by MCC within the study area, background pollutant concentrations were obtained from the latest Defra background concentration maps¹⁶, which are provided for the UK as a 1km x 1km grid network. The latest maps are based on 2018 monitoring and meteorological data.
- 4.11 Background concentrations of NO₂, PM₁₀ and PM_{2.5} were obtained for the grid square covering the Site, for the current assessment year of 2022, are detailed in **Table 4.2**.

Table 4.2: Background Pollutant Concentrations used in the Assessment

Pollutant	Grid Square	Concentration (µg.m ⁻³)
		2022
NO ₂	383500, 398500	25.2
PM ₁₀		12.5
PM _{2.5}		8.1

- 4.12 As shown in **Table 4.2**, background concentrations are below the current relevant annual mean air quality objectives for NO₂, PM₁₀ and PM_{2.5} in the current year of 2022.

¹⁶ Defra (2019) background pollutant concentration maps [<https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2022>]

5. CONSTRUCTION PHASE DUST ASSESSMENT

- 5.1 The construction phase of the proposed development will involve a number of activities which have the potential to impact on local air quality. These include emissions of dust generated through demolition, excavation, construction, earthworks and trackout activities, exhaust pollutant emissions from construction traffic on the local highways network, and exhaust emissions from non-road mobile machinery (NRMM) within the construction site itself.
- 5.2 The location of sensitive receptors in relation to construction activities will affect the potential for such construction activities to cause dust soiling, nuisance and local air quality impacts. Meteorological conditions and the use of control measures will also contribute to the effects experienced.

Step 1: Screen the Need for a Detailed Assessment

- 5.3 Step 1 of the IAQM guidance¹² involves a screening assessment to consider whether a more detailed construction phase dust assessment is required.
- 5.4 In accordance with the guidance, a detailed assessment is required if:
- Human receptors are located within 350m of the boundary of the site or 50m of routes used by construction vehicles on the public highways, up to 500m from the site entrances; or
 - Ecological receptors are located within 50m of the boundary of the site or 50m of routes used by construction vehicles on the public highways, up to 500m from the site entrances.
- 5.5 From a review of the Multi Agency Geographic Information for the Countryside (MAGIC) website¹⁷, no ecological designations were identified within the above screening distance and therefore the impact on ecological designations was not considered further. However human receptors are located within the above screening distances, with the closest of these receptors located off Water Street, Stanley Street and New Quay Street. A construction phase assessment was therefore undertaken.

Step 2: Assess the Risk of Dust Impacts

Step 2A: Define the Potential Dust Emission Magnitude

- 5.6 The dust emission magnitudes for the construction activities were defined using the criteria detailed in the IAQM guidance¹² as detailed in **Table 5.1**.

¹⁷ Defra, Multi Agency Geographic Information for the Countryside (MAGIC) [<http://magic.defra.gov.uk/>]

Table 5.1: Dust Emission Magnitude Criteria and Definition

Activity	IAQM Dust Emission Magnitude	IAQM Dust Emission Magnitude Criteria
Demolition	Large	Total building volume >50,000m ³ , potentially dusty construction material (e.g. concrete), on-site crushing and screening, demolition activities >20m above ground level.
	Medium	Total building volume 20,000m ³ – 50,000m ³ , potentially dusty construction material, demolition activities 10 - 20m above ground level.
	Small	Total building volume <20,000m ³ , construction material with low potential for dust release (e.g. metal cladding or timber), demolition activities <10m above ground, demolition during wetter months.
Earthworks	Large	Total site area >10,000m ² , potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size), >10 heavy earth moving vehicles active at any one time, formation of bunds >8 m in height, total material moved >100,000 tonnes.
	Medium	Total site area 2,500m ² – 10,000m ² , moderately dusty soil type (e.g. silt), 5 - 10 heavy earth moving vehicles active at any one time, formation of bunds 4m - 8m in height, total material moved 20,000 tonnes – 100,000 tonnes.
	Small	Total site area <2,500m ² , soil type with large grain size (e.g. sand), <5 heavy earth moving vehicles active at any one time, formation of bunds <4m in height, total material moved <20,000 tonnes, earthworks during wetter months.
Construction	Large	Total building volume >100,000m ³ , on site concrete batching, sandblasting.
	Medium	Total building volume 25,000m ³ – 100,000m ³ , potentially dusty construction material (e.g. concrete), on site concrete batching.
	Small	Total building volume <25,000m ³ , construction material with low potential for dust release (e.g. metal cladding or timber).
Trackout	Large	>50 HDV (>3.5t) outward movements in any one day, potentially dusty surface material (e.g. high clay content), unpaved road length >100m.
	Medium	10 - 50 HDV (>3.5t) outward movements in any one day, moderately dusty surface material (e.g. high clay content), unpaved road length 50m – 100m.
	Small	<10 HDV (>3.5t) outward movements in any one day, surface material with low potential for dust release, unpaved road length <50m.

5.7 The following dust emissions magnitudes were defined for the proposed development:

- Demolition – the proposed development includes the removal of the existing roof and timber canopy as well as the demolition of internal disused ramps. Timber cladding will also be removed and the existing car park entrance and surrounding wall. Demolition will also be required along the existing façade to create a new entrance. The total volume of buildings to be demolished is less than 20,000m³ and the material to be removed has low potential for dust release. The dust emission magnitude for demolition was therefore defined as '**Small**'.
- Earthworks – the Site currently comprises existing hardstanding within the former sheds and the shell of the building will be retained meaning any earthworks required will be minor. The Site area is less than 2,500m² and therefore the dust emission magnitude was defined as '**Small**'.
- Construction – the proposals include the addition of timber solar shading, solid metal cladding and a new steel framed mezzanine which are all materials with low potential for dust release. No new additional buildings will be constructed on Site and the existing brickwork and structure will be retained. The dust emission magnitude was therefore defined as '**Small**'.
- Trackout – due to the size of the Site, it is anticipated that there will be less than 10 HDV outward movements in any one day during the peak of the construction phase and

there is no unpaved road within the Site. Therefore, the dust emission magnitude for trackout was defined as '**Small**'. A trackout distance of up to 50m from the Site access was used in the assessment, in accordance with the IAQM guidance¹².

- 5.8 A summary of the defined dust emissions magnitudes for the development are provided in **Table 5.2**.

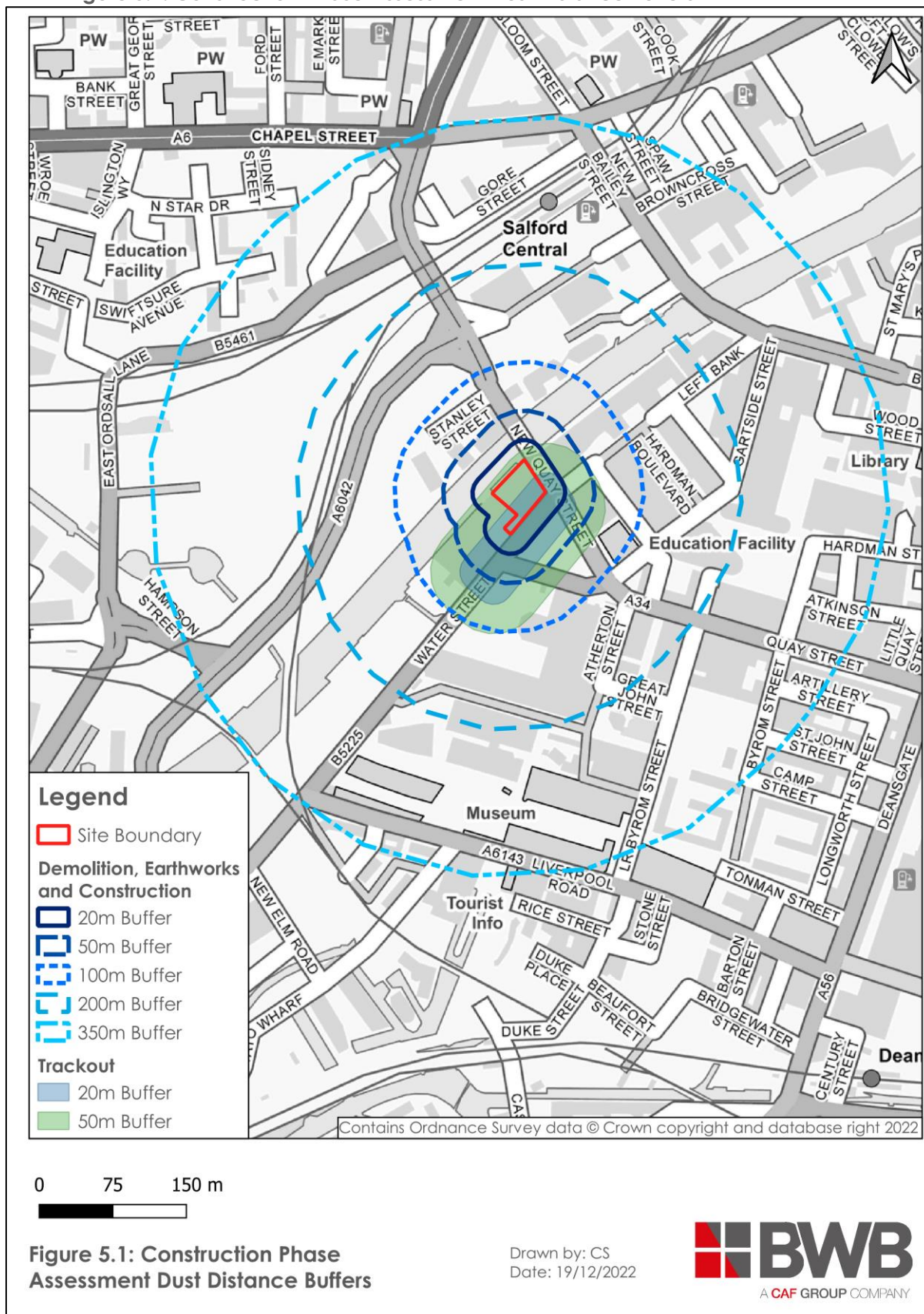
Table 5.2: Summary of Project Defined Dust Emissions Magnitudes

Activity	Dust Emissions Magnitude
Demolition	Small
Earthworks	Small
Construction	Small
Trackout	Small

Step 2B: Define the Sensitivity of the Area

- 5.9 The assessment requires the determination of the sensitivity of the area for the purposes of dust soiling and human health impacts. The sensitivity of the study area takes into account the specific receptors in the vicinity of the Site, the proximity and number of those receptors, the local background concentration of PM₁₀ and site-specific factors. **Figure 5.1** was utilised to determine the number of receptors located within the distance bands provided in the IAQM guidance¹² for determining receptor sensitivity.

Figure 5.1: Construction Phase Assessment Dust Distance Buffers



5.10 The sensitivity of the area is defined below, in accordance with IAQM criteria¹² and summarised in **Table 5.3**.

- Dust Soiling – there are between 10 and 100 highly sensitive residential dwellings, a hotel and less than ten places of work which are considered to be of medium sensitivity to dust soiling, within 50m of demolition, earthworks and construction activities. For trackout, there is a hotel and less than ten places of work within 20m of the routes to be used by construction vehicles. The sensitivity of the area to dust soiling was therefore defined as '**Medium**'.
- Human Health – there are between 10 and 100 highly sensitive residential dwellings, a hotel and less than ten places of work which are considered to be of medium sensitivity for human health effects. The current background PM₁₀ concentrations are below the 24µg.m⁻³. Therefore, the sensitivity of the area to human health impacts was defined as '**Low**'.

Table 5.3: Determination of the Sensitivity of the Area

Potential Impact	Sensitivity			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	Medium	Medium	Medium	Medium
Human Health	Low	Low	Low	Low

Step 2C: Define the Risk of Impacts

5.11 The dust emission magnitude determined in Step 2A is then combined with the sensitivity of the area determined in Step 2B to define the risk of dust impacts with no mitigation applied. The results of this assessment are detailed in **Table 5.4**.

Table 5.4: Summary Dust Risk Table to Define Site Specific Risk

Activity	Step 2A: Dust Emission Magnitude	Step 2B: Sensitivity of the Area	Step 2C: Risk of Dust Impacts
Dust Soiling Effects on People and Property			
Demolition	Small	Medium	Low Risk
Earthworks	Small	Medium	Low Risk
Construction	Small	Medium	Low Risk
Trackout	Small	Medium	Negligible
Human Health Impacts			
Demolition	Small	Low	Negligible
Earthworks	Small	Low	Negligible

Activity	Step 2A: Dust Emission Magnitude	Step 2B: Sensitivity of the Area	Step 2C: Risk of Dust Impacts
Construction	Small	Low	Negligible
Trackout	Small	Low	Negligible

Step 3: Site-Specific Mitigation

- 5.12 The risk of dust impacts, defined in Step 2C of the assessment, is used to determine the mitigation measures required to minimise the emission of dust during construction phase activities. The IAQM guidance¹² provides details of highly recommended and desirable mitigation measures which are commensurate with the risk of dust impacts defined in Step 2C for demolition, construction, earthworks and trackout activities. Where the mitigation measures are general in nature, the highest risk category was applied in accordance with the guidance¹². The highest risk category identified was 'Low Risk' and the recommended mitigation taken from the IAQM guidance¹² is detailed in **Table 5.5** and **Table 5.6**.

Table 5.5: Mitigation Measures for a Low Risk Site

Category	Mitigation Measures for a Low Risk Site	
	Highly Recommended	Desirable
Communication	Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environmental manager/engineer or the site manager.	Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Local Authority. The level of detail will depend on the risk and should include as a minimum the highly recommended measures in this document. The desirable measures should be included as appropriate for the site.
	Display the head or regional office contact information.	
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.	None
	Make the complaints log available to the local authority when asked.	
	Record any exceptional incidents that cause dust and/or air emissions, either on- or off-site, and the action taken to resolve the situation in the log book.	
Monitoring	Carry out regular site inspections to monitor compliance with the DMP, record inspections results, and make an inspection log available to the local authority when asked.	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 checks of surfaces such as street
	Increase the frequency of site inspections by the person accountable for air quality	

Category	Mitigation Measures for a Low Risk Site	
	Highly Recommended	Desirable
	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.	furniture, cars and window sills within 100m of the site boundary, with cleaning to be provided as necessary.
Preparing and maintaining the site	Plan the site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.	Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extended period.
	Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.	Keep site fencing, barriers and scaffolding clean using wet methods.
	Avoid site runoff of water or mud.	Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.
		Cover, seed or fence stockpiles to prevent wind whipping.
Operating vehicle/ machinery and sustainable travel	Ensure all vehicles switch off engines when stationary – no idling vehicles.	Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on un-surfaced haul roads and work areas.
	Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.	
		Ensure equipment is readily available on site to clean any dry spillages - cleaning up spillages as soon as reasonably practicable after the event using wet cleaning methods.
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.	None
	Ensure an adequate water supply on site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.	
	Use enclosed chutes and conveyors and covered skips.	
	Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.	
Waste Management	Avoid bonfires and burning of waste materials.	None

Table 5.6: Mitigation Measures Specific to Demolition, Earthworks, Construction and Trackout

Category	Mitigation Measures	
	Highly Recommended	Desirable
Demolition (Low Risk Site)	Ensure effective water suppression is used during demolition operations. Hand held sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground.	Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).
	Avoid explosive blasting, using appropriate manual or mechanical alternatives.	
	Bag and remove any biological debris or damp down such material before demolition.	
Earthworks (Low Risk Site)	None	None
Construction (Low Risk Site)	None	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.
Trackout (Low Risk Site)	None	Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any materials tracked out of the site. This may require the sweeper being continuously in use.
		Avoid dry sweeping of large areas.
		Ensure vehicles entering and leaving the sites are covered to prevent escape of materials during transport.
		Record all inspections of haul routes and any subsequent action in a site log book.
		Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).

Step 4: Determine Significant Effects

- 5.13 In accordance with IAQM guidance¹², with the implementation of the mitigation measures detailed in Step 3, the residual impacts from the construction phase are considered to be 'not significant'.

6. OPERATIONAL PHASE ROAD TRAFFIC EMISSIONS SCREENING ASSESSMENT

- 6.1 The trip generation for the proposed development was screened using IAQM and EPUK¹³ Stage 1 and Stage 2 criteria to determine whether a detailed air quality assessment was required.

Stage 1

- 6.2 The proposed development comprises more than 1,000m² of floor space but does not propose any car parking provision. In accordance with the IAQM and EPUK guidance¹³, there is no requirement to proceed to Stage 2. However, the proposed development leads to an increase in trip generation associated with the Site and therefore to provide a robust assessment, the Stage 2 indicative criteria for requiring an air quality assessment was also considered.

Stage 2

- 6.3 The trip generation for the proposed development was provided by Vectos, the Transport Consultants for the project.
- 6.4 The proposed development does not include any car parking provision however the nature of the proposed development as a food hall and event space will result in additional taxi trips and service/delivery vehicles travelling to and from the Site. It has been confirmed by Vectos that the predicted trip generation for the proposed development is 146 LDVs and 8 HDVs as a 24 hour AADT flows. The predicted trip generation for HDVs is below the screening criteria detailed in the EPUK and IAQM guidance¹³ of 25 HDVs for development within an AQMA however the predicted LDV trip generation is above the screening criteria of 100 LDVs for development within an AQMA.
- 6.5 The predicted trip distribution was also provided by Vectos. It is anticipated that 46% of vehicles will head east towards the city centre and 54% of vehicles will head north towards Salford. When considering the predicted trip generation, this equates to 67 LDVs travelling east and 79 LDVs travelling north. As such, no single road link will experience an increase in trips above the screening criteria of 100 LDV AADT and detailed air dispersion modelling was not required. The impact of the proposed development on local air quality was therefore considered to be not significant in accordance with the IAQM and EPUK guidance¹³.

Mitigation Measures

- 6.6 The proposed development is not predicted to have a significant impact on air quality and therefore mitigation measures are not required to minimise air quality impacts.

7. CONCLUSION

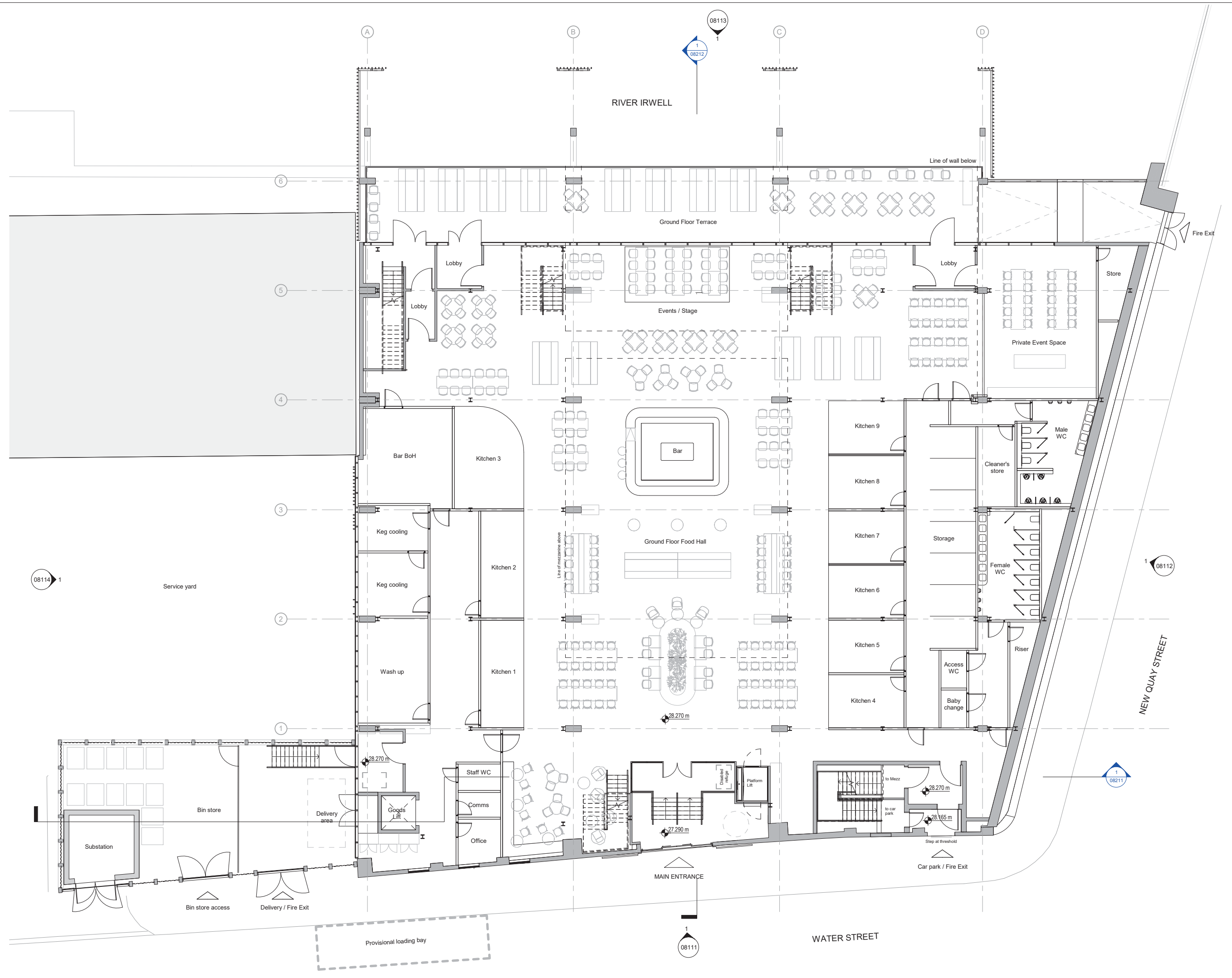
- 7.1 An air quality impact assessment was undertaken for the proposed food hall and event space at Water Street, Manchester known as the Shipyards.
- 7.2 A qualitative construction phase assessment was undertaken and measures were recommended for inclusion in a DMP to minimise emissions during construction activities. With the implementation of these mitigation measures the impact of construction phase dust emissions is considered to be 'not significant' in accordance with IAQM guidance¹².
- 7.3 The predicted trip generation for the proposed development was screened using the IAQM and EPUK¹³ two stage screening process. The predicted trip generation did not exceed the relevant screening criteria for development within an AQMA once distributed on the road network and therefore detailed air dispersion modelling was not undertaken. Air quality impacts as a result of additional road traffic emissions associated with the Site were considered to be not significant.
- 7.4 Based on the assessment results, mitigation measures to minimise air quality impacts are not required.

APPENDICES

APPENDIX A: GLOSSARY OF TERMS

Term	Definition
AADT	Annual Average Daily Traffic flow.
Air quality objective	Policy target generally expressed as a maximum ambient concentration to be achieved, either without exception or with a permitted number of exceedances within a specific timescale (see also air quality standard).
Air quality standard	The concentrations of pollutants in the atmosphere which can broadly be taken to achieve a certain level of environmental quality. The standards are based on the assessment of the effects of each pollutant on human health including the effects on sensitive sub groups (see also air quality objective).
Annual mean	The average (mean) of the concentrations measured for each pollutant for one year. Usually this is for a calendar year, but some species are reported for the period April to March, known as a pollution year. This period avoids splitting winter season between two years, which is useful for pollutants that have higher concentrations during the winter months.
AQAP	Air Quality Action Plan.
AQMA	Air Quality Management Area.
AQS	Air Quality Strategy.
Defra	Department for Environment, Food and Rural Affairs.
EPUK	Environmental Protection UK.
Exceedance	A period of time where the concentrations of a pollutant is greater than, or equal to, the appropriate air quality standard.
HDV	Heavy Duty Vehicles (HGVs + buses and coaches)
HGV	Heavy Goods Vehicles.
IAQM	Institute of Air Quality Management.
LAQM	Local Air Quality Management.
LDV	Light Duty Vehicles (motorbikes, cars, vans and small trucks)
NO	Nitrogen monoxide, a.k.a. nitric oxide.
NO ₂	Nitrogen dioxide.
NO _x	Nitrogen oxides.
Percentile	The percentage of results below a given value.
PM ₁₀	Particulate matter with an aerodynamic diameter of less than 10 micrometres.
PM _{2.5}	Particulate matter with an aerodynamic diameter of less than 2.5 micrometres.
micrograms per cubic metre (µg.m ⁻³)	A measure of concentration in terms of mass per unit volume. A concentration of 1 µg.m ⁻³ means that one cubic metre of air contains one microgram (millionth of a gram) of pollutant.

APPENDIX B: PROPOSED DEVELOPMENT MASTERPLAN



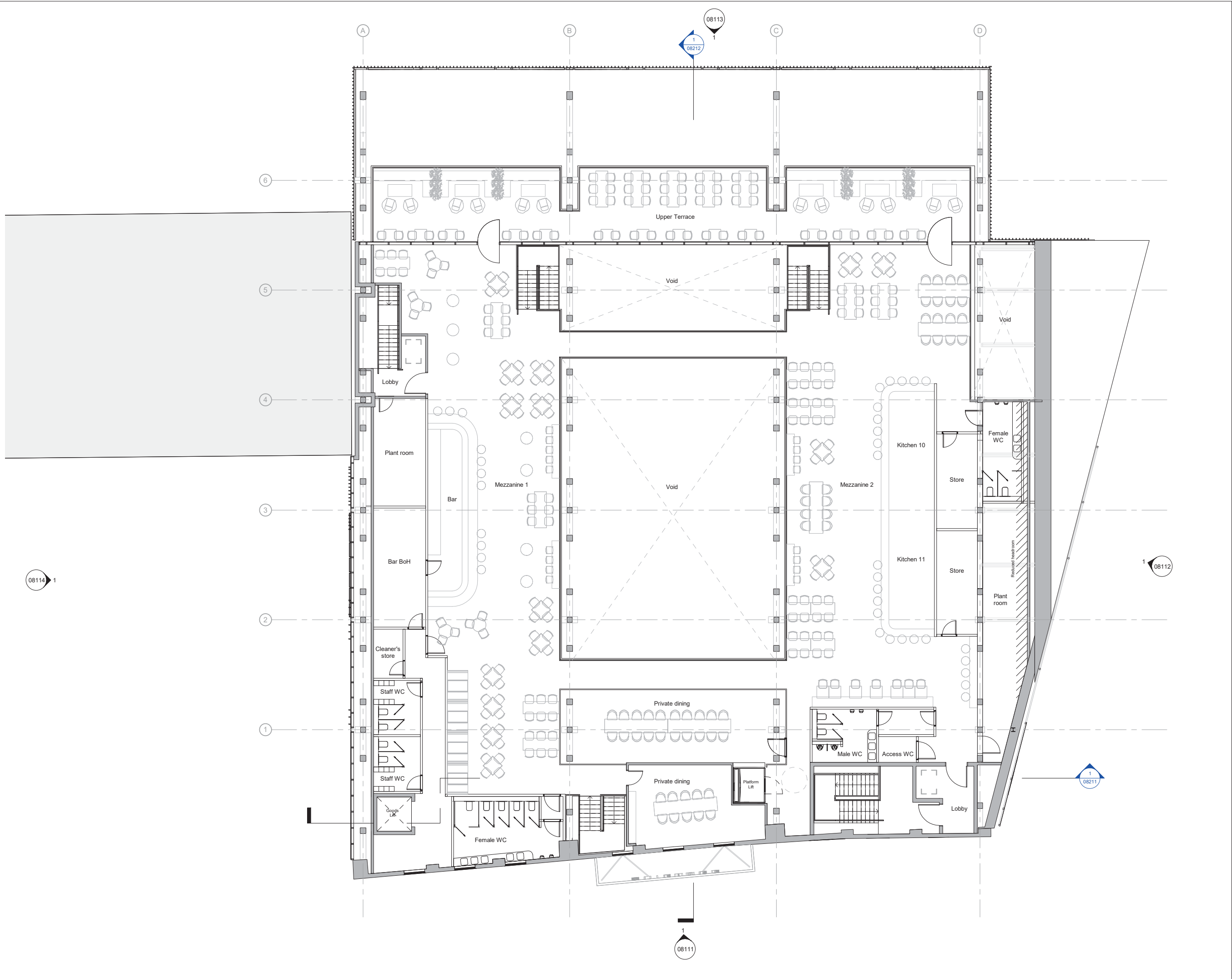
Notes

Do not scale from this drawing.

All dimensions are to be checked prior to construction and any discrepancies are to be identified to the Architect.

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Revisions	
Status	PLANNING
Client	ALLIED LONDON
Project	SHIPYARD WATER STREET MANCHESTER
Title	Level 01 Proposed GA plan
Scale	1 : 100
Size	A1
Date	08/02/22
Drawn	GL
Checked	NS



Notes

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Revisions				
Status	PLANNING			
Client	ALLIED LONDON			
Project	SHIPYARD WATER STREET MANCHESTER			
Title	Level M1 Proposed GA plan			
Scale	Size	Date	Drawn	Checked
1 : 100	A1	08/02/22	GL	NS

APPENDIX C: PLANNING POLICY AND LEGISLATION

National Legislation and Planning Policy

The UK Air Quality Strategy

European Union (EU) legislation forms the basis of air quality policy and legislation in the UK. The EU 2008 ambient Air Quality Directive¹ sets limits for ambient concentrations of air pollutants including nitrogen dioxide (NO₂) and particulate matter (PM₁₀ and PM_{2.5}). The air quality standards and objectives are prescribed through the Air Quality (England) Regulations 2000², as amended, for the purpose of the Local Air Quality Management Framework.

The UK Government are required under the Environment Act 1995³ to produce a national Air Quality Strategy (AQS). The AQS was first published in 1997⁵ and was most recently reviewed and updated in 2007⁷ with miscellaneous amendments added in 2020⁶. The AQS provides an overview of the Government's ambient air quality policy and sets out the air quality standards and objectives to be achieved and measures to improve air quality.

The Environment Act 2021⁴ was granted Royal Assent in November 2021 and contains amendments to Part IV of the Environment Act 1995³ with regard to the Local Air Quality Management regime. Under the Environment Act 2021⁴, the Secretary of State must lay a statement before Parliament setting out progress made in meeting air quality objectives and standard in England and steps taken towards achieving the standards. The Environment Act 2021⁴ also places responsibility on local authorities to co-operate with air quality partners in the preparation of Air Quality Action Plans and identification of measures which should be monitored within the Plan and dates by which they should be implemented.

Part IV of the Environment Act 1995³ requires local authorities in the UK to review local air quality within their administrative area and, if relevant air quality standards and objectives are likely to be exceeded, designate Air Quality Management Areas (AQMAs). Following the designation of an AQMA, local authorities are required to publish an Air Quality Action Plan (AQAP) detailing measures to be taken to improve local air quality and work towards meeting the relevant air quality standards and objectives.

National Planning Policy Framework

The National Planning Policy Framework (NPPF)⁸ was amended in July 2021 and sets out the Government's planning policies for England and how these are expected to be applied.

The NPPF⁸ recognises air quality within Section 15: Conserving and enhancing the natural environment, and states that:

"Planning policies and decisions should contribute to and enhance the natural and local environment by:

[...]

e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by,

unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans;

[...]

Ground conditions and pollution

[...]

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.

[...]

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."

With regard to assessing cumulative effects the NPPF⁸ states:

"Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development.

[...]"

Planning Practice Guidance

The Planning Practice Guidance (PPG) for air quality⁹ was updated in November 2019 and provides guiding principles on how the planning process can take account of the impacts of new development on air quality.

The PPG⁹ sets out the following with regard to air quality and planning:

- "What air quality considerations does planning need to address;
- What is the role of plan-making with regard to air quality;
- Air quality concerns relevant to neighbourhood planning;

- *What information is available about air quality;*
- *When could air quality considerations be relevant to the development management process;*
- *What specific issues may need to be considered when assessing air quality impacts;*
- *How detailed does an air quality assessment need to be; and*
- *How can an impact on air quality be mitigated".*

The PPG⁹ sets out the pollutants for which there are legally binding limits for concentrations and those which the UK also has national emissions reduction commitments.

The PPG⁹ states that development plans may need to consider:

- *"what are the observed trends shown by recent air quality monitoring data and what would happen to these trends in light of proposed development and / or allocations;*
- *the impact of point sources of air pollution (pollution that originates from one place);*
- *the potential cumulative impact of a number of smaller developments on air quality as well as the effect of more substantial developments, including their implications for vehicle emissions;*
- *ways in which new 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; and*
- *opportunities to improve air quality or mitigate impacts, such as through traffic and travel management and green infrastructure provision and enhancement".*

The PPG⁹ also states what may be considered relevant to determining a planning application and these include whether a development would:

- *"Lead to changes (including any potential reductions) in vehicle-related emissions in the immediate vicinity of the proposed development or further afield. This could be through the provision of electric vehicle charging infrastructure; altering the level of traffic congestion; significantly changing traffic volumes, vehicle speeds or both; or significantly altering the traffic composition on local roads. Other matters to consider include whether the proposal involves the development of a bus station, coach or lorry park; could add to turnover in a large car park; or involve construction sites that would generate large Heavy Goods Vehicle flows over a period of a year or more;*
- *Introduce new point sources of air pollution. This could include furnaces which require prior notification to local authorities; biomass boilers or biomass-fuelled Combined Heat and Power plant; centralised boilers or plant burning other fuels within or close to an air quality management area or introduce relevant combustion within a Smoke Control Area; or*

extraction systems (including chimneys) which require approval or permits under pollution control legislation;

- *Expose people to harmful concentrations of air pollutants, including dust. This could be by building new homes, schools, workplaces or other development in places with poor air quality;*
- *Give rise to potentially unacceptable impacts (such as dust) during construction for nearby sensitive locations;*
- *Have a potential adverse effect on biodiversity, especially where it would affect sites designated for their biodiversity value".*

The PPG9 provides guidance regarding what should be included within an air quality assessment. Examples of potential air quality mitigation measures are also provided.

Local Planning Policy

Manchester's Local Development Framework: Core Strategy Development Plan Document

MCC adopted the Local Development Framework: Core Strategy Development Plan Document¹⁰ in 2012. The Document¹⁰ covers a five year period between 2012 and 2027 and outlines MCC's vision for Manchester as well as planning policies to deliver that vision. A review of the Document¹⁰ indicated the following policies are relevant to air quality:

"Policy CC 5

Transport

[...]

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

[...]

Policy T 1

Sustainable Transport

To deliver a sustainable, high quality, integrated transport system to encourage modal shift away from car travel to public transport, cycling and walking, to support the needs of residents and businesses and to prepare for carbon free modes of transport, the Council will support proposals that:-

[...]

Would reduce the negative impacts of road traffic for example, congestion, air pollution and road traffic accident casualties.

[...]

Policy EN 16

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

[...]

Policy DM 1

Development Management

All development should have regard to the following specific issues for which more detailed guidance may be given within the 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."

The above policies were taken into consideration throughout the undertaking of the assessment

