Deloitte.



Plot 9b

Environmental Statement: Volume 1

December 2024

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Important notice: This Environmental Statement has been prepared by Deloitte, with technical input from Hydrock, now Stantec; Renaker; Ridge; Enfusion; Fisher acoustics; Amion; Proximity; TPM and Arc Aero "the Consultants". Chapter 1, Volume 1 of this Environmental Statement sets out the parties responsible for preparing each Chapter and associated figures and appendices.

Although we have read the Consultants' reports for consistency and provide our observations based on our knowledge and experience, we accept no liability or responsibility for the Consultant's Reports and will not be responsible for the technical content of Chapters 5-15, Volume 1, nor Volume 2, nor the technical content of the associated separate Non-Technical Summary.

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1. Introduction

Context

1.1. This Environmental Statement ('ES') accompanies a planning application for Planning Permission for a purpose built student accommodation (Use Class Sui Generis) development (the 'Proposed Development'), submitted on behalf of Vita Meadow Ltd (the 'Applicant') to Manchester City Council ('MCC').

1.2. The planning application relates to land within Plot 9b of the First Street Development Framework Area of Manchester City Centre and an associated construction compound on the land east of River Street.

1.3. The description of the Proposed Development is as follows:

"Erection of a purpose-built student accommodation (PBSA) building (Sui Generis), alongside ancillary amenity space, landscaping, secure cycle parking and other associated works; and use of land east of River Street as a construction compound".

The Site

1.4. There are two Sites subject to this application (referred to collectively as 'The Sites'). This includes:

- 'The Proposed Development Site': Extending to approximately 0.25 ha, the Proposed Development Site is bound to the north by Plot 9A of the First Street Development Framework (FSDF) area (currently being redeveloped into an office block of up to 9no. storeys (pursuant to Planning Permission Ref. 132600/FO/2021)); to the east by Plot 10A (which has planning permission for an office block of up to 13no. storeys (Ref. 136043/FO/2023)); to the south east by Hulme Street; and to the west by Medlock Street.
- 'The Construction Compound Site': Extending to approximately 0.46 ha, the Construction Compound Site is bound to the north by the River Medlock; to the east by Cambridge Street; to the south by Macintosh Mills; and to the west by River Street.

1.5. The construction compound site is currently used as a construction compound, in relation to Plot 10b First Street. The Proposed Development Site was most recently used as a Construction Compound for Plot 9a however is now vacant.

1.6. Figure 1-1 below shows the red line boundary of the Proposed Development Site and Construction Compound Site (Proposed Development Site to the west and Construction Compound Site to the east).

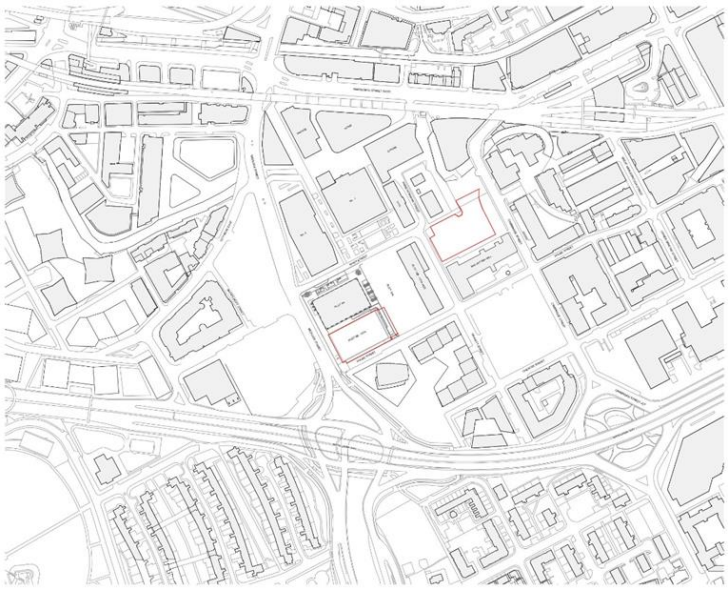


Figure 1-1- Site Location Plan (Source: Tim Groom Architects)

1.7. The Sites form part of the First Street Development Framework (FSDF), having first been incorporated into the "Central Development Zone" in 2012. The vision for First Street has developed and evolved since 2012, as highlighted within subsequent updates to the FSDF. Manchester City Council (MCC) adopted the latest FSDF in 2020. This Framework sets a strategic vision for the area and provides guidance for the development of a high-quality neighbourhood, with sustainable new buildings and well-designed public spaces.

1.8. Further details of the Sites are set out in Chapter 4 of this ES. Other relevant details are provided in each chapter where environmental designations apply.

The Proposed Development

1.9. The Proposed Development Site sits among the upcoming plots of the FSDF area and addresses the key corner at the gateway to the city centre along Medlock Street. It provides the opportunity to add to the variety of student residential options available in First Street and complement the upcoming office and retail developments in the surrounding area.

The Proposed Development comprises the delivery of a PBSA building, of up to 33 storeys. Table 1, below, summarises the proposals:

Table 1.1 Proposed Development

Details of Proposed Development	
Student Accommodation	861 studios (Use Class Sui Generis). Including: • 5% (43 no. bed spaces) accessible bedspaces, including: • 2 no. 'Fully Fitted Wheelchair Accessible' studios (M4)3)) at Practical Completion with all necessary handrails, pull cords and alarms. • 2 no. rooms will be 'Future Wheelchair Accessible' studio (M4(2)), sized with a larger bathroom to accommodate a wheelchair and power connections for the future addition of equipment.

	• The remainder will be 'Future Wheelchair Convertible (M4(2))'- large enough in footprint that they can be retrospectively converted to a 'Fully Fitted Wheelchair Accessible' studio, if and when the need arises.
Maximum Height	Ground + 33 storeys (+130.785 AOD)
Car Parking	0
Cycle Parking	146 (17% cycle spaces)

1.10. The Proposed Development will complete the urban block defined by Medlock Street, River Street and Hulme Street and provide much needed student accommodation in a convenient location accessible by public transport. It will provide an active frontage onto Medlock Street and contribute to continued regeneration of First Street.

1.11. In addition to the above, the Site bound to the north by the River Medlock; to the east by Cambridge Street; to the south by Macintosh Mills; and to the west by River Street, is proposed to be used as a Construction Compound.

1.12. The Proposed Development will complete the urban block defined by Medlock Street, River Street and Hulme Street and provide much needed student accommodation in a convenient location accessible by public transport. It will provide an active frontage onto Medlock Street and contribute to continued regeneration of First Street.

1.13. The Construction Compound Site comprises land for the temporary cabins and set-down space that will be in situ for the duration of the construction period.

Requirements for EIA

1.14. The EIA process is the mechanism by which development proposals are appraised in terms of their likely environmental effects, in addition to engineering and technical considerations.

1.15. The purpose of the EIA is to establish the nature of the Proposed Development and the environment in which it is likely to take place, during both construction and operational phases, as to identify the likely significant effects on the environment. The assessment compares the existing situation at the start of the work (baseline) with the scenarios set out at Paragraph 2.38.

1.16. The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (the 'EIA Regulations') require that any Proposed Development falling within the description of a 'Schedule 2 development' (as defined within the meaning of the EIA Regulations), will be subject to an EIA where such development is likely to have 'significant' effects on the environment by virtue of such factors as its nature, size or location (Regulations 2(b)).

1.17. The Proposed Development is considered likely to fall under the category of 'urban development projects' (Schedule 2, 10, (b)) where:

i. The development includes more than 1 hectare of urban development which is not dwellinghouse development; or

ii. The development includes more than 150 dwellings; or

iii. The overall area of the development exceeds 5 hectares.

1.18. The Proposed Development includes 861 dwellings, which exceeds the threshold in relation to parts (ii) listed in Schedule 2, 10 (b) of the Regulations. In addition, given that the Proposed Development results in development of a greater scale than the existing use, an EIA is therefore considered appropriate to test the likely significant effects of the Proposed Development.

1.19. A formal EIA Screening/Scoping request was submitted to MCC on 01 July 2024 requesting formal confirmation of the proposed scope of the Environmental Impact Assessment required in respect of the Proposed Development. An e-mail was issued 16 September 2024 to update the Screening/Scoping

request due to amendments to the proposals.

1.20. A formal scoping opinion was received on 16 October 2024. The technical chapters are based on a scope of assessment that has been agreed with the relevant statutory consultees through the scoping exercise. A copy of the Scoping Report and Scoping Opinion is included in Appendix 2.1 and 2.2 of this ES.

1.21. In accordance with the EIA regulations, this ES sets out the following information:

- A description of the Proposed Development;
- An outline of the main alternatives studied;
- A description of the aspects of the environment likely to be significantly affected by the proposals;
- A description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment;
- A non-technical summary; and
- An indication of any difficulties encountered by the Applicant in compiling the required information.

Project Team

1.22. Deloitte has significant experience and expertise in managing the EIA process and hold the IEMA EIA Quality Mark. Details of the Project Team, EIA Technical Team and qualifications are set out in table 1.1 Table 1.2 below.

Table 1.2 Project Team and Technical Discipline

Consultant	Technical Discipline
Deloitte	Planning and EIA Co-ordinator
Tim Groom Architects	Architecture and Design
Hydrock, now Stantec	Air Quality
Renaker	Construction Management Plan
Ridge	Climate Change
Enfusion	Human Health
Fisher acoustics	Noise and Vibration
Amion	Socio-Economic
Proximity	Sunlight, Daylight and Overshadowing
TPM	Townscape and Visual Impact
Arc Aero	Wind Microclimate

Table 1.3 EIA Technical Team

Topic:	EIA Consultant	Qualifications:
EIA Coordinator	Deloitte	PIEMA, MRTPI, MPlan, BA (Hons) IEMA Quality Mark Registered
Air Quality	Hydrock, now Stantec	CEnv, BSc (Hons) Geology, BSc (Hons) Geography
Construction Management Plan	Renaker	
Climate Change	Ridge	BSc Environmental Science, MA Environment & Business, Chartered Environmentalist (CEnv), BSc Geography, MSc EIA, Auditing & EMS
Human Health	Enfusion	BSc MSc CEnv FIEMA
Noise and Vibration	Fisher acoustics	Chartered Engineer, Bachelor of Engineering in applied acoustics
Socio-Economic	Amion	Member of Institute of Economic Development
Sunlight, Daylight and Overshadowing	Proximity	MRICS
Townscape and Visual Impact	TPM	Architect, Director, Landscape Architect CMLI
Wind Microclimate	Wind Microclimate	BEng(Hons) Mechanical Engineering, MSc Advanced Mechanical Engineering, MEng Aeronautical Engineering, CEng MIMechE

Organisation of the Environmental Statement

1.23. This ES comprises 15 chapters and is supported by figures (located at the back for each Chapter within Volume 1) technical appendices (within a separate volume 2). A non-technical summary (NTS) of the full ES is provided as a separate standalone document.

1.24. Figures have been referenced using the Chapter number as a prefix followed by the number of the figure within any given Chapter. Appendices have been referenced in the same way but due to their size, they are contained separately in Volume 2. Table 1.3 sets out the structure of the ES.

Table 1.4 Structure of this Environmental Statement

Chapter No.	Chapter Title	Description
VOLUME 1		
1	Introduction	Introduction to the ES, EIA requirements, details of the project team, ES organisation and availability.
2	EIA Methodology	Methods used to prepare each Chapter, description of ES structure and content, generic significance criteria, scoping and consultation.
3	Alternatives and Design Evolution	Outline of the main alternatives considered by the Applicant.
4	Site Description and Description of Development	Site description and details of the Proposed Development.
5	Construction Management – Programme and Methodology	Details of the construction management methodology.
6	Townscape and Visual Impact	To assess the likely significant effects of the Proposed Development in relation to townscape and visual impact.
7	Air Quality	To assess the potential air quality impacts associated with the Proposed Development due to changes in traffic flows, construction etc. It also includes a cumulative assessment of impacts.
8	Noise and Vibration	To assess the likely significant effects of the Proposed Development in relation to noise and vibration.
9	Daylight / Sunlight / Overshadowing	To assess the impacts of the Proposed Development in relation to daylight and sunlight for nearby residential properties and overshadowing in relation to relevant public spaces.
10	Wind Microclimate	To assess the likely significant effects of the Proposed Development in relation to environmental wind, in accordance with Policy EN2 of the Core Strategy and the 'Guide to Development in Manchester'
11	Climate Change	To assess the nature and magnitude of Greenhouse Gas Emissions, which are likely to arise from the Proposed Development during construction and operation, and the impact of this contribution towards climate change, in addition to mitigation measures required to minimise this contribution.
12	Human Health	To assess the likely significant effects of the Proposed Development on Human Health.
13	Socio-Economic	To assess the likely socio-economic impacts of the Proposed Development upon the Site and surrounding area.
14	Summary of Residual Impacts	Summary of the residual impacts of the proposed development.
15	Type 1 Cumulative Effects	An assessment of the combined effects arising from the Proposed Development upon a set of defined sensitive receptors.
VOLUME 2	Technical Appendices	Technical data and reports to support the Chapters in Volume 1
Non-Technical Summary		A short, concise document written in a non-technical language, necessary to meet the requirements of EIA regulations, to make the ES accessible to a non-technical audience.

Other Documents

1.25. Together with this ES and its appendices, the following documents will be submitted to MCC in support of this planning application:

Table 1.5 Submission Documents

Application Documentation	Author
Accommodation Schedule	Tim Groom Architects
Application Site Boundary and Location Plan	Tim Groom Architects
Design and Access Statement (Inc. Schedule of Works)	Tim Groom Architects
Existing and Proposed site plans, sections and elevations (including drawing schedule)	Tim Groom Architects
Landscape Strategy and drawings	TPM
Verified views	Our Studio
Marketing CGIs	Our Studio
Planning and Tall Building Statement	Deloitte
Student Justification Statement	Deloitte
Statement of Community Involvement	Deloitte
Topographical Survey	Survey Ops
Ecology Assessment and Biodiversity Net Gain Assessment	Penny Anderson Associates
Crime Impact Statement	Greater Manchester Police
Flood Risk Assessment and Drainage Strategy	ROC
Heritage Assessment	Deloitte
Archaeological Assessment	PCA
Transport Statement	SLR Consulting
Management of Student Move in and Move out and on Management of Deliveries	SLR Consulting
Framework Travel Plan	SLR Consulting
Servicing and Waste Management Strategy	SLR Consulting
Construction Management Plan	Renaker
Construction Waste Management Plan	Renaker
Environmental Standards Statement	Element
Energy Statement	Futurserv
Lighting Strategy	TPM
Broadband Connectivity Assessment	Page Power
TV Survey	Page Power
Local Labour Agreement	Vita
Fire Strategy Report	Design Fire Consultants
Ventilation/extraction	Futurserv
Ground Conditions (Phase 1) - Phase 1 Desktop Study and Phase 2 Intrusive Investigation Report	ROC
Remediation Strategy	ROC
Piling Risk Assessment	ROC
UXO Risk Management	ROC
Local Benefits Proposal	Vita
Circular Economy Statement	Element
Public Realm Strategy	TPM
Lighting Design	PlanIt

Application Documentation	Author
Surface Water Drainage	ROC

Environmental Statement Availability

1.26. The ES is available for public viewing on Manchester City Council's Public Access website at the following address: http://pa.manchester.gov.uk/online-applications/ once the application has been submitted and validated.

The ES may be purchased in volumes, the costs for which are set out below:

Volume 1: ES Main Text and Figures - £150;

Volume 2: ES Appendices - £150;

Volume 3: Non-Technical Summary (NTS) - £15;

Full Copy (Volumes 1 and 2, and NTS) of the ES on CD - £15.

1.27. For copies of any the above, please contact the Manchester Planning Team at Deloitte:

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100 Embankment,
Cathedral Approach,
Manchester,
M3 7FB

2. EIA Methodology

Introduction

2.1. This Chapter sets out the methodology used to prepare each Chapter of the ES and describes its structure and content. In particular, it sets out the process of identifying and assessing the likely significant effects of the Proposed Development on the environment as defined in Chapter 1 and described in detail in Chapter 4.

Legislation and Guidance

2.2. The ES has been prepared to comply with EIA Regulations, which implement European Council Directive No. 85/337/EEC as amended by Directive 2014/52/EU and entered into force on 17 May 2017. The EU legislation as it applied to the UK on 31 December 2020 is now a part of UK domestic legislation, under the control of the UK's Parliaments and Assemblies. The European Union (Withdrawal) Act 2018 introduced "retained EU law" which provides that EU-derived domestic legislation continues to have effect.

2.3. Reference has also been made to currently available good practice guidance in EIA, including:

- Circular 02/99: Environmental Impact Assessment
- The European Commission's numerous EIA guidance documents available here: http://ec.europa.eu/environment/eia/eia-support.html
- Guidance on EIA Scoping, European Commission, June 2001
- Guidance on Transport Assessment, DCLG and DfT, March 2007
- National Planning Practice Guidance – Department for Communities and Local Government (March 2014 and continuously updated as a 'live' resource)
- Reference has been made to the Institute of Environmental Management and Assessment (IEMA) publications, including:
- IEMA ES Review Criteria
- IEMA Guidelines for Environmental Impact Assessment (2004)
- IEMA Special Report into the State of Environmental Impact Assessment Practice in the UK (2011)
- IEMA Shaping Quality Development (2015)
- IEMA Delivering Quality Development (2016)
- IEMA Delivering a Proportionate EIA (2017)

2.4. This ES also had regard to the National Planning Policy Framework (NPPF) 2024. The NPPF sets out the Government's economic, environmental and social planning policies for England; articulating the Government's aspiration for sustainable development. The NPPF has also been considered where it is relevant to EIA.

2.5. As relevant to the ES technical chapter's scope, methodology and assessment of effects, key local planning policy has been considered. These include:

- Places for Everyone (PfE) (2024)
- Manchester City Council Core Strategy (2012)
- Saved Unitary Development Plan Policies (1995)

2.6. Any additional planning policy or guidance documents considered relevant have been identified within the relevant technical chapters.

Screening and Scoping

2.7. A formal EIA Screening and Scoping request was submitted to MCC on 01 July 2024 (Appendix 2.1) requesting a formal opinion and confirmation as to the proposed scope of the Environmental Impact Assessment required in respect of the Proposed Development. An e-mail was issued 16 September 2024 to update the Screening/Scoping request due to amendments to the proposals, which comprised:

- An increase in height from 28 stories (approx. 120m AOD) to 33 stories (actual 130.785m AOD);
- Increase in proposed units from 820 to 861;

2.8. All technical consultants confirmed that this change in parameters would not materially alter their scope or methodologies form those proposes in the original Scoping Request. The only change would be in relation to TVIA, with 3 new viewpoint locations agreed with MCC.

2.9. A formal scoping opinion was received 16 October 2024 (Appendix 2.2), which confirmed agreement to scope and contents of the EIA. The results of the scoping exercise have determined the subject areas of the EIA and any comments received as part of this Scoping response from the LPA have been factored into this ES.

2.10. Based on the contents of Appendix 2.1 and 2.2, the following remaining chapters have been scoped into the EIA:

- Alternatives and Design Evolution
- Site and Development Description
- Construction Management – Programme and Methodology
- Townscape and Visual Impact
- Air Quality
- Noise and Vibration
- Daylight / Sunlight / Overshadowing
- Wind Microclimate
- Climate Change
- Human Health
- Socio-Economic
- Summary of Residual Impacts
- Type 1 Cumulative Effects

Consultation

2.11. The Proposed Development has been prepared in consultation with MCC and a range of technical statutory stakeholders (refer to table 2.1), which were also consulted upon as part of the EIA Scoping exercise.

Figure 2.1 Scope of Stakeholder Consultation

Planning Application Stakeholder Consultation
Manchester City Council – Environmental Health, Highways
Greater Manchester Police
Transport for Greater Manchester (TfGM)
Greater Manchester Ecological Unit
Greater Manchester Archaeological Advisory Service (GMAAS)
Manchester Airport Safeguarding Team
Barton Aerodrome

NATS
Local ward Councillors
Local businesses and residents

2.12. In addition to the stakeholder consultation noted above, the Proposed Development has benefitted from public consultation. Further details are provided in the Statement of Consultation that accompanies the application. Considerations of any legitimate alternative proposals are set out in Chapter 4 of this ES.

Non-significant effects

2.13. It has been confirmed via the scoping opinion that the following disciplines will not give rise to likely significant effects on the environment and therefore do not require inclusion in the Environmental Statement. An explanation for scoping out each discipline set out below is provided in the EIA Scoping Report in Appendix 2.1:

- Agricultural Circumstances;
- Archaeology;
- Aviation;
- Ecology and Nature Conservation;
- Ground Conditions;
- Transport;
- TV Reception;
- Flood Risk and Drainage;
- Solar Glare;
- Built Heritage;

Approach to Technical Studies

2.14. Various technical studies were commenced at an early stage in the process. The findings of the baseline environmental studies played an important role in the design of the Proposed Development by defining the environmental sensitivities, constraints and opportunities associated with the Site.

2.15. Design reviews, attended by members of the project team, were held throughout the pre-application progress. These reviews provided a valuable forum for the exchange of information and ensured that the project team was fully aware of the environmental constraints and opportunities of the interactions between disciplines. Pre-application engagement was also undertaken with Manchester City Council as the Local Planning and Highways Authority.

2.16. The technical studies have been undertaken in accordance with current best practice. Specific guidance used is referenced within each of the respective assessment chapters.

2.17. The majority of assessments involved consultations with statutory and non-statutory bodies, desk-based research, Site inspections and surveys, impact prediction and mitigation.

2.18. The assessment and conclusions of the ES are based on the description of the Proposed Development provided in Chapter 4.

Structure of Technical Chapters

2.19. Each technical Chapter of the ES has been set out broadly in line with Table 2.2. Where chapters differ from the structure set out below, the reasons for that have been clearly articulated within the chapter introduction.

Table 2.2. Structure of ES Technical Chapters

Chapter Title	Description
Introduction	Introduction to the ES, EIA requirements, details of the project team, ES organisation and availability.
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Type 1 Cumulative Effects	An assessment of the combined effects arising from the Proposed Development upon a set of defined sensitive receptors.

Magnitude

2.20. The methodology for determining the scale, or magnitude, of effect is set out in table 2.3.

Table 2.3 Methodology for Assessing Magnitude

Magnitude of Impact	Criteria for Assessing Effect
Major	Total loss or major/substantial alteration to key elements/features of the baseline conditions such that the post development character/composition/attributes will be fundamentally changed.
Moderate	Loss or alteration to one or more key elements/features of the baseline conditions such that post development character/composition/attributes of the baseline will be materially changed.
Minor	A minor shift away from baseline conditions. Change arising from the loss/alteration will be discernible/detectable but not material. The underlying character / composition / attributes of the baseline condition will be similar to the pre-development circumstances/situation.
Negligible	Very little change from baseline conditions. Change barely distinguishable, approximating to a 'no change' situation.

Sensitivity

2.21. The sensitivity of a receptor is based upon the relative importance of the receptor using the scale in Table 2.4

Table 2.4: Methodology for Assessing Sensitivity

Sensitivity	Examples of Receptor
High	The receptor/resource has little ability to absorb change without fundamentally altering its present character, or is of international or national importance.
Medium	The receptor/resource has moderate capacity to absorb change without significantly altering its present character, or is of high importance.
Low	The receptor/resource is tolerant of change without detriment to its character, is of low or local importance.

Significance

2.22. The significance of an environmental effect is determined by the interaction of magnitude and sensitivity, whereby the impacts can be positive or negative. Table 2.5 below shows how magnitude and sensitivity interact to derive effect significance.

Table 2.5 Methodology for Assessing Significance

Magnitude	Sensitivity		
	High	Medium	Low
Major	Major Adverse/Beneficial	Major - Moderate Adverse/Beneficial	Moderate or Minor Adverse/Beneficial
Moderate	Major - Moderate Adverse/Beneficial	Moderate Adverse/Beneficial	Minor Adverse/Beneficial
Minor	Moderate or Minor Adverse/Beneficial	Minor Adverse/Beneficial	Minor Adverse/Beneficial - Negligible

Magnitude	Sensitivity		
	High	Medium	Low
Negligible	Negligible	Negligible	Negligible

2.23. The above magnitude and significance criteria have been provided as a guide for technical specialists to assess impact significance. Where discipline specific methodology has been applied that differs from the generic criteria above, this has been clearly explained within the given Chapter under the heading of 'Assessment Methodology and Significance Criteria'.

2.24. For the purposes of this Environmental Statement, an effect will be potentially 'significant' if it is classed as either 'moderate' or 'major' (bold text in Table 2.5).

Baseline Conditions

2.25. Each technical Chapter includes a section which describes and evaluates the baseline environmental conditions (i.e. the current situation and anticipated changes over time assuming the Site remains unchanged). Baseline data has been obtained from a variety of sources, including published documents, maps, historical information and Site survey data. Given the complex nature of the Site and surroundings, each technical Chapter (Chapters 5 to 15) includes a clear description of what is assumed as the baseline against which the assessment is being made.

2.26. The method used to obtain baseline information, where relevant and possible, has been clearly identified within each technical Chapter and agreed in advance with statutory consultees.

Mitigation

2.27. Any adverse environmental effects have been considered for mitigation at the design stage and, where practicable, specific measures have been put forward. Measures have been considered based on the following hierarchy of mitigation:

- Avoidance;
- Reduction;
- Compensation;
- Remediation;
- Enhancement.

2.28. Where the effectiveness of the mitigation proposed has been considered uncertain, or where it depends upon assumptions of operating procedures, data and/or professional judgement has been introduced to support these assumptions.

2.29. Mitigation recommended during the construction phase would be set out in the Construction Management Plan (CMP) to be agreed with MCC prior to the commencement of work and implemented throughout the duration of the works. Outline mitigation measures to be included in a future CMP are set out in Chapter 5: Construction Programme Management – Programme Methodology, and are cross referred to in the relevant chapters. It is anticipated that a condition be attached to any subsequent consent that requires submission and approval of a CMP.

2.30. Mitigation to be implemented during the operational phase would be secured through planning conditions and obligations, which are explicitly referenced in each chapter.

Residual Effects

2.31. The likely significant effects on the environment, assuming the successful implementation of mitigation measures proposed, have been estimated within each Chapter. These are termed 'residual effects' and are considered in Chapter 16 of this Statement.

Cumulative Effects

2.32. A search of Manchester City Council's planning applications database and knowledge of the area has identified schemes for which cumulative effects are considered more likely, this includes other reasonably foreseeable schemes, i.e. those contained within the Development Plan or other material considerations. A full list, as of October 2024 is contained within the Scoping Report at Appendix 2.1, to which agreement has been provided from the Local Planning Authority as part of the Scoping Opinion process.

2.33. The ES considers the potential for likely significant effects on the environment resulting from consented or reasonably foreseeable activities or developments in the area, which could lead to potentially significant cumulative effects in conjunction with the Proposed Development ('Committed Developments'). Each technical Chapter (Chapters 5-15) has assessed the potential for likely significant effects on the environment, as a result of the above committed developments, together with the Proposed Development, which are known as Type 2 cumulative effects.

2.34. In addition, Chapter 16 assesses the Type 1 Cumulative effects. Type 1 cumulative effects are also known as 'inter-project' effects, which are the combined effects arising from the development upon a set of defined sensitive receptors.

Assumptions and Limitations

2.35. The principal assumptions that have been made and any limitations that have been identified in preparing the ES are set out in each technical Chapter. General assumptions include the following:

- All of the principal land uses adjoining the Site remain. Where redevelopment proposals have been granted Planning Permission, the effect of those proposals are considered as part of the Cumulative Impacts;
- Information received from third parties is complete and up to date;
- The various stages of the Proposed Development will satisfy minimum environmental standards, consistent with contemporary legislation, practice and knowledge;
- Assessments are based upon, and conclude, the 'worst case' effects that would arise from the application as defined by the description of development set out in Chapter 4, Site Description and Description of Development;
- Construction and demolition methods and phasing will follow the timetable and methods set out in Chapter 5, Construction Management;
- Conditions will be attached to the Planning Permission that will control disturbance during the Proposed Development; and,
- Necessary off-site services infrastructures for the Proposed Development will be provided by statutory undertakers.

Objectivity

2.36. The technical studies undertaken with the ES have been progressed in a transparent, impartial, and unbiased way with equal weight attached, as appropriate, to beneficial and adverse effects. Where possible, this has been based upon quantitative and accepted criteria together with the use of value judgements and expert interpretations.

2.37. The assessment has been explicit in recognising areas of limitation within the ES and any difficulties that have been encountered, including assumptions upon which the assessments are based. Where appropriate, the assessment of significance has been given confidence levels.

Scenarios to be Tested

2.38. Unless stated otherwise within each technical chapter, the following scenarios will be tested:

- Scenario 1: Existing site (baseline)
- Scenario 2: Existing site (baseline) with Proposed Development; and

- Scenario 3: Existing site (baseline) with cumulative developments and Proposed Development.

3. Alternatives and Design Evolution

Introduction

3.1. Regulation 18(3) and Paragraph 2 of Schedule 4 of the EIA Regulations requires the Applicant to provide an outline of the main alternatives studied and an indication of the main reasons for the choice made, considering the environmental effects.

3.2. Additionally, Schedule 4, Paragraph 2 of the EIA Regulations1 states that an ES should include: "a description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects".

3.3. In considering the evolution of the Proposed Development, all aspects have been evaluated in response to several longstanding strategic objectives and established principles, embedded in local planning policy and guidance, as well as within the suite of planning applications and major development proposals that have come forward within the Site overall to date.

3.4. This Chapter considers the following four options in the context of these requirements and the existing Development Brief:

- The 'do nothing' alternative where the Proposed Development is not progressed.
- Alternative Locations for the Proposed Developments.
- Alternative Technologies.
- Alternative Uses
- Alternative Designs (including size and scale) for the Proposed Development.

3.5. The current proposals are the product of an iterative design process over the past ten months. The design team has engaged closely with Manchester City Council, statutory and non-statutory consultees, and local communities throughout this period to ensure that the optimum development proposal was produced on Site.

The "do nothing" alternative

3.6. The "do nothing" scenario refers to the option of leaving the Site in its current use. In its current use, the Site is Brownfield land but is designated within two strategic priority areas of the city centre, these include the First Street Development Framework (FSDF) and the Oxford Road Corridor.

3.7. The FSDF was endorsed by the MCC Executive Committee in 2005, and since updated in 2012, 2015, 2018 and 2020. The FSDF recognises that this site, alongside the neighbouring plots of land presents a significant strategic opportunity to transform a currently underutilised and underperforming area of the City Centre.

3.8. Manchester, and the wider Greater Manchester region, is at the heart of the Northern Powerhouse. The City of Manchester is also acknowledged as the capital of the north of England and the centre point of the trans-Pennine and pan-northern economy. As a primary driver of economic and employment growth, Manchester has an important role to play in providing the infrastructure capable of providing opportunities for the wider conurbation and beyond.

3.9. As such, Manchester City Centre is a location which has an important contribution to make to levelling-up and re-balancing the national economy but suffers with a constrained city centre land supply. Therefore, there is a need to ensure the city centre can provide the modern infrastructure to capture economy and

employment growth. It is in this regard, the Proposed Development forms part of a wider proposition of First Street to deliver sustainable economic growth, including with this PBSA element supporting the higher education section within the region.

3.10. The development of Plot 9b offers the opportunity to deliver a consistent range and diversity of complementary uses across First Street in accordance with the FSDF. This would enable First Street to maintain its competitiveness and appeal as an office location while actively contributing to the regeneration goals outlined in the FSDF. Securing a viable use for Plot 9b, that can be delivered at pace, is integral in improving the prospects of First Street in securing future office occupiers and accelerating the delivery and completion of First Street. At present, there are a number of vacant plots along Medlock Street (with 1 City Road and Premier Inn having been demolished). As a result, there is a growing need to initiate development in order to improve the liveliness and competitiveness of First Street.

3.11. Of note, one of the fundamental aspirations of the FSDF was to ensure that First Street strengthens its position as a strategic office location. At present, First Street already encompasses a significant proportion of office accommodation, which importantly will need to be enhanced by the range of leisure, cultural and residential uses.

3.12. As of June 2024, circa 554,000 sq. ft. commercial floorspace is operational or under construction across First Street, and Number 1 Tony Wilson Place, #8 First Street and Plot 9a. A further 1.2m sq. ft. is approved at One City Road, One Medlock Street, and Plot 10a. Commercially-led mixed-use development is also envisaged at Little Peter Street and the plots north and south of Macintosh Mill. These calculations show that a substantial amount of office floorspace is being delivered against MCC's target. This is being complemented by circa 400,000 sq. ft. of leisure, hotel and civic operational uses, 1,894 residential units and 855 PBSA bedspaces (with a further 1,569 approved or subject to live planning applications, taking this figure to 2,424).

3.13. The development Plot 9a therefore provides significant opportunity to complete the growing comprehensive sustainable urban masterplan set out by the FSDF. The proposal therefore adheres to the overarching ambitions of the FSDF in so far that they will support office development at First Street and enhance a sense of place (through good design and public realm improvements), which would not be achieved if the 'do nothing' alternative was pursued.

3.14. Table 3.1 below outlines how the project aspirations which focus on PBSA use, complies and aligns with the regeneration ambitions of the FSDF.

Table 3.1. Proposed Development compliance with the FSDF

Aspiration	Compliance
First Street Central is the commercial heart of First Street and will be focused around large-floorplate Grade A office buildings.	First Street is already an *"established office location"* (FSDF, 2020), with office the largest single use. As noted in paragraph 3.13, significant portion of Grade A office accommodation has been delivered across First Street already. Plot 10a and One City Road, alongside a refurbished Tony Wilson Place, will be brought forward once the office market returns releasing over 770,000 sq. ft accommodation. Delivery of the office building at One Medlock Street would create a further 392,800 sq. ft accommodation, with further commercially-led mixed-use development also envisaged at Little Peter Street and the sites north and south of MacIntosh Mill.
Secure a balance of appropriate land and building uses in order to lead to an integrated neighbourhood setting able to provide and sustain amenities, jobs, pedestrian footfall and, crucially, a *"sense of place".*	The introduction of additional PBSA will contribute to the diversity of uses at First Street, and will increase footfall and activity, which in turn will help to support local businesses and amenities and will make First Street a more attractive place to work.
Create a powerful visual and functional connection between the edge of the City Centre and Core.	Medlock Street delivers a strong mixed-use frontage, with the route to the City Centre characterised first and foremost by high-quality office accommodation. The proposed PBSA use would enliven this route. PBSA on Plot 9B would also help with the completion of north-to-south pedestrian through First Street.
Public realm and linkages to be used as a mechanism for creating a sense of place across the First Street area, connecting all the development components.	The Proposed Development will incorporate high-quality public realm (with soft landscaping) and facilitate connectivity. Proposals at Plot 9B will knit together the public realm of adjacent plots, allowing for enhanced permeability, and continuity in design.
Commit to the highest sustainability standards (BREEAM) through innovative building design promoting low energy use.	The Proposed Development will be designed to adhere with all MCC sustainability standards. Betterments will be made, where possible.
Provide quality residential offer that would enhance and reinforce the wider neighbourhood, ensuring a striking platform for investment across the neighbourhood. It would provide footfall and spending power to support the leisure and cultural uses elsewhere in First Street.	PBSA will add to the diversity of housing options within First Street, and the wider Oxford Road Corridor – catering for a growing student population.
Deliver scale and type of buildings that will be critical to the creation of substantial employment opportunities at First Street and therefore to the long-term success of the wider neighbourhood.	Proposals will drive direct and indirect employment. Regarding the latter, having an additional circa 861 residents at First Street will substantially impact upon the success of surrounding cultural, retail and leisure uses.

Alternative Locations

3.15. Plot 9b is included within the First Street Central area (FSC) of the FSDF. The FSDF 2018 update is the latest iteration that explores the role of FSC within FSDF.

3.16. The FSDF (2018) notes the FSDF area's "*enormous locational and accessibility advantages*" which, when coupled with the existing ""*smart" affordable office product*" offering, is anticipated to "*attract genuine inward investors to the City Centre in growth sectors*". The FSC section of the FSDF (2018) also notes the need for development to create a "*business ecosystem*" and that supporting uses (to office) will be critical.

3.17. To enable a sustainable long-term business ecosystem, it is also imperative to consider the wider Manchester office development market trends:

- Established: Circle Square and St John's / Enterprise City - Both of these office-led districts have a strong office component, which is underpinned by a flourishing blend of commercial, leisure and

residential uses. They are also characterized by their distinctive identity and exceptional placemaking, setting them apart from traditional single-use office destinations, the concept of which is becoming increasingly outdated.

- Upcoming: ID Manchester and Mayfield – These two are both emerging "*office destination*" hubs, set to shape the future of office space in Manchester as part of the "*next generation*" of office development. Both spaces will incorporate a sustainable mix of uses and have been conceptualised in consideration of best practice in the office market (i.e., what "good" looks like elsewhere). Together these strategic regeneration areas are envisaged to bring over 4 million sq ft commercial space to the city centre, together with at least 3,000 new homes (a figure that is anticipated to increase as detailed proposals come forward).

3.18. There is therefore an opportunity to deliver a similar range and diversity of complementary uses across First Street and enable it to maintain its competitiveness and appeal as an office location, whilst actively contributing to the regeneration goals outlined in the FSDF.

3.19. Securing a viable use for Plot 9b, that can be delivered at pace, is integral in improving the prospects of First Street securing future office occupiers and accelerating the delivery and completion of First Street. At present, there are a number of vacant plots along Medlock Street (with 1 City Road and Premier Inn having been demolished) As a result, there is a growing need to initiate development in order to improve the liveliness and competitiveness of First Street and so for these reasons, the 'do nothing' approach is considered ill-suited to this highly in-demand location.

3.20. The Construction Compound Site is located in close proximity to the Proposed Development Site and represents an appropriate location from which to service the construction works. It is currently in-use as a construction compound servicing the nearby Plot 10b development, which it is envisaged would complete prior to being used for the Proposed Development.

Proximity to University Campus

3.21. Plot 9b is an appropriate location for PBSA as it is within circa. 340m or within a circa. 7-minute walk from Manchester Metropolitan University and a 20-minute walk from the University of Manchester. It is within the Corridor Manchester, MCC's identified preferred location for PBSA development.

3.22. There is also an increasing demand for PBSA accommodation within Manchester City Centre.. Demand for a new PBSA could be between 5,440 bed spaces (representing a 1% growth per anum) and 11,320 (representing 2% growth per anum) up to 2030.

3.23. The Proposed Location for PBSA is also considered appropriate within policy, as Core Strategy (2012) Policy H12 'Purpose Built Student Accommodation' notes that sites should be in close proximity to the University campuses, where proposals can demonstrate a positive regeneration impact and to ensure high-density developments are in locations that are compatible with existing developments and initiatives. The proposals at Plot 9b actively demonstrate all of these criteria and given the proven need to diversity the FSDF area, this diversification of uses to PBSA is seen as appropriate.

3.24. Lastly Core Strategy (2012) Policy T1 'Sustainable Transport' also notes that proposals that improve choice that develop alternatives to car will be supported.

3.25. It is for these aforementioned points and compliance with adopted policy that the development of PBSA on this site location of Plot 9b seen as appropriate.

Alternative Uses

3.26. The introduction of PBSA use at Plot 9b will help to deliver this plot quickly. Having developments progress across First Street is integral in ensuring the comprehensive delivery of the Council's vision and regeneration ambitions, which expands beyond land use, and includes the need to ensure a high-quality, cohesive public realm; increased connectivity and a sense of place.

3.27. The delivery of a mix of complementary uses would support the overall vision and objectives for First Street and ensure that the area remains vibrant and attractive whilst waiting for the office market to return, acting as a catalyst for continued regeneration and investment into the area.

3.28. The existing brownfield use provides no amenity to the local area, with low levels of activity and visibility, and poor pedestrian connections making the Site feel unsafe. The redevelopment of the Site, including public realm improvements will diversify land use within First Street, adding interest and activity 24 hours a day, and make it a more welcoming environment for pedestrians. Development would also enhance the prospects of First Street securing future occupiers (akin to GPA), accelerating the delivery and overall success of First Street.

3.29. It should be noted that the Proposed Development would leave three approved Grade A office developments at Plot 10a, One City Road (Building 1), and One Medlock Street, which together would bring 1,070,912 sq. ft. floorspace to First Street. Delivery of these plots will mean that commercial office is the single largest use at First Street.

3.30. Introducing PBSA use at Plot 9b will increase footfall and activity, adding to the vibrancy of First Street. Enlivening this part of First Street will help to foster conditions for further growth and will make future investment opportunities more attractive – encouraging new offices to come forward once market conditions allow (together with plans to refurbish existing Number 1 Tony Wilson Place).

3.31. In addition to according with the overall ambitions of the FSDF, the proposed PBSA development would also deliver the following key socio-economic and environmental benefits:

- Secure a viable, long-term use for an otherwise underutilised and long-term vacant sites. As some of the remaining plots of land to be developed, the proposals can help to "complete" First Street, a long-standing aim of MCC since the FSDF was first endorsed in 2005.
- Providing high-quality PBSA helps to attract talent to the city, including a proportion of affordable units managed through a nomination agreement with MMU.
- Increase local expenditure. The presence of PBSA can help to support the vitality of businesses located within the area, thereby establishing a positive feedback loop between the community and local economy.
- Encourage a more diverse retail, food and drink, culture, leisure, sports and entertainment offer across the Oxford Road Corridor, supporting stronger daytime and evening economies.
- Enhance vitality, vibrancy and diversity of First Street, and increase pedestrian movement and footfall around the area. The inclusion of PBSA also stitches together Manchester's civic core with the educational and commercial uses in the Corridor.

Provide a broader housing offer which takes account of the housing needs of the workforce of Corridor Manchester and the attractiveness of Manchester as a place to live and work, in keeping with the Manchester Residential Growth Strategy. Meeting an identified need for PBSA bedspaces will also free up standard residential accommodation within the City Centre. Students living in mainstream residential accommodation has often had a detrimental effect on availability for economically active residents in the city centre and has resulted in loss of council tax revenue.

Alternative Designs

3.32. Different scales and massing options have been considered for the Proposed Development, the aim of which is to maximise the suitable use of the Site to create a viable scheme and minimise any negative impacts on adjacent land uses and the environment.

3.33. The overarching design approach has been to create a highly responsive built form that completes the urban block and addresses the Proposed Development Site's prominent location. A series of massing compositions were appraised through the design development of the scheme, and was informed by townscape analysis, identification of key views and microclimate assessments. It has been carefully designed and considered in order to ensure it is compatible with existing developments and initiatives in the area, including that of the innovation district and higher-education agglomeration within the Oxford Road Corridor.

3.34. Proposals originally comprised two interlocking buildings of 24 and 14 storeys. Through pre-application discussion, MCC raised concerns regarding overall proportions, noting that the taller element did not read as a "slimmer expression" given the height and massing of the lower block. Officers noted that the taller element could be better articulated, to express a clearer visual relationship with Block D on Plot 11.

3.35. As a result of these comments, a series of alternative massing options were explored (as detailed further within the Design and Access Statement, submitted alongside this application). It was decided that the most contextually appropriate, and viable option would be to adjust the height and proportions of the two blocks, with the tower height increased to Ground + 33 storeys.

3.36. Due to the prominent gateway location of the Proposed Development Site, the building serves as a cornerstone between the street and city scales. The massing of the tower and two shoulder blocks address this transition between scales and require two distinct approaches to their architectural language. The final Proposed Development massing steps up from Ground+ 11 storeys to Ground +33 storeys, to create visual interest through a prominent and articulated building form, and complement the emerging skyline. The shoulder elements have been stepped down to closely match the height of the adjacent Plot 9a development. The tower element along Hulme Street has been and stepped up towards Plot 11.

3.37. Overall, the scale and massing will act as a dynamic element in the skyline and a marker for the regeneration and neighbourhood creation taking place in this location.

Summary

3.38. In summary, the Proposed Development will contribute towards a sustainable mix of uses within the FSDF area that support the city's economic growth.

4. Site and Development Description

Introduction

4.1. This Chapter includes a description of the Sites and its surrounding context and its suitability for the Proposed Development.

Site Description

4.2. There are two Sites subject to this application (referred to collectively as 'The Sites'). This includes:

- 'The Proposed Development Site': Extending to approximately 0.25 ha, the Proposed Development Site is bound to the north by Plot 9A of the First Street Development Framework (FSDF) area (currently being redeveloped into an office block of up to 9no. storeys (pursuant to Planning Permission Ref. 132600/FO/2021)); to the east by Plot 10A (which has planning permission for an office block of up to 13no. storeys (Ref. 136043/FO/2023)); to the south east by Hulme Street; and to the west by Medlock Street.
- 'The Construction Compound Site': 'The Construction Compound Site': Extending to approximately 0.46 ha, the Construction Compound Site is bound to the north by the River Medlock; to the east by Cambridge Street; to the south by Macintosh Mills; and to the west by River Street. The site is currently used as a construction compound, in relation to the construction of Plot 10b First Street.

Surrounding Area

4.3. The Sites are located within the Regional Centre and City Centre, within MCC's administrative area.

4.4. The Sites sit within two strategic priority areas of the City Centre – within the First Street Development Framework Area and within the Oxford Road Corridor. The Site sits in close proximity to the Manchester Metropolitan University (MMU) Campus (circa 7-minute walk); and University of Manchester Campus (circa 10-minute walk).

4.5. The Sites are located to the north of the predominately residential area of Hulme. Within Hulme, the nearest residential properties to the Sites are at Loxford Court, which is approximately 190m to the south of the Proposed Development Site. Hulme is largely severed from the City Centre by Mancunian Way; albeit there is an established pedestrian crossing under Mancunian Way at the junction of Clarendon Street and Newcastle Street.

4.6. Immediately north of the Proposed Development Site is Plot 9a, part of FSC of the FSDF. In 2022, Plot 9a received planning permission (Ref.18132600/FO/2021) for a nine storey 'net-zero' office building, which is now being brought forward by Ask. In June 2022, it was announced that the Government Property Agency (GPA) will occupy the Plot 9a building once complete. Further north is FSN, which is now complete. Centred around Tony Wilson Place, FSN is a cultural hub for the City including HOME (a contemporary art, film and theatre complex) alongside a wider mix of uses including PBSA, a multi-storey car park ('MSCP') and a range of carefully curated food and drink operators, as well as new public spaces.

4.7. To the east of the Proposed Development Site is Plot 10 (also in FSC). Plot 10a received planning permission (Ref. 136043/FO/2023) in 2023 for a highly sustainable office development (which is also being brought forward by Ask). Plot 10b subsequently received planning permission (Ref. 136170/FO/2023) for a 14 storey PBSA development comprising 576 bedspaces as well as a new 'food-hall' on the ground floor, helping to activate this part of the City Centre. Construction on Plot 10b started in September 2023, and the development is due to accommodate its first student intake in the 2026/27 academic year. Further beyond to the east, there is a cluster of converted mills (Macintosh Mill, Chorlton Mill and Cambridge

Mill), and a diverse mix of uses, including PBSA, retail, residential, and food and beverage units.

4.8. Immediately to the south of the Proposed Development Site is Plot 11 which is part of FSS. Plot 11 is currently being brought forward for a co-living development with Blocks A, B and D under construction (pursuant to Planning Permission Ref. 125573/FO/2019 (as amended)). There is a live application (Ref. 138831/FO/2023) for a PBSA in place of Block C, which is currently awaiting determination.

4.9. To the west of the Proposed Development Site is Medlock Street, beyond which is the former Premier Inn site. In 2023, planning permission (Ref. 135419/FO/2022) was granted for the former Premier Inn site to be redeveloped into a mixed development comprising a 13-storey office building and a PBSA building of up to 38 storeys (with 1,014 bedspaces).

Site Specific Environmental Designations

4.10. Under the provisions of the MCC Proposals Map (2012), the Sites are allocated to be within:

- Manchester City Centre; and
- The Regional Centre

Air Quality

4.11. The Sites are located within the Greater Manchester Air Quality Management Area (AQMA). For further details on air quality, please refer to the Air Quality Assessment prepared by Hydrock.

Ecology

4.12. The Sites are not located within a statutory or non-statutory nature conservation site and no records of protected species have been found at the Proposed Development Site. For further details on ecology, please refer to the Ecological Assessment prepared by Penny Anderson Associates.

Flood Risk and Drainage

4.13. As per the Environment Agency's Flood Map, the Proposed Development Site is fully located within Flood Zone 1 which means that it has a low probability of flooding.

4.14. It should be noted that the Construction Compound Site is located within Flood Zone 2, with a medium probability of flooding. However, as the Construction Compound Site will be used purely for a temporary compound, the sequential and exception tests are passed and no further assessment is required.

4.15. The Sites are located within the Critical Drainage Area prescribed by Manchester, Salford and Trafford Councils' Strategic Flood Risk Assessment.

4.16. For further details on flood risk, please refer to the Flood Risk and Drainage Strategy prepared by ROC.

Heritage

4.17. The Sites are not located within a Conservation Area and do not contain designated or non-designated heritage assets. As shown in Error! Reference source not found., there are 35 designated heritage assets w ithin a 500m radius of the Proposed Development Site. The radius of 500m was chosen to reflect the built up, urban nature of the Proposed Development Site, whilst ensuring assets within a close range that have the potential to be affected, are considered.

4.18. Of most relevance to the Proposed Development are the Grade II former mill buildings located east of the Proposed Development Site including MacIntosh Mills, Cambridge Mill, Chorlton Old Mill and Chorlton New Mill.

4.19. There are 2 Conservation Areas within the 500m boundary, namely the Castlefield Conservation Area located 450m to the northwest of the Proposed Development Site and the Whitworth Street Conservation Area located 430m to the northeast of the Proposed Development Site.

4.20. For further details on heritage and the nearby heritage assets, please refer to the Heritage Statement prepared by Deloitte LLP.

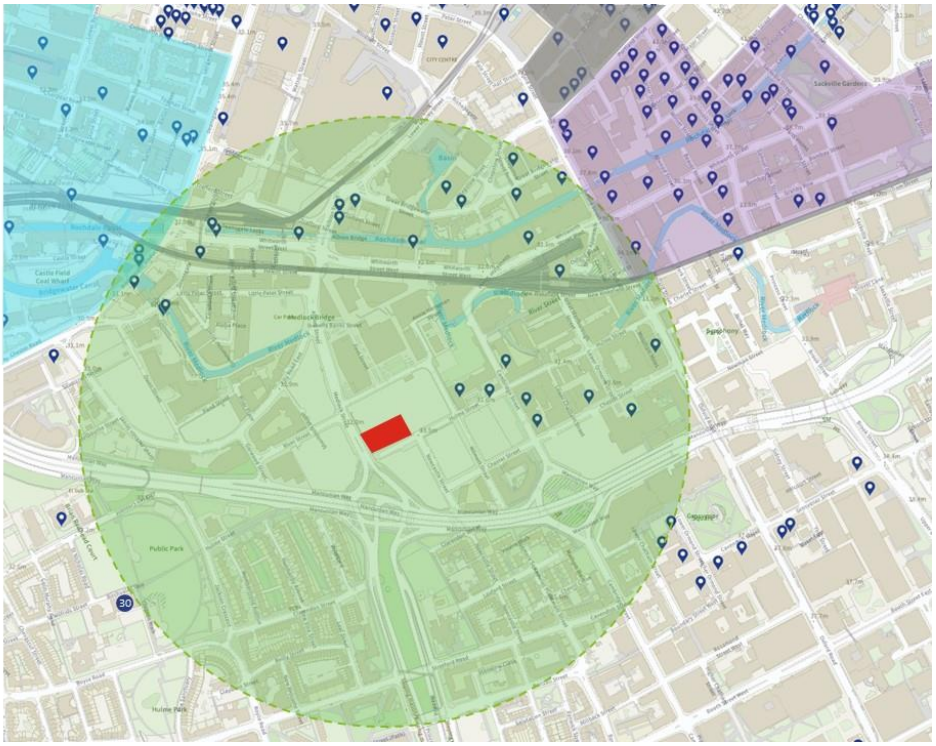


Figure 2: Listed Buildings within a 500m radius. The Proposed Development Site is marked in red while the area of analysis is a green circle. Listed buildings are marked in blue. Whitworth Street Conservation Area is in purple and Castlefield Conservation Area is in cyan. (Historic England, 2024)

Archaeology

4.21. A Historic Environment Desk Based Assessment was carried out in 2016 by Pre-Construct Archaeology Ltd, in relation to Plots 9a and 9b. A Written Scheme of Investigation was subsequently produced and submitted to discharge Condition 3 (Ref. CDN/20/0404) attached to Ref. 125833/FO/2019).

4.22. In 2021, an amended planning application for Plot 9 was submitted (Ref. 132600/FO/2021). Condition 4 required archaeological excavation to be carried out in accordance with a WSI that was produced (by PCA) for a mitigating excavation to further explore areas of significance identified by the preceding evaluation. The mitigation areas were located across the footprint of the original Plot 9 (i.e. within both the Plot 9A and 9B areas). This condition was discharged in 2024 (Ref. CDN/23/0673), with the Decision Notice confirming:

"Parts 1 and 2 of the condition are discharged. The post excavation analysis, reporting on the results, archive deposition and a commitment to an approved scheme for dissemination through publication and a heritage display need to take place before the condition can be fully discharged (parts 3 to 5)".

4.23. With this background in mind, GMAAS has confirmed (via letter dated 20 July 2024) that*:*

"The archaeological potential and significance has been dealt with on site and there is no requirement for further on-site investigations. The outstanding work for Plot B is all post-excavation in nature and summarised in the Decision Notice wording".

Accessibility

4.24. The Sites, centrally situated in Manchester, enjoy excellent transport links. The Proposed Development Site is highly accessible by a variety of modes of transport and has a Greater Manchester Accessibility Level of 8 (the highest level of accessibility). See below for accessibility breakdown by sustainable transport modes.

Walking

4.25. An analysis of the pedestrian routes in the area has been undertaken as part of the Transport Statement,

prepared by SLR in support of this application. The Statement notes that surrounding pedestrian infrastructure is conducive to pedestrian movement with all public roads providing footpaths on both sides of the carriageway and being well-lit. Given the City Centre location of the proposals, pedestrian accessibility to the surrounding area is excellent.

Cycling

4.26. The Proposed Development Site is well connected to cycle infrastructure, with cycle routes on Newcastle Street, Cambridge Street, and the newly improved roundabout on Medlock Street. The nearest Cycle Hub is a 9-minute walk away at Manchester Oxford Road Station, which is operated by Northern Rail.

Bus

4.27. There are a number of high-frequency bus routes within 500m of the Proposed Development Site, including on Cambridge Street, Medlock Street, Oxford Road, and Whitworth Street West which provide excellent connectivity to most of Greater Manchester.

Metrolink

4.28. The Proposed Development Site is within a 9-minute walk from Deansgate Castlefield Metrolink stop which connects to all 7 Metrolink lines.

4.29. The Metrolink network includes the following services:

- Bury (via Manchester Victoria);
- Oldham & Rochdale (via Manchester Victoria);
- Ashton-Under-Lyne (via Manchester Piccadilly);
- East Didsbury;
- Manchester Airport (with a change at Cornbrook);
- Altrincham;
- The Trafford Centre; and
- Eccles and Media City.

4.30. The Metrolink can therefore offer excellent public transport connectivity for occupants and visitors to the Proposed Development.

Rail

4.31. The Proposed Development Site is located in close proximity to both Deansgate Railway Station (9-minute walk) and Oxford Road Station (8-minute walk). Both operate national rail services.

Planning History

4.32. Planning Permissions on the Site dating back to 1995 are listed below, identified by undertaking a planning history search using MCC's Public Access System. These are not considered relevant to the proposed development.

Table 4.1 Planning History of the Site

PP Reference	Description	Status
048549/DF/CMDC/95	Works to make good building facades, boundary treatment and site surface following the demolition of structures on Wilmot Street.	Approved 2 November 1995
056441/FO/CITY3/99	Provision of a single storey building for office use for a temporary period of three years	Approved 24 November 1999

064244/FO/CITY3/02	Retrospective application for public surface car park for 240 vehicles, including retention of building A	Approved 9 April 2002
111240/FO/2016/C1	Creation of a temporary landscaped area in advance of permanent redevelopment.	Approved 19 April 2016
125833/FO/2019	Erection of a basement plus 11-storey building comprising office accommodation (Use Class B1), flexible commercial space (Use Classes A1 (Shops), A2 (Professional and Financial Services), A3 (Restaurants and Cafes), A4 (Drinking Establishments), B1 (offices), and D2 (Gymnasium), car parking, cycling parking and associated facilities, landscaping, and associated works.	Approved 15 April 2020
130608/FO/2021	Planning Permission for the change of use to allow for temporary events space including the erection of two temporary stages and tent within Plots 9 and 10 of First Street, as well as pop-up concessions stands and a private corporate event space for a period of 12 weeks.	Withdrawn.

4.33. The Sites had planning permission for Plot 9 (Ref. 125833/FO/2019) combining Plot 9a and Plot 9b for an office development, which was not carried out. Plot 9a currently has planning permission to provide an office block to the north of the Site, which is under construction.

The Proposed Development

4.34. The Proposed Development at Plot 9b includes construction of a 33-storey purpose built student accommodation (Use Class Sui Generis) to provide 861 units, alongside landscaping and amendments to pedestrian and vehicular access.

4.35. Table 4.2. sets out the proposed quantum of development.

Table 4.2 Outlines the quantum of the Proposed Development

Parameters for development	
Site area	0.25 ha
Gross Floorspace	26,858 sq.m.
Units	*861 studios (Use Class Sui Generis).* *Including:* • *5% (43 no. bed spaces) accessible bedspaces, including:* ○ *2 no. 'Fully Fitted Wheelchair Accessible' studios (M4)3)) at Practical Completion with all necessary handrails, pull cords and alarms.* ○ *2 no. rooms will be 'Future Wheelchair Accessible' studio (M4(2)), sized with a larger bathroom to accommodate a wheelchair and power connections for the future addition of equipment.* ○ *The remainder will be 'Future Wheelchair Convertible (M4(2))'- large enough in footprint that they can be retrospectively converted to a 'Fully Fitted Wheelchair Accessible' studio, if and when the need arises.*

Maximum Height	Ground + 33 storeys (actual 130.785m AOD)
Cycle Parking	146 (17% cycle spaces)
Car Parking	0%
External Amenity Space	c. 800 sq.m.

5. Construction Programme Management – Programme Methodology

Introduction

5.1. This document describes the proposed construction programme and key activities that will be undertaken.

5.2. The following layout is included with this document:

- Appendix 5.1 TGA-G100-PL-00-02105 Rev P01 Site Logistics Plan

5.3. The main aim throughout the construction period is to minimise the impact on the surrounding properties and roadways for the duration of the work. Close collaboration with all project teams of any construction projects and with neighbours in operating buildings will be maintained at all times to achieve this aim.

5.4. The following narrative explains this methodology and timescales envisaged at the time of the planning application. More detailed proposals will be developed once contractors are appointed and prior to commencement on site. This will include preparation of detailed plans to incorporate Construction Management, Construction Phase Health and Safety, Environmental Management as well as Site Waste Management, Logistics, Fire and Traffic Management.

Programme

5.5. The total construction programme will span a period of approximately three years within which there will be elements of ground works, foundations, frame construction, façade cladding, internal fit out and external works. The scheme is anticipated to be delivered in a single phase.

5.6. This is an indicative construction programme and the Applicant highlights that there are multiple risks involved in the development process. The Applicant notes that this programme may ultimately be extended in the event delays caused by sustained periods of poor weather, unexpected ground conditions or other abnormals, volatility in economic and housing markets, political uncertainty, and the availability of funding.

5.7. The programme is based upon normal working hours in line with Manchester City Council Guidance of 7.30hrs to 1800hrs Monday to Friday and 08.00hrs to 14.00hrs on Saturdays.

5.8. On Sundays and Bank holidays noisy working will generally not be planned. On some occasions there are certain operations that maybe required to proceed during these periods, for example tower crane erection and dismantling. These will be infrequent and will be agreed with the Environmental Health Officer (EHO) and local residents through a series of neighbourly engagements. The frequency of these will vary and respond to demand. Access to the Site will be permitted 30 minutes prior to working day commencing with noise being kept to a minimum for the first half hour of each day.

5.9. We acknowledge the close proximity of the neighbouring properties and as such will endeavour at all times to ensure the working hours are adhered to in order to protect their amenity.

Construction Methodology

5.10. The following is a brief overview of the methodology to be adopted for the construction and fit out of the Proposed Development. The section also considers general logistics as well as traffic management for the

movement of material to the disposal of waste.

Site Logistics

5.11. The Site has been cleared previously and was recently used as a compound for the construction of Site 9a. It is proposed to temporarily reduce the width of a linear section of road on Hulme Street directly outside the site 9b. This will be a hoarded delivery bay with a single gate for in and reversing out, the intent is for this to be for infrequent use and items which need lifting by the site crane, the majority of deliveries will enter a temporary haulage road from River Street and be unloaded in a compound adjacent to the site, the goods will then be transported to the site and hoists via forklifts and banksman, deliveries will then depart the compound onto Hulme Street. The various gates will be manned during working hours.

5.12. It is envisaged that the temporary site establishment and welfare space will consist of good quality temporary cabins. The welfare facilities will be suitably sized to suit the anticipated number of operatives. The welfare facilities are already located on the Macintosh Mill compound and it is the intention for these to remain here for the construction period, a smaller satellite welfare set up will be formed in the materials compound adjacent to the site.

5.13. Material storage will generally be contained within the Site boundary and adjacent compound. There is limited space within the building footprint to store materials, so the strategy will be to, whenever possible, take them straight from offloading to their end destination, via the hoist. The exception to this will be brickwork / mortar silos and when the hoists are out of use due to maintenance or inclement weather, these will be stored in the adjacent compound.

5.14. Any temporary public road or footpath closures associated with the construction phase will be agreed with Manchester City Council highways department and relevant diversion signage put in place.

5.15. Access to the site entrances will be controlled by biometric scanner through a secure metal turnstile. This will monitor operative's movements and prevent unauthorised public access to the Site. The main gates will be locked secured at all times with the exception of when a delivery is being made. The gates will be manned by qualified banksmen who will co-ordinate traffic, bank deliveries as well as ensure the road and pavement areas are kept clean.

5.16. Where required, appropriate wheel and vehicle wash facilities will be in place to ensure delivery wagons leave the Site clean and tidy with regular cleaning of Hulme Street using road sweepers.

5.17. Loading and unloading of material deliveries will occur within the site and compound boundary unless exceptional circumstances require special measures to be instigated.

5.18. Waste materials will be placed in skips and these will be removed on a regular basis. Food waste from canteens and eating areas will be contained within a smaller covered skip to prevent vermin.

5.19. The Site will employ security guards as appropriate to prevent and discourage nuisance. Regular patrols will take place throughout the shift. As an additional measure, CCTV will be installed to elements of the Site to aid early identification of potential issues.

Construction

5.20. The works generally comprises the following:

- Creation of piling mat substrate and formation for tower crane bases.
- Bearing piles and associated pile caps set out across the expanse of the ground floor slab.
- Installation of tower cranes.
- Construction of in-situ concrete frame, concrete stair cores and floors to roof level by concrete pump and jump-form construction.
- Roof coverings.
- Installation of brickwork facade including windows and discrete MVHR grilles.
- Installation of unitised cladding panels of glass and aluminium.

- Installation of internal mechanical and electrical systems including main lifts.
- Fit out of apartments including walls, floors, ceilings, bathrooms kitchenettes and final finishes.
- Installation of façade access measures (BMU and Davit arms).
- Removal of Tower cranes.
- Completion of internal finishes to communal spaces.
- Removal of permanent hoardings and temporary gates.
- Completion of public realm.
- Phased decant from site leading to the full opening of the development.

Infrastructure

5.21. The works generally comprise the following:

- Drainage connections to a UU main combined drain outfall just within the site boundary.
- Electrical supply incoming off Medlock Street, connected into substation.
- Mains water will be sourced from the identified supply currently in Hulme Street.
- Telecoms and data infrastructure proposed to be sourced from Hulme Street.

Traffic Management Plan

5.22. The Site is served primarily from River Street. It is envisaged that deliveries will arrive via Medlock Street, through River Street and on to the site compound. Traffic will leave via Hulme Street, through Cambridge Street and onto the Mancunian Way as applicable.

5.23. A full traffic management plan will be developed to address the following issues:

- Integration of traffic management scheme with surrounding construction developments and occupied premises.
- Access, egress, drop off and turning areas.
- Temporary and/or permanent alterations to local traffic routes (both vehicular and pedestrian).
- Additions, alterations and positions of any temporary signage, road markings or protection barriers.
- Pedestrian access around site and relevant protection, lighting and signage schemes.
- Segregation of plant, materials and pedestrians on site and safe access routes between welfare and site areas.
- The provision of car parking, off and on site, and public transport strategy for staff and operatives
- Loading bays, hoist positions and tower crane areas.
- Any other measures to ensure the safe integration of pedestrians, cyclists and road users both on, off and surrounding the development.

5.24. In preparation of the above document a protocol of timed and booked deliveries, off peak deliveries and prefabrication will be incorporated.

Deliveries

5.25. Delivery routes for the major materials and items of plant will be as per the section above (item 1.22). The Principal Contractor will endeavour to deliver outside of peak traffic hours to minimise local disruption and the normal workings of the surrounding properties.

Parking

5.26. There will be a limited number of visitor and key staff parking within the existing welfare area. Site personnel will be encouraged to utilise the extensive public transport options available to them. Any personnel who have to attend by car will be asked to avoid parking in residential areas and instead utilise nearby formal carparking areas.

Health and Safety

5.27. The project will be carried out in accordance with the Construction, (Design and Management) Regulations 2015, and all other relevant legislation and guidance.

5.28. The Principal Contractor will produce a Construction Phase Health and Safety Plan prior to works commencing on site that will be reviewed and signed off by the client and their Principal Designer. This document will form the basis of the procedure for managing health and safety during the construction phase and will be periodically reviewed as the work progresses.

Construction Materials

5.29. The materials selected at this stage of the design process do not generate a risk to construction personnel using the appropriate PPE and following manufacturers guidance.

Site Security and Safety

5.30. Protecting the public from risks to their health and safety arising from the construction work is a high priority. Every care will be exercised to prevent risk to members of the public and appropriate action, including dust & noise control & the erection of perimeter fencing to a specified standard, will be taken.

5.31. Vandalism and theft of plant, equipment, materials and fuel is possible throughout the duration of the development. The Principal Contractor will take appropriate action, as described in previous sections, to ensure the site is secure at all times from unauthorised access. As described previously, the site will have metal turnstile access system controlled with biometric recognition.

5.32. The provision of CCTV will be utilised to main site points and compound areas to assist in the prevention of unauthorised activities.

Environmental Management

5.33. An Environmental Plan will be developed to address and monitor the following issues:

- Applicable environmental legislation.
- Pollution.
- Nuisance (Noise, vibration, dust, emissions, and light).
- Public relations.

Environmental Legislation

5.34. Applicable environmental legislation will be identified in a register, to ensure that appropriate systems are put in place in order to comply with the legal requirements in question.

Pollution

5.35. The Principal Contractor will establish procedures, to ensure the prevention of water and ground pollution, relating to the following risk activities:

- De-watering of the site (if required).
- Soil contamination remediation.
- Earthworks (including piling, spoil movement and removal, and movement of contaminated soils).

- Concrete works (including washing out of concrete delivery vehicles and pumps).
- Storage and movement of fuels, oils, chemicals and other such fluids.
- Cleaning (including plant, machinery and wheel washing).

Nuisance (Noise, Vibration & Dust)

Noise & Vibration

5.36. The principal concerns relating to the nuisances of noise and vibration come from construction activities such as excavation, cutting, breaking out and plant movements. Mitigation measures will be considered to include low noise options, noise attenuation techniques and carrying out certain activities during agreed hours of the day.

5.37. In order to minimise the noise, the Principal Contractor will provide the following:

- Any compressors brought on to the Site to be silenced or sound reduced models fitted with acoustic enclosures;
- All pneumatic tools to be fitted with silencers or mufflers where available;
- The majority of deliveries to be programmed to arrive during normal working hours only. Care to be taken when unloading vehicles to minimise noise. Delivery vehicles to be routed so as to minimise disturbance to local residents. Delivery vehicles to be prohibited from waiting within or in the vicinity of the Site with their engines running;
- All plant items to be properly maintained and operated according to manufacturers' recommendations in such a manner as to avoid causing excessive noise;
- Where possible, all plant to be sited so that the noise impact at nearby noise sensitive properties is minimised;
- Local hoarding, screens or barriers to be erected as necessary to shield particularly noisy activities; and,
- Problems concerning noise from construction works can often be avoided by taking a considerate and neighbourly approach to relations with the local residents. Where possible, works should only take place during given periods, e.g. during normal construction hours and not at night.

5.38. In order to minimise the vibration, the Principal Contractor will provide the following:

- Adoption of low vibration working methods. Consideration should be given to use of the most suitable plant;
- Where processes could potentially give rise to significant levels of vibration, on - site vibration levels should be monitored regularly by a suitably qualified person;
- Where piling is to take place, any obstructions should first be removed;
- Application of piling techniques aimed at reducing resistance to penetration e.g. utilisation of CFA piling in lieu of driven methods.

Dust

5.39. The principal concerns relating to air quality and emissions from construction activities are in the form of dust and fumes. The degree of dust deposition is usually dependant on the nature of the works. Increased levels of dust are most likely to occur during site activities related to demolition (of which there are none planned on site) piling, moving construction traffic and ground works.

5.40. In order to minimise the dust and fumes, the Principal Contractor will provide the following:

- Providing a hard surface where vehicle movements occur;
- Control measures and dust suppression techniques;

- Minimising stock piling and positioning in a manner that reduces risk of dust arising through wind action;
- Measures such as screening and covering;
- Installation of appropriate wheel and body wash facilities;
- Keeping of adjacent roads and pavements clean;
- Ensure plant is turned off and not left running when not in use; and,
- Selection of electrically powered plant where possible in lieu of diesel or petrol plant.

Public Relations

5.41. The Principal Contractor will ensure that regular contact is made with local residents and community groups to ensure they are kept up to date with general progress on the site. This is especially important for major work elements such as piling and tower crane erection due to our close proximity to adjacent buildings. The Principal Contractor display a contact number on hoardings which will be operational 24/7.

Waste Management Strategy

5.42. In line with the "Site Waste Management Plan Regulations 2008", a site waste management plan (SWMP) will be developed by the principal contractor and agreed with Manchester City Council.

Operational Waste Removal

5.43. Waste generated during the construction phase is to be cleared on a daily basis to a main holding skip. Each floor plate will have a designated waste area that will see bins located within it that can be emptied at the end of each shift. During high waste activities, such as dry lining, this waste removal may need to occur several times a day via the hoists and as such general operatives will be employed to ensure this will occur. Hazardous waste will be stored and disposed of separately but main waste will enter a common skip where our supplier will sort at their transfer station before issuing us recycling percentages and data.

5.44. To reduce the volume of waste sent to landfill, waste from site will be segregated at the waste transfer station into the following categories.

- CAT A: Hazardous waste – Paint tins, mastic etc
- CAT B: Metal
- CAT C: Timber
- CAT D: Plasterboard
- CAT E: General Waste

5.45. All carriers of waste will hold a valid waste transfer licence and provide certification to the main contractor for all elements of the process.

Summary

5.46. The Construction (Design and Management) Regulations 2015 will apply to this project and all appropriate controls and systems will be in place to comply with the standards of the Regulations and associated guidance.

5.47. Every stage of the project will be pre risk assessed and appropriate controls applied, sub-contractors will be pre vetted and will be subject to extensive pre contract requirements of information transfer and risk assessment.

5.48. A fundamental aspect of the Principal Contractor's role is the development of a Construction Management Plan, which will take account of all known risks, which have been identified at pre-construction stage by the Principal Designer/CDM Consultant, the Design Team and also through site investigations.

5.49. The Construction Management Plan will describe arrangements and procedures for managing these key

risk areas in more detail, as well as any future risk, and also the resources, including personnel, which will be applied to the scheme and which will ensure the Health and Safety of all those working on or affected by the project works.

5.50. The Principal Contractor will have an on-going process of monitoring health and safety standards throughout its organisation. This is normally done directly (on site) by the site management team through regular inspections, toolbox talks etc. and also via the risk assessment process both during the completion of risk assessments and then by monitoring the effectiveness of risk control measures, which have been implemented. Site managers will also undertake regular reviews of safety on site, including any accidents or incidents and any matters raised will be dealt with accordingly.

5.51. Health and safety is also incorporated as a fundamental aspect of the overall project review. The Applicant will appoint a Principal Contractor that can demonstrate competency in the management and execution of Health and Safety. The Principal Contractor will work closely with the Principal Designer at this early stage of the project and will influence the detailed design to remove construction and residual safety risks.

5.52. At the earliest opportunity (prior to commencement of construction operations), the Principal Contractor will enter into dialogue with all relevant parties, including neighbours to ensure there is effective coordination throughout all stages of the build.

6. Townscape and Visual Impact

Introduction

6.1. This Chapter of the ES has been prepared by TPM Landscape and assesses the Landscape and Townscape impacts of the proposed development.

6.2. This Chapter is accompanied by the following appendices:

- Appendix 6.1 Townscape Effects Table;
- Appendix 6.2 Visual Effects Table;
- Appendix 6.3 TVIA CGI and Wireframe Views (Views 1-13)
- Appendix 6.4 TVIA Wireframe Views (Views 13-16)
- Appendix 6.5 Figures
- Appendix 6.6 Methodology

6.3. Please note that Appendix 6.4 has been added following further detailed design and following an increase in height (since scoping). These Appendix includes longer range wireline views for additional context.

6.4. This Landscape and Visual Assessment Chapter will address the potential effects of the Proposed Development on the character of the townscape for the immediate vicinity of the Sites and the wider townscape context, and also the visual amenity of identified receptors with potential views of the Development. This Chapter has been produced by TPM Landscape, Chartered Landscape Architects and members of the Landscape Institute.

6.5. The objective of this Chapter is to identify the significance of effects on known townscape and visual assets likely to arise from the construction, opening and operation of the proposed Development.

6.6. To assist with the preparation of this Chapter, a baseline study encompassing townscape character assessment; visual amenity and views; and townscape and character assets has been undertaken. This involved the consultation of a number of sources including National Landscape characterisation studies, Local Landscape character studies, and site visits as well as zone of theoretical modelling to determine likely visible effects.

6.7. The baseline study has enabled an assessment of the potential impacts and the effects that may occur from the Proposed Development. Where impacts do occur, mitigation measures have been suggested if deemed appropriate. The baseline study and corresponding impact assessment have been undertaken in accordance with National Planning Policy (NPPF) (2024) and the relevant Local plan and other relevant guidance.

Assumptions and Limitations

6.8. The visual representation for this Chapter have been produced using verified view modelling technology by Our Studio. These are modelled views based on accurate survey data and offer a visual representation, following industry guidelines, as to the appearance of the proposals from a selected viewpoint. Where verified views are not used the views are constructed using modelling utilising 3dimensional cityscape models available within google earth and supported with onsite photography to industry guidelines. Both type of visuals used in this assessment are for illustrative purposes only and, whilst useful tools in the assessment, can never show exactly what the Proposed Development will look like in reality due to factors

such as: different lighting, weather and seasonal conditions which vary through time and the resolution of the image. They are not considered to be completely representative of what is apparent to the human eye. The assessments are carried out from observations in the field and may include reference to elements that are not visible in the photograph.

6.9. The viewpoints illustrated are representative views in the TVIA study area but do not represent visibility at all possible locations.

Relevant Legislation, Policy and Guidance

National Planning Policy Framework (NPPF updated December 2024)

6.10. The National Planning Policy Framework (NPPF) sets out the government's planning policies for England and how these are expected to be applied.

6.11. The purpose of the planning system is to contribute to the achievement of sustainable development through three overarching objectives. The environmental objective is of particular relevance to the purposes of TVIA.

6.12. "An environmental objective – to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy."

6.13. Section 12 of the NPPF deals with the requirements of good design. The overarching principle is set out in paragraph 131, which states:

6.14. "The creation of high quality, beautiful and sustainable buildings and places is fundamental to what the planning and development process should achieve. Good design is a key aspect of sustainable development, creates better places in which to live and work and helps make development acceptable to communities."

- The NPPF advises, in section 12 Achieving well-designed places, paragraph 135, that: 'Planning policies and decisions should ensure that developments:
  - will function well and add to the overall quality of the area, not just for the short term but over the lifetime of the development;
  - are visually attractive as a result of good architecture, layout and appropriate and effective landscaping;
  - are sympathetic to local character and history, including the surrounding built environment and landscape setting, while not preventing or discouraging appropriate innovation or change (such as increased densities);
  - establish or maintain a strong sense of place, using the arrangement of streets, spaces, building types and materials to create attractive, welcoming and distinctive places to live, work and visit;
  - optimise the potential of the Site to accommodate and sustain an appropriate amount and mix of development (including green and other public space) and support local facilities and transport networks; and
  - create places that are safe, inclusive and accessible and which promote health and well-being, with a high standard of amenity for existing and future users; and where crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesion and resilience'.

6.15. The NPPF advises, in section 15 Conserving and enhancing the natural environment, paragraph 187, that landscapes should be taken into account in the planning process through the protection and enhancement of valued landscapes.

6.16. Whilst the Site is not located in a Conservation Area and does not contain listed buildings, heritage is an

intrinsic part of townscape assessment and potential views from Conservation Areas and the context around listed buildings will be considered as part of the assessment. Section 16 of the NPPF concerns conserving and enhancing the historic environment. Paragraph 195 states that heritage assets are:

6.17. *"an irreplaceable resource, and should be conserved in a manner appropriate to their significance, so that they can be enjoyed for their contribution to the quality of life of existing and future generations".*

6.18. There is also an overarching objective set out within the NPPF for new development to contribute positively to local character and distinctiveness. The NPPF advises in paragraph 203, that:

6.19. *"Plans should set out a positive strategy for the conservation and enjoyment of the historic environment taking into account: 'the desirability of new development making a positive contribution to local character and distinctiveness; and opportunities to draw on the contribution made by the historic environment to the character of a place."*

Local Planning Policy

Places for Everyone Joint Development Plan Document 2024

6.20. Places for Everyone is a long-term plan of nine Greater Manchester districts (Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Tameside, Trafford and Wigan) for jobs, new homes, and sustainable growth. It has been published by the GMCA on behalf of the nine districts.

6.21. The plan is a joint development plan of the nine districts which will determine the kind of development that takes place in their boroughs, maximising the use of brownfield land and urban spaces while protecting Green Belt land from the risk of unplanned development

6.22. The Joint Plan, Policy JP-Strat 2 sets out the following policy for the City Centre:

6.23. *"The role of the City Centre as the most significant economic location in the country outside London will be strengthened considerably. The City Centre will continue to provide the primary focus for business, retail, leisure, culture and tourism activity in Greater Manchester, but the increasingly important residential role of the City Centre will be expanded. Development will generally be high density. It will enable people to take advantage of the access to education and training and the extensive public transport offer, reducing the need to travel to work whilst supporting economic growth and reducing levels of poverty."*

Manchester's Local Development Framework, Core Strategy Development Plan Document (2012 - 2027)

Spatial Objectives S06 Environment:

6.24. The policy seeks to: *"Protect and enhance both the natural and built environment of the City and ensure the sustainable use of natural resources, in order to mitigate and adapt to climate change, support biodiversity and wildlife, improve air, water and land quality, recreational opportunities and provide networks of high quality green infrastructure, ensuring that the City is inclusive and attractive to residents, workers, investors and visitors. The development of networks of green infrastructure across the City and City Region, together with protecting and enhancing townscape character and securing a high standard of design in all development proposals, will promote healthy, low-carbon lifestyles, contribute to a sense of wellbeing, and help to facilitate the sustainable and inclusive growth of the City."*

Policy CC9 Design and Heritage

6.25. The Policy requires that: *"Design of new buildings will need to be of the highest standard in terms of appearance and function. The standards and guidance explained in other LDF policies should be the basis for the approach to design, with particular attention to be given to the City Centre context and character.*

6.26. *Development in Manchester City Centre should preserve or enhance the heritage assets that have been identified, including listed buildings, conservation areas and scheduled ancient monuments.*

6.27. *The Council will support high density and mixed use development in the City Centre, but developers must recognise the specific design challenges that must be overcome to ensure complementarity of function and form. New development must support the range of uses the Council expects in the City Centre and contribute to a coherent and integrated physical environment."*

Policy EN1 Design Principles and Strategic Character Areas

6.28. The Policy require that: *"New development in Manchester will be expected to take into consideration its location within the specific character areas and reinforce the sense of place and local distinctiveness of the City. This is considered an important element in increasing the sense of local ownership of and respect for a neighbourhood' and that 'Opportunities for good design to enhance the overall image of the City should be fully realised, particularly on major radial and orbital road and rail routes."*

6.29. City Centre Character Area - The City Centre contains a rich legacy which reflects its urban evolution to the current day and includes listed buildings, conservation areas, archaeological remains and an historic street pattern. Its core area presents a particularly dense environment that accommodates a wide and closely integrated range of uses including commercial, civic and residential activities. Relative to the amount of development there is limited open space and this includes a range of civic and less formal green spaces and waterways. Outside the core and associated with the Inner Relief Route there are less active and less densely developed areas with significant elements of cleared land. The City Centre is the focus of the City's transport routes.

6.30. Developers will be expected to consider the City's heritage and continue the rich pattern of activity in the core area.

6.31. While there will be opportunities to create landmark buildings, developments should also contribute positively to the experience of all at street level.

6.32. Wherever possible the opportunity should be realised to enhance existing and provide new areas of meaningful open space, and the maintenance and improvement of the City's permeability should be considered in all proposals."

Policy EN2 Tall Buildings

6.33. The Policy requires that: *"Tall buildings are defined as buildings which are substantially taller than their neighbourhoods and/or which significantly change the skyline. Proposals for tall buildings will be supported where it can be demonstrated that they:*

- *Are of excellent design quality;*
- *Are appropriately located;*
- *Contribute positively to sustainability,;*
- *Contribute positively to place making, for example as a landmark, by terminating a view, or by signposting a facility of significance; and*
- *Will bring significant regeneration benefits.*

6.34. A fundamental design objective will be to ensure that tall buildings complement the City's key existing building assets and make a positive contribution to the evolution of a unique, attractive and distinctive Manchester, including to its skyline and approach views."

Policy EN3 Heritage

6.35. The Policy requires that: *"New developments must be designed so as to support the Council in preserving or, where possible, enhancing the historic environment, the character, setting and accessibility of areas and buildings of acknowledged importance, including scheduled ancient monuments, listed buildings, registered parks and gardens, conservation areas and archaeological remains."*

Policy EN9 - Green Infrastructure

6.36. The Policy states that: *"New Development will be expected to maintain existing green infrastructure in terms of its quantity, quality and multiple function. Where the opportunity arises and in accordance with current Green Infrastructure Strategies the Council will encourage developers to enhance the quality and quantity of green infrastructure, improve the performance of its functions and create and improve linkages to and between areas of green infrastructure. Where the benefits of a proposed development are considered to outweigh the loss of an existing element of green infrastructure, the developer will be required to demonstrate how this loss will be mitigated in terms of quantity, quality, function and future management."*

Guidance

First Street Strategic Regeneration Framework (2015) and Development Framework (2018 and 2020)

6.37. The First Street area has been a regeneration priority for Manchester City Council for several years. MCC has approved several Development Framework and Strategic Regeneration Frameworks for the area since 2010. These documents identify four distinct development areas, comprising First Street North, First Street Central, First Street South, and the Creative Ribbon. The First Street SRF defined the "key role and function of each of these areas, appropriate development activity and a set of urban design criteria providing a framework for future proposals" (Deloitte, 2018), and has been updated by subsequent Development Frameworks. The Proposed Development is situated within the First Street South development area, as identified within these documents.

6.38. The most recent Development Framework (Deloitte, 2018) of relevance to the First Street South development area provides relevant information on the existing character of the area as well as setting a framework for the scale, type and quality of development that is likely to be appropriate there, including immediately around the Site. It is intended to be judged as a material consideration in the determination of any planning application within the area.

Assessment Methodology and Significance Criteria

Scenarios Tested

6.39. The scenarios tested within the chapter are: the effect of the Proposed Development (and embedded mitigation) against the 'baseline', i.e. the townscape as it appears at the time of writing the ES, including baseline committed developments that are under construction; and the effect of the Proposed Development (and embedded mitigation) with cumulative Developments.

6.40. The methodology for the assessment is set out in Appendix 6.6 and follows the current guidance for landscape and townscape assessment set out by the Landscape Institute and other relevant bodies.

6.41. Significant effects for both landscape/townscape and visual receptors is judged at Moderate and above.

Aims and Objectives

6.42. This Chapter is to assist in understanding both the townscape and visual amenity of the surrounding areas.

6.43. It will seek to understand the proposed townscape and visual sensitivity of the receiving landscape, the likely effects of the developments proposed to date and the effects, both positive and negative of a larger development proposal. Significant effects have been identified where present and mitigation measures devised to reduce these effects. The results of this assessment and process have then been taken forward into the design process.

6.44. The Sites were visited, and the surrounding road network driven. Positive and detracting elements in the townscape were recorded, as was the general land use and quality of the site. Viewpoints were identified based on public viewpoints (public footpaths), private viewpoints (residential properties) and key distant viewpoints to determine the wider impact on the landscape and where development would have the potential to affect the quality and character of existing views and in consideration of the nature of the proposed development. A study area of approximately 1km was assessed in consideration of the likely visual envelope. Potential longer distance views were also considered from more distant locations. A photographic record of the study area, surrounding context and important views/character were recorded.

6.45. The methodology seeks to use recognised, published industry standards and techniques to identify and describe a townscape and visual baseline and ascribe a sensitivity to these townscape and visual receptors which may be altered through the introduction of the proposed development. Townscape and visual impacts are considered separately although the conclusion on sensitivity and impact will have regard to both these related areas of study and proposals made for the mitigation of that impact.

6.46. The magnitude of change brought about through the proposed development is considered alongside the level of sensitivity for each townscape area or receptor and the level of townscape or visual effects is expressed as a combination of these two elements.

Indicators Of Townscape Value

6.47. Technical Information Note by the Landscape Institute, states the following as indicators of Townscape Value:

6.48. Value relates to the relative importance of the townscape to different stakeholders and can apply to areas of townscape as a whole, or to individual elements, features and aesthetic or perceptual dimensions which contribute to the character of the place. Paragraph 5.20 and box 5.1 of GLVIA3 provide lists of information which can contribute to an understanding of value. Practitioners typically consider:

- Buildings, open spaces, or other features, which contribute positively to the character of a Conservation Area and may be designated.
- Buildings, open spaces, or other features of townscape merit outside of Conservation Areas and may be designated.
- Buildings or groups of buildings, and open spaces which have won awards for architecture or design quality, such as Civic Trust or RIBA awards.
- Buildings, open spaces, or other features identified on a local list.
- Greenspaces or other open spaces, which are designated in the Local Plan or have won awards, such as Green Flag.

6.49. The appraisal has been based on guidelines and information provided in the following publications:

- Landscape Character Assessment: Guidance for England and Scotland (The Countryside Agency and Scottish Natural Heritage, 2002).
- Landscape Character Assessment: Guidance for England and Scotland (The Countryside Agency and Scottish Natural Heritage). Topic Paper 6: Techniques and Criteria for Judging Capacity and Sensitivity.
- An Approach to Landscape Character Assessment (Natural England, 2014).
- Guidelines for Landscape and Visual Impact Assessment (GLVIA) 3rd edition (Landscape Institute and Institute of Environmental Management and Assessment, 2013).
- Visual Representation of Development Proposals Technical Guidance Note 06/19 (Landscape Institute, 2019).
- Landscape Institute Technical Information Note 05/2017 (Revised April 2018)..
- Historic England Advice Note 4 - Tall buildings (2015).
- Guide to Development in Manchester Supplementary Planning Document and Planning Guidance (Adopted April 2007).
- Manchester's Local Development Framework Core Strategy Development Plan Document (Adopted July 2012).

Overall Approach

6.50. The TVIA uses best practice guidance to assess the sensitivity of the receptor, quality, nature and value of the landscape and the view and the anticipated magnitude of change following development and the correlated effect (Appendix 6.1- 6.6). Landscape/Townscape and Visual assessment follows a process which seeks to identify a receptor(s) likely to experience change as a result of the proposed development. It seeks to identify the sensitivity to change for each receptor combining an understanding of the susceptibility to change with the value of the receptor. It then considers the level of change likely to be experienced. A combination of the sensitivity and the magnitude of change enables the assessment of effects. The following outlines the structure of the methodology in Appendix 6.6 and the process of assessment outlined within this:

- Table 1 Criteria for describing Townscape susceptibility.

- Table 2 and 3 Criteria for describing Townscape Quality and Value.
- Table 4 Townscape Sensitivity.
- Table 5 Townscape Magnitude of Change.
- Table 6 and 7 Table to determine Townscape Effects.
- Table 8 Criteria for describing Visual Susceptibility.
- Table 9 Criteria for describing Visual Quality and Value.
- Table 10 Visual Magnitude of Change.
- Table 11 Visual Sensitivity.
- Table 12 and 13 Table to determine Visual Effects.

6.51. The purpose of the EIA process is to identify and evaluate potential significant environmental effects arising from the proposed development. The criteria used to determine the sensitivity of the landscape and visual receptors, the magnitude of change, and the assessment of significance of the residual landscape and visual effects are set out in the following paragraphs.

6.52. The Landscape Institute Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (GLVIA 3) has been used as the basis of this Paper. Landscape/Townscape impacts are defined as relating to changes in fabric, character and quality of the landscape/townscape as a result of the proposed development. Visual impacts relate to changes in the available views and are therefore impacts on people and their perceptions.

6.53. The TVIA assesses the potential effects of the Development on the townscape and visual amenity of the agreed study area. It will consider the layout, orientation and setting of the proposed development. The study findings are based on desk top research, visual modelling techniques, photography and fieldwork analysis.

6.54. The TVIA has been undertaken in the following stages:

- Baseline data collection and analysis;
- Scope and methodology;
- Desk top study, and site survey to establish zone of influence;
- Description of baseline townscape and visual amenity;
- Identification and evaluation of potential impacts on the townscape and views;
- Development of mitigation measures / strategy;
- Assessment of landscape and visual effects during construction and operation phases;
- Evaluation of the significance of residual impacts on the townscape and visual amenity;
- Assessment of the Development and any likely results when assessed in combination with any other known projects; and
- Presentation of findings within the ES.

The Study Area

6.55. The study area has been developed through site visits and through the use of ZTV modelling which has identified an indication of where the proposed building may be see from within the city townscape. This was then further explored through trial modelling of the proposals within a digital model to refine the location for viewpoints and the extent of study. The study area is approximately 1km in diameter from The Proposal Site with locations outside of this were considered but found not likely to generate effects. In the north the study area extends as far as Lower Mosely Street, to the east as far as Oxford Road, to the south to Princess St and Bonsall Road and to the west Great Jackson St and Royce Road.

Source of Effect

6.56. The following potential sources of affects attributable to the Proposed Development relating to townscape and views are:

- The local townscape character and its key components, including changes to townscape character areas, urban grain, land use, building heights, movement and linkages, public open space and environmentally designated areas.
- Site character – the Site as a townscape receptor (as defined by the red line boundary).
- Visual receptors, including; local residents, users of public open space, visitors to heritage assets, users of the strategic movement network, and employees at their place of work.
- Cumulative effects are the effects on views and visual amenity enjoyed by people, which may result either from adding effects of the project being assessed to the effects of other projects on the baseline conditions, or from their combined effect. This may result from changes in the context and character of views experienced in particular places due to introduction of new elements or removal of or damage to existing ones.

Significance Criteria

Significance of Effects

6.57. The significance of effect is determined using the significance matrix in Tables 6 and 12 of the methodology Appendix 6.6 of this Chapter. This identifies the receptor level across the top of the matrix and the magnitude of environmental impact down the side and where they meet within the matrix identifies the significance of the effect.

6.58. Following the categorisation of effects using this methodology, further consideration of whether an effect is significant and requires mitigation is carried out using professional judgement. Account is taken of whether effects are considered to be adverse or beneficial, permanent or temporary, direct or indirect, the duration and frequency of the effect and whether any secondary effects are caused. A significant effect in terms of EIA is considered to be any effect classed as moderate or above.

6.59. Following the initial assessment of effects, mitigation may be considered to reduce the significance of any adverse effects. Mitigation is used to reduce or compensate for any adverse effects or to enhance beneficial effects. Re-assessing impact effects after mitigation allows the residual effect of an impact to be determined.

Impact Prediction Confidence

6.60. It is also of value to attribute a level of confidence by which the predicted impact has been assessed. The criteria for these definitions are set out in Table 6.1 below:

Table 6.1 Impact Prediction

Confidence Level	Description
High	The predicted impact is either certain i.e. a direct impact, or believed to be very likely to occur, based on reliable information or previous experience.
Probable	The predicted impact is likely based on direct assessment and factual measurements of change and effect that can be directly demonstrated or demonstrated through recognised landscape assessment tools.
Low	The predicted impact and its levels are best estimates, generally derived from first principles of relevant theory and experience of the assessor. More information may be needed to improve confidence levels.

Townscape Baseline

Core Strategy Character Areas

6.61. The Manchester Core Strategy identifies 2 character areas in the study area: City Centre Character Area

(TCA 7); and Central Arc Character Area (TCA 8). Large elements of both these character areas fall within the study area south of The Proposal Site and river. See Appendix 6.5; Figure 11.

6.62. Below are the Policy EN1 descriptions for both Character Areas, outlining how various land uses are expected to be distributed throughout Manchester:

(TCA 8) Central Arc

6.63. Central Arc SCA: Described by the DPD as:

"The character of the area we have today is predominantly one of 1960's social housing estates and zoned industrial areas bisected by the transport network and largely resulting from the comprehensive redevelopment of the past. Significant areas of employment are found where this area overlaps with the fringe of the City Centre such as at Strangeways which is a large, distinctive, entirely industrial area suitable for further employment growth. Much of the Central Arc is experiencing regeneration with some contemporary urban solutions, for example in Hulme, now complete, and some still to be progressed.

The opportunity exists for development on a large scale using innovative urban design solutions. These should use District Centres and key nodes of public transport as focal points and involve existing communities. The opportunity should also be taken to use the canals to create a distinctive urban environment and enhance access through the City."

6.64. The Central Arc Character Area is characterised by 1960's social housing estates and zoned industrial areas bisected by the transport network. There are significant areas of employment, particularly on the City Centre fringe, as well as areas of regeneration, such as in Hulme. Opportunities also exist for development on a large scale.

6.65. The Proposal Site forms part of the connection between the Central Arc area and the City Centre and part of the southern corridor.

6.66. Townscape Susceptibility: Low reflecting the nature of the majority of built form and the inclusion of industrial use and transport networks within this.

6.67. Townscape Value: Low-Moderate.

6.68. Townscape Sensitivity: Low

(TCA 7) City Centre

"Developers will be expected to consider the City's heritage and continue the rich pattern of activity in the core area." (pg.164)

6.69. City Centre SCA described as:

"The City Centre contains a rich legacy which reflects its urban evolution to the current day and includes listed buildings, conservation areas, archaeological remains and an historic street pattern. Its core area presents a particularly dense environment that accommodates a wide and closely integrated range of uses including commercial, civic and residential activities. Relative to the amount of development there is limited open space and this includes a range of civic and less formal green spaces and waterways. Outside the core and associated with the Inner Relief Route there are less active and less densely developed areas with significant elements of cleared land. The City Centre is the focus of the City's transport routes."

6.70. Developers will be expected to consider the City's heritage and continue the rich pattern of activity in the core area. While there will be opportunities to create landmark buildings, developments should also contribute positively to the experience of all at street level.

6.71. Wherever possible the opportunity should be realised to enhance existing and provide new areas of meaningful open space, and the maintenance and improvement of the City's permeability should be considered in all proposals."

6.72. The City Centre Character Area is dominated by the historic core, although the Site falls outside this area, being associated with the Inner Relief Route. Here there are less active and less densely developed areas with significant elements of cleared land. The City Centre is the focus of the City's transport routes. While

there will be opportunities to create landmark buildings, developments should also contribute positively to the experience of all at street level.

6.73. **Townscape Susceptibility:** Low- there is an expectation that areas such as that at the Sites and its surroundings will continue to be developed.

6.74. **Townscape Value:** Moderate- some historic elements but also a recognition that this falls outside of the central core.

6.75. **Townscape Sensitivity:** Low-Medium, an expectation that development can occur without harm if it is created with an understanding of the existing city and its heritage and seeks to further develop and enhance the existing character.

6.76. Townscape character is illustrated in Figure 11 of Appendix 6.4. The City Centre is divided into several distinct areas within the Local Plan. The Site is located within the Southern Gateway character area, which is characterised by a mix of commercial and student residential properties, along with a significant amount of ongoing new development. The Site is located within the wider Corridor encompassing Oxford Road, Great Jackson Street and First Street areas. It is characterised by the redevelopment of the big institutions, namely the University of Manchester, Central Manchester and Manchester Children's University Hospital Trust. According to the Core Strategy, the area offers opportunities related to research and development linked to the big institutions. Major employment areas include Great Jackson Street and First Street. The area contains a variety of large-scale buildings, underlying which are the remnants of the historic past such as the grid iron street pattern. The area contains a network of open spaces often resulting from more recent developments.

6.77. The Site is located within the Oxford Road Corridor Strategic Area and the First Street Development Framework Masterplan Area, as defined within First Street Medlock Site, Manchester, Development Framework Addendum. The overall character defined for the First Street area is for a residential neighbourhood which sits alongside major employment generating uses and complement the high quality cultural and leisure offer. Since the area was first defined in 2015, a substantial amount of high-quality development has taken place which realizes this character. The Site forms an additional parcel of land which was incorporated into the First Street character area. The Site is located within the First Street Central area, located to the west of Medlock Street. First Street Central is defined as the commercial heart of First Street, focused around large-floorplate office buildings. The Site in its current form does not contribute to reinforcing this character, as defined within the Development Framework Addendum.

Oxford Road Corridor Strategic Spatial Framework

6.78. The Strategic Spatial Framework (SSF) has been prepared on behalf of the Oxford Road Corridor Partnership to accompany the Corridor Strategic Vision to 2025 and identify the spatial principles that should support the strategic themes and objectives set out in that document.

6.79. The SSF takes into account existing policy, estates strategies and adopted development frameworks for Oxford Road Corridor's strategic development sites. The SSF can be used to both guide decision-making on future planning applications, and provide an important point of reference in the formulation of future policy and masterplanning work within Oxford Road Corridor.

6.80. The document identifies clusters. This is not intended to be prescriptive but is suggesting that Oxford Road Corridor is likely to, and should, deliver distinctive clusters of activity focused around its key assets. As previously suggested, this can be helpful in terms of future planning, for example in identifying a hierarchy of land uses, informing the formulation of distinctive place-making strategies; and identifying the need to focus on key linkages that promote movement of people and ideas between these clusters as a pre-requisite for creative thinking, enterprise and innovation.

6.81. Zones within which opportunities to increase the density of development are possible have been identified. Where this happens, it is identified that a premium must be placed on the quality of design and public realm. Likewise, any proposals for increased density will need to be designed to have full regard to the amenity of existing residents, including in relation to privacy, microclimate, traffic and transport.

6.82. The Strategic Spatial Plan thirdly identifies the other transformational strategic investment sites that will need to come forward in line with their adopted Strategic Frameworks or via agreed Development

Principles that should be the subject of consultation with the Oxford Road Corridor Partners. This includes First Street, which continues to be delivered in line with its adopted framework, Great Jackson Street, for which a refreshed Framework was published in November 2017 and North Campus, which is the subject of a Strategic Regeneration Framework adopted in March. The site lies within this First Street area.

- **Townscape Susceptibility: Low** reflecting the nature of the majority of built form and the inclusion of industrial use and transport networks within this.
- **Townscape Value: Low-Moderate**
- **Townscape Sensitivity: Low**

First Street Development Framework 2015 Updated 2020

6.83. First Street has long been a regeneration priority for Manchester City Council and after many years of positive development is now well established as a destination within Manchester City Centre.

6.84. First Street is divided into four principal Development Areas: First Street North, First Street Central, First Street South and the First Street Creative Ribbon.

6.85. This 2018 iteration of the Framework updates the development principles for First Street Central. First St Central will remain the focus for commercial office development within the masterplan. First Street is now an established commercial office location.

6.86. First Street sits at a key node between Manchester's Civic Quarter with its landmark civic buildings and world-class conference facilities and an established office destination centred on St Peter's Square; and the knowledge industry and education engine room of Corridor Manchester and near to the long-established residential community of Hulme, which is also home to Manchester Metropolitan University's Birley Campus.

6.87. Historically, the First Street area has been defined by the Mancunian Way to the south, Medlock Street to the west, Cambridge Street to the east, and Whitworth Street West to the north.

6.88. The Framework identifies three distinct development areas of First Street, incorporating four of the character zones identified in the 2010 Framework. In addition, it includes an East-West Creative Ribbon between Oxford Road and Little Peter Street. The character areas area:

- First Street North;
- First Street Central;
- First Street South

6.89. The site lies within First Street Central.

6.90. The 2018 update to the First Street Framework has sought to update the proposals to reflect better the requirements of the masterplan area and the restricted nature of land available to deliver the masterplans aims. As part of this review further analysis of plots 9 and 10 was undertaken which has indicated that a greater scale and density of development can be delivered on these plots. This includes an increase to the scale of buildings possible.

6.91. First Street Central comprises the central east-west core of the First Street area, immediately south of First Street North and incorporating the sites on the western side of Medlock Street.

6.92. The Framework considers that buildings of up to 17 storeys on Plots 9a and 10a and 12 storeys on Plots 9b and 10b is considered sustainable and deliverable. This height seeks to increase the density of office provision within First Street Central, maximising the potential benefits to be derived from the site and meet the identified demand for development. The site is Plot 9B.

6.93. The Framework stresses the proposed scale and density will respond to the emerging spatial context around First Street and create a visual and functional connection between the edge of the City centre and its core.

6.94. The Framework sets out urban design criteria for the First Street Central Area which are intended as material considerations in planning decisions, they include:

- The critical urban design criteria which underpin the land use.

- Delivery of contemporary well designed medium height buildings (up to 17 storeys) which are naturally ventilated and where car parking provision is by way of shared use of on-site multi-storey options rather than bespoke, and expensive, basement car park solutions unless deemed necessary for operational purposes;
- Where a mix of uses within a building is proposed, how these interact in the architectural expression and operational management must be addressed within any detailed planning application;
- The encouragement of active ground floors where possible for all buildings, with an emphasis on strong north/south and east/west pedestrian links with First Street, Medlock Street and Wilmott Street in particular;
- Appropriate façade treatments, particularly in respect of the key "Medlock gateway" frontage, which recognise the prominence and landmark status of the site in the context of an arrival point to the City Centre.
- Flexible commercial, retail and leisure uses along Wilmott Street frontage that interacts positively with generous and high quality public realm along this route.

6.95. Townscape Susceptibility: Low - there is an expectation that this area will change through development and that the site will play a part in this through a masterplanned route. The plan extent of development on The Proposal Site at plot 9b is part of the masterplanned response to First St. There is guidance towards the approach to uses and building height and form with the proposals responsive and sensitive to this guidance.

6.96. Townscape Value: low-Moderate - this is an emerging neighbourhood with some established historic buildings and a completed First St north area that is now a connected and fully functioning cultural part of the city centre. Other areas immediately around The Proposal Site are under construction or vacant.

6.97. Townscape Sensitivity: Low - The First St area has a low sensitivity to the proposed development with a high expectation of development aligned with the form, appearance and use currently proposed.

Urban Grain

6.98. The urban grain of the site and study area is illustrated in Figure 6 Appendix 6.4

6.99. The Site together with plots 10a and 10b currently forms a void in the urban grain in a key location within First Street and the wider city centre.

6.100. The wider study area is a varied mix of built form: to the north and east the urban grain follows in part the more historic grid of the older grid pattern of the Victorian city. A combination of older buildings and more modern development creates a strong urban grain, new, large footprint commercial buildings line a newly established grid of streets, punctuated by a variety of public spaces ranging in size.

6.101. To the south the urban grain remain more coarse and open as the large intervention of the Mancunian Way cuts through the historic street pattern and urban form forming a clear boundary to the area. More finely grained residential areas lie south of the Mancunian Way.

6.102. To the west redevelopment is underway but much of the land is open and not developed detracting from the urban grain established to date and the connections through the First Street. Area. More recent infill development within the First Street Development Framework area has created a new urban grain for the area. New, large footprint commercial buildings lined by a newly established grid of streets, punctuated by a variety of public spaces ranging in size.

6.103. The more fine-grained residential development to the south of the Site is separated from the Site and surrounding First Street area by Mancunian Way motorway, which creates a substantial north-south barrier between those two areas.

6.104. Susceptibility: Low-Moderate, the urban grain of the site and surrounding streets is based around a historic grid pattern, some parts of this have been lost or are currently vacant with void areas within the structure of the streetscape.

6.105. Value: Moderate- a recognisable pattern and form that has been replicated and retained through the masterplanning for the site and surrounding areas of First St.

6.106. Sensitivity: Low-Medium.

Land Use

6.107. The predominant land use within the First Street area is residential use with commercial and retail use to the north. Mixed commercial, retail and leisure uses intensify to the north, toward the heart of the city centre, and residential use is found throughout but intensifies to the south on the city fringes. The area to the west contains predominantly student residential uses, including private residential buildings. The area to the south is lower rise residential and also contains a number of higher education buildings belonging to Manchester Metropolitan University.

6.108. The First Street Masterplan looks to the land use becoming predominantly a commercial district with a focus on high quality office space. It also outlines the ongoing economic case for providing high quality student accommodation within the Masterplan area.

6.109. First Street North is now a cultural hub for the city including HOME a contemporary art, film and theatre complex alongside a wider mix of uses including student accommodation, an MSCP and a range of carefully curated food and drink operators, as well as new public spaces. The land uses within First Street North contribute substantially to defining the townscape character within First Street.

6.110. There is currently no defined land uses within the Site but the immediate context of the virtually complete Plot 9a sets a precedent for the scale, form and building use within the interconnected grid. Open land to the north within Plot 10a and10b detracts from the First Street townscape character, but these plots are also expected to develop alongside the site as part of the urban grid and First St Central area.

6.111. Plot 9a has been developed by Government Property Agency (GPA), Plot 11 to south is under construction and once complete will include 4 buildings of co-living bedspaces and associated amenity facilities, along with ground floor commercial units. It currently has no active land use.

6.112. Once complete, Plots 9a, 10 and 11 will create a cohesive mix of land uses in conjunction with Plot 9b, that will help to define the character of First Street Central.

6.113. Susceptibility: Low-although some land use is emerging the masterplanning and completed sections of First St have directed a clear approach within which the emerging and remaining parts of the masterplan areas will be developed.

6.114. Value: Moderate-good- for areas of the completed First st north and for areas of the historic built form restored and in new use. Low-Moderate for emerging areas and for void areas with no use.

6.115. Sensitivity: Low-Medium.

Building Heights

6.116. Building heights are shown in Figure 8 Appendix 6.5.

6.117. The area to the east of the site, beyond Plot 10a and 10b, is broadly characterized by a 6-10 storey height, with a handful of buildings reaching 15 storeys or higher. To the west and south of the site, high-rise student and private residential towers have increased the building heights of the wider area.

6.118. The collection of buildings that comprise Deansgate Square to the east are all above 30 storeys. Buildings heights to the north west of the Site range from 4-7 storeys. River Street Tower is a student residential block and sits above 32 storeys high with several up to and above 60 storeys. Buildings within the First Street character area to the north of the site are largely 7-10 storeys in heights Forthcoming development within the First St masterplan area at Plot 11 has 45 storey development in planning.

6.119. The First Street Development Framework states that :

"Following further analysis, it is considered that buildings of up to 17 storeys on Plots 9a and 10a and 12 storeys on Plots 9b and 10b is considered sustainable and deliverable. This height increases the density of office provision within First Street Central, thereby maximising the potential benefits to be derived from the site and meet the identified demand for offices in a

highly sustainable and commercially attractive location. An increase in scale and density will respond to the emerging spatial context around First Street and create a powerful visual and functional connection between the edge of the City Centre and its core. The approach maintains the focus on the provision of public realm and landscaping of the very highest quality which is so central to the First Street offer."

6.120. Plot 9a has been developed out as a 10 storey building leading toa disconnect with the imagined masterplan building heights and the relationship between plots within First St Central and South.

6.121. Susceptibility: Low-Medium - the masterplan sets out that buildings of up to 17 storeys in height would be sustainable over the plot 9 and 10 development areas. First St south is described as able to accommodate a mix of low, medium and high rise building to create a cohesive neighbourhood.

6.122. Value: Low- Moderate. Buildings heights within the established First st north are between 6 and 10 storeys and the adjacent plot 9 a is around 10 storeys in height. These have begun to deliver on the overall masterplan vision and set out a townscape that emerging development needs to respond to.

6.123. Sensitivity: Low-Medium.

Connections And Public Open Space

6.124. The site fronts onto Medlock St forming an important part of the streetscape and the final element in completing this west facing frontage alongside Plots 9a of the central area and building north and south.

6.125. South of the site Medlock St merges into Princess Road, a key arterial route connecting the City Centre with several suburbs to the south. Hulme St connects the central area and the site all the way to Oxford Road. Full movement through the street grid is not possible due to construction and the undeveloped nature of the Site. This position will alter as streets are re-opened and sites within the masterplan area are completed.

6.126. The site and the First St area are connected by cycleway and walking routes to the wider city. Both Deansgate and Oxford Road station are within easy walking distance. Medlock St and the Mancunian Way form physical barriers within this townscape but the masterplan seeks to improve this through the re-integration of the urban grain east to west. The Mancunian Way effectively defines the southern extents of the City Centre.

6.127. Currently the site does not contribute to the public open space of the Central Area. The neighbouring sites and to the north the wider First Street area provides public realm and pedestrian streets incorporating public squares. Currently the site and adjacent construction sites are detracting elements.

6.128. Susceptibility: Medium - the established First st north and parts of the emerging First st central include well used and integrated public open space. Connections are developing within the emerging masterplan to enable a porous movement network through the urban grid.

6.129. Value: Low- Moderate - Areas of the First st and the surrounding townscape are well connected and include well designed and used public realm space. Other parts of the masterplan area and locations west of Medlock St and north across the Mancunian Way remain blocked by development or with significant highway barriers to easy pedestrian movement.

6.130. Sensitivity: Low-Medium.

Historical Townscape Development and Heritage Townscapes

6.131. See Figure 4 Appendix 6.5. , please refer to Figure 1-3 of Appendix 6.5 for historical development and context.

6.132. The site, its immediate surroundings and the study area generally has undergone major transformation over the last 200 years. The 1845 map shows a rigid grid of terraced housing surrounding the site either side of Medlock St. Directly north is the large industrial complex of the Gaythorn Gasworks. This dense and rigid grid arrangement with industry to the north and east persists into the 20th century. (Figure 3-1 Appendix 6.5)

6.133. The 1956 map indicate substantial change across the study area with all of the housing removed, presumably through slum clearance and/or bomb damage. The townscape has many blank and open areas

with industrial scale buildings and the Gasworks dominating. The street grid remains largely intact. (Figure 3-3 Appendix 6.5)

6.134. By 1972 the Macunian Way has cut through the south of the study area with a clear distinction in townscape character developing. South of the ring road new residential housing dominates in Hulme. North of the ring road the townscape remain dominated by larger industrial buildings, the Gasworks and remnant elements of the original street grid. University buildings have begun to appear in the south of the City Centre area. (Figure 3-4 Appendix 6.5)

6.135. The 2005 plan shows a clear decline and demolition across the areas north of the Mancunian Way with the Mills, Industrial buildings and Gas Works demolished and replaced with surface car parking or derelict plots. The current plans indicate the reversal of this decline through the development of the First Street Masterplan.

Castlefield Conservation Area

6.136. Castlefield Conservation Area, southwest of Manchester's city centre, centres around its Roman fort, dubbed 'castle in the field'. Designated in October 1979, it spans the city's contours along the River Irwell and various streets. An extension in June 1985 expanded its boundaries. Recognised for its significance, it gained outstanding conservation area status in January 1980. Despite national changes, Castlefield's importance persists, blending heritage with modern urban living.

6.137. **Townscape Susceptibility: Medium -High.**

6.138. **Townscape Value: Good (heritage assets).**

6.139. **Townscape Sensitivity: Medium-High**

Whitworth Street Conservation Area

6.140. The Whitworth Street/Princess Street conservation area is uniquely Mancunian in character, its physical form being established by the wealth of fine Victorian and Edwardian buildings erected between 1850 and 1920. They reflect the historical importance of the textile industry in the city.

6.141. The conservation area was designated by the City Council in September 1974, and was bounded by Oxford Street, Portland Street, Abingdon Street, Bloom Street, Chorlton Street, Cobourg Street and the Piccadilly to Oxford Road railway viaduct. It was extended in June 1985 to include an area bounded by Whitworth Street, London Road and the above viaduct

6.142. **Townscape Susceptibility: Medium -High.**

6.143. **Townscape Value: Good (heritage assets).**

6.144. **Townscape Sensitivity: Medium-High**

Townscape Value

6.145. The central reference for considering landscape value is the Guidelines for Landscape and Visual Impact Assessment (GLVIA3). In brief it considers the following factors in assessing whether a landscape is valued: Landscape quality/condition; Scenic Quality; Rarity; Representativeness; Conservation Interests; Recreation Value; Perceptual Aspects; and Associations. This has been supplemented by further guidance from the Landscape Institute: TGN 02-21: Assessing landscape value outside national designations .

6.146. With regard to the Application Site and its surroundings, the landscape quality and condition is typically Low-Moderate as the townscape is generally emerging and has an incomplete urban grain, form and land uses. The completed First St north has a higher landscape condition becoming an established part of the city centre.

6.147. The scenic quality is generally mixed with an emerging strong urban character strongly influenced by the surrounding tall buildings both emerging in First St south and those around the south of Deansgate. More low rise historic mill buildings along Hulme Street and Chester Street within the streets leading towards Oxford Rd add a strong sense of place at ground level. This is a changing and emerging view but where development of the masterplan is complete or evident the scenic quality is moderate-good being engaging

and building on the character of the older surviving buildings. Where open land remains and plots are unbuilt the scenic quality is low with an obvious break in the urban grain and street scene.

6.148. The townscape surrounding the Application Site has elements of rarity through its associations with the remaining older buildings most notably the former Mills including Macintosh Mill and Chorlton New Mills which are Grade II listed. Generally, though the quarter is re-imagined from a former gas works and industrial area through various modern interventions to today's masterplanning exercise which has seen the transformation of the First St area. Although still retaining something of the historic grid and some historic buildings the study area has only a Low-Moderate level of rarity.

6.149. For the same reasons the townscape of the study area is only partially representative of this part of the city and of the city more generally. The emerging First St area will have its own distinct character in part through the intervention that the proposals represent.

6.150. The townscape has several specific historic and conservation interest. This relates to the listed buildings within the surrounding streetscape. It also includes the wider city centre and specifically the Castlefield and Whitworth Conservation Areas. Generally, the conservation value of the study area includes areas of good value but closer to The Proposal Site has a lesser value with a more degraded landscape and only remnant historic urban patterns with some remaining buildings of note.

6.151. Recreational opportunities are extensive within the wider study area most notably at the neighbouring First St north and the Home theatre and cinema. Closer to The Proposal Site the situation is emerging but within First Street Central there are recreational opportunities with eating and drinking establishments as well as Gym facilities. Generally good-moderate.

6.152. The landscape is one where tranquillity and remoteness are not found as this is a busy city centre with an emerging masterplan that seeks to bring the remaining areas squarely within the orbit of the neighbouring busy areas of this central district.

Summary of Landscape Character Sensitivity

Table 6.2 Landscape Character Baseline Sensitivity

Hierarchy of Importance	Townscape Character Area / Element	Townscape Value	Susceptibility	Sensitivity
Regional	City Centre (TCA 7)	Moderate	Low	Low-Medium
Regional	Central Arc (TCA8)	Low-Moderate	Low	Low
Regional	Oxford Road Corridor	Low-Moderate	Low	Low
Local	First St Masterplan Area	Low-Moderate	Low	Low
Local	Urban Grain	Moderate	Low-Moderate	Low-Medium
Local	Land Use	Moderate-Good ~ Low-Moderate for emerging areas	Low	Low-Medium
Local	Building Heights	Low-Moderate	Low-Medium	Low-Medium
Local	Connections and Open Space	Low-Moderate	Medium	Low-Medium

Local	Heritage Townscapes Conservation Areas Listed Buildings	Good	Medium-High	Medium-High

Visual Baseline and Selected Views (Appendix 6.3 and 6.4)

6.153. In considering the possible landscape and visual effects of the proposal scheme both the townscape baseline and the visual baseline have been assessed.

6.154. The potential visual effects of the proposal proposals have been assessed through a site visit and photographic survey (which is reproduced in Appendix 6.3 and 6.4 and summarised in Appendix 6.2). View locations are found in Appendix 6.3, 6.4 and Figure 2A of Appendix 6.5.

View Locations

Residential Receptors

6.155. View 2: The view is from Princess Road public footpath. The view looks towards the City Centre with the site largely falling behind mature vegetation alongside the sunken road route. Residential properties are set back from the footway and have some elevated views from windows and balconies towards the site. The view is urban and dominated by the emerging high rise skyline of First Street and Hulme bridge. The representative view is from properties off Princess Road and Leaf Street with what appear as rear facing views through boundary vegetation.

6.156. Susceptibility is Medium as locations appear to be rear view windows, heavily screened with visibility generally from upper floor windows.

6.157. View 3: The view is from Bonsall Street crossing the Princess Road. The Hulme arch bridge is prominent in the fore ground with high rise development framing the view to the right. More low rise development and University buildings are visible to the left of view. The skyline is dominated by high rise residential and office buildings from First Street to the Beetham Tower and including numerous other tall buildings in between. The representative view is from properties on Bonsall Street and Stretford Road from high rise or medium rise apartment blocks.

6.158. The Susceptibility is Low-Medium as views are elevated and encompass potentially panoramic views across an entirely urban townscape view where the nature of the proposed change and change itself is an expected and common presence.

6.159. View 4: The view is from Princess Road pedestrian route and cycleway. The view is dominated by the fly over of the Macunian Way and the road junction generally and is further influenced by the emerging tall building skyline of First St and surrounding urban areas. The character of the view is urban and busy with a very strong vertical element creating a wide upward frame of view. The representative view is from properties on Rockdale Ave from medium rise apartment blocks.

6.160. Susceptibility is Medium as locations appear to be rear view windows, heavily screened with visibility generally from upper floor windows.

6.161. View 5: The view is from further down River St looking back toward Medlock St. The commercial and residential properties between here and Oxford Road dominate the view as do the emerging high rise skyline of buildings on Medlock St and Wilmott St. New development onto Medlock St appears to be imminent. The character of the view is urban and large scale with continuing change and development part of the modern visual baseline. The representative view is from high rise residential properties on River St and commercial office space on Medlock St and River St.

6.162. The Susceptibility is Low-Medium as views are often elevated and across an entirely urban townscape view where the nature of the proposed change and change itself is an expected and common presence.

6.163. View 6: The view is from Great Jackson Street. The view is busy and urban with a changing skyline and multiple high rise buildings around the location creating a large scale and transient visual baseline. Large construction sites and construction activity around the location are detracting elements at ground level. Across the skyline tall buildings dominate. The representative view is from principally residential apartments within the high rise blocks along Great Jackson St.

6.164. The Susceptibility is Low-Medium as views are elevated and encompass potentially panoramic views across an entirely urban townscape view where the nature of the proposed change and change itself is an expected and common presence.

6.165. View 8: The view is from River Street to the west of Medlock St looking directly towards The Proposal Site. The view is enclosed and dominated by the tall buildings that define and surround the street grid. This is a dense urban environment with a large scale and modern visual character. Public open space and street design create in places pedestrian dominated areas at ground level. residential apartments surround the location and will overlook the proposals. Representative of receptors for surrounding apartment, primarily at elevated positions in the surrounding urban blocks.

6.166. The Susceptibility is Low-Medium as views are elevated and encompass potentially panoramic views across an entirely urban townscape view where the nature of the proposed change and change itself is an expected and common presence.

6.167. View 9: The view is from Hulme Street. The surrounding area consists of modern residential properties, facing the proposed development, that are under construction and older converted lower rise warehouses. The visual character is of a mixed urban townscape with some heritage aspects. The scale at ground level is smaller as part of a tighter urban grain, the wider skyline connects to a larger scale and more expansive urban environment that surrounds this.

6.168. The Susceptibility is Medium reflecting the smaller and more intimate visual scale of views from residential properties within older buildings.

6.169. View 12: The view is from Chepstow Street and is representative of properties overlooking, and on the street, and users of the highway network. The visual character is urban with an element of historic connection, the Pevril Public House is in view as are other notable historic buildings. These sit alongside more modern development which forms a medium scale visual character of mixed uses within the city centre. Large high rise blocks appear in the mid distance creating a larger scale skyline.

6.170. The Susceptibility is Medium reflecting the smaller and more intimate visual scale of some views from residential properties.

6.171. View 13: The view is from Little Peter Street as it joins Medlock St. It is representative of users of the highway and people in office and residential accommodation on Little Peter St and opposite at First St. The street view is wide with an urban vista that includes office, recreation and residential. The character is urban and the scale is medium-large with high rise development forming the skyline and defining sections of Medlock St. New construction projects are also a visual detractor and prominent in the view.

6.172. The Susceptibility is Low-Medium as views are elevated and encompass potentially panoramic views across an entirely urban townscape view where the nature of the proposed change and change itself is an expected and common presence.

6.173. View 14: The view is from Trinity Way. The surrounding area predominantly consists of modern residential properties, some of which are under construction, facing the proposed development. The road is a busy route with significant traffic movement and noise. The existing tall buildings are dominant features of the townscape, and the proposed development will occupy a portion of this view.

6.174. The Susceptibility is Low-Medium as views are elevated and encompass potentially panoramic views across an entirely urban townscape view where the nature of the proposed change and change itself is an expected and common presence.

Leisure and Pedestrian Receptors

6.175. There is one receptor and view identified within the study area that is not associated with a highway, residential or commercial property and is a local park with users using the grounds for general recreation,

sport and social activities.

6.176. View 7 is from within Hulme Park. The park sits at the edge of the high rise and high density areas of the city centre and is a transition space between lower rise built for to the south and high rise and the denser urban matrix of the centre. The skyline is dominated by high rise towers giving a cityscape and urban characteristic but the park is expansive and open with a managed leisure and recreational character. Mature trees provide a ground level screen to development beyond the boundaries.

6.177. The susceptibility is High and value Ordinary to Moderate reflecting its local value as recreation and open space within the city.

Vehicular and Pedestrian Receptors

6.178. All of the views within the study area that can be experienced by vehicles can also be experienced by pedestrians. The susceptibility of these receptors varies however but in general is considered to be low for vehicular users due to the fast moving and transient nature of the views. For other users including cyclists and pedestrians using the highway footpath network the susceptibility is assessed s medium reflecting the existing nature of such views and visual experience along both minor and major transport routes through the city. The views for this collection of receptors are considered together within this section.

6.179. Descriptions for views already identified for other receptor types are not repeated here but the view is simply recorded as being representative of highway users as well as other types of receptor.

6.180. View 1: The view is from Medlock Street. The surrounding area predominantly consists of modern residential properties, facing the proposed development, that are under construction. The road is a busy route with significant traffic movement and noise. This area functions as a junction connecting multiple motorways. The existing tall buildings are dominant features of the townscape, and the proposed development will occupy a portion of this view.

6.181. The Susceptibility is Low-Medium as views are of an entirely urban townscape view where the nature of the proposed change and change itself is an expected and common presence. The receptors are people making journeys through this townscape on foot or by vehicle and along the highway network

- View 2: as previous description but from the highway
- View 3: as previous description but from the highway
- View 4: as previous description but from the highway
- View 5: as previous description but from the highway
- View 6: as previous description but from the highway
- View 8: as previous description but from the highway
- View 9 as previous description but from the highway.

6.182. View 10: The view is from Chester Street from an area of public open space and pocket park associated with office development. The visual character is urban with a mix of modern and historic buildings. The immediate visual scale is smaller than other areas due to the location within an area of tighter urban grain and includer older, lower rise and converted warehouse buildings, the skyline and wider townscape visual scale is large and dominated by high rise apartments.

6.183. The Susceptibility is Low-Medium as views are of an entirely urban townscape view where the nature of the proposed change and change itself is an expected and common presence. The receptors are people making journeys through this townscape on foot or by vehicle and along the highway network.

6.184. View 11: The view is from Oxford Road looking down the narrow Hulme Street. The view is dominated by the surrounding buildings which define the street creating a corridor towards The Proposal Site and Medlock St. The visual scale is medium-large increasing towards Medlock St and the large high rise buildings. There is an open visual corridor which leads the viewer along this section of the urban grid.

6.185. The Susceptibility is Low-Medium as views are of an entirely urban townscape view where the nature of the proposed change and change itself is an expected and common presence. The receptors are people

making journeys through this townscape on foot or by vehicle and along the highway network.

6.186. View 12: as previous description but from the highway.

6.187. View 13: as previous description but from the highway.

6.188. View 14: as previous description.

6.189. View 15: The view is from Princess Road. The road is a busy route with significant traffic movement and noise. The building is located at a considerable distance from the proposed development and will form part of the urban building cluster visible from this view. The city skyline of high rise buildings and emerging buildings runs from left to right across the visible view along the southern corridor of the road.

6.190. The Susceptibility is Low-Medium as views are of an entirely urban townscape view where the nature of the proposed change and change itself is an expected and common presence. The receptors are people making journeys through this townscape on foot or by vehicle and along the highway network.

6.191. View 16: The view is from A57(M) Mancunian Way. The surrounding area predominantly modern University, Commercial and residential properties. The road is a busy route with significant traffic movement and noise. The existing tall buildings are dominant features of the townscape, and the proposed development will occupy a portion of this view within an existing and emerging cluster of tall buildings around the southern gateway to the city.

6.192. The Susceptibility is Low as views are of an entirely urban townscape view where the nature of the proposed change and change itself is an expected and common presence. The receptors are people making journeys through this townscape by vehicle only and along the highway network.

Table 6.3 Visual Receptors

View Point	Description of Receptor	Value of View	Sensitivity to Change
1	Highway/Pedestrian Medlock St	Ordinary-Moderate	Low-Medium
2	Highway/Pedestrian/Residential Princess Road	Ordinary-Moderate	Low-Medium
3	Highway/Pedestrian/Residential Bonsall St	Ordinary-Moderate	Low-Medium
4	Highway/Pedestrian/Residential Princess Road	Ordinary-Moderate	Low-Medium
5	Highway/Pedestrian/Residential River St	Ordinary-Moderate	Low-Medium
6	Highway/Pedestrian/Residential Great Jackson Street	Ordinary-Poor	Low-Medium
7	Leisure/ Park footpath Hulme Park	Ordinary-Moderate	High
8	Highway/Pedestrian/Residential River St	Ordinary-Moderate	Low-Medium
9	Highway/Pedestrian/Residential Hulme St	Ordinary-Moderate	Low-Medium
10	Local Centre, public highway, Office Chester St	Ordinary-Moderate	Low-Medium
11	Highway/Pedestrian Oxford Road	Ordinary-Moderate	Low-Medium
12	Highway/Pedestrian/Residential Chepstow St	Ordinary-Moderate	Low-Medium
13	Highway/Pedestrian/Residential Little Peter St	Ordinary-Moderate	Low-Medium
14	Highway/Pedestrian/Residential Trinity Way	Ordinary	Low-Medium
15	Highway/Pedestrian/Commercial Princess Road	Ordinary	Low-Medium

Identification and Evaluation of Likely Significant Effects

Potential Construction Phase Townscape Effects

6.193. A detailed assessment of the construction phase effects for townscape character areas and elements and views is set out in Appendices 6.1 and 6.2. Reasonable assumptions have been made in order to provide a basis for the assessment and represents a 'worst case' in accordance with the Guidelines.

6.194. Sources of townscape character and visual construction effects include:

- Site setup and site compound (visual effects).
- Site/boundary fencing (visual effects).
- Cranes and construction machinery/equipment.
- Site clearance, removal and disposal of any existing material (landscape and visual effects).
- Ground Works including site remediation, levelling & preparation (townscape character effects, and visual effects).
- Site access (movement and linkages – townscape character effects, visual effects).
- Contractor parking, plant and equipment (visual effects).

Potential Operational Phase Townscape Effects

6.195. The components of the townscape which may potentially be affected by the Proposed Development are known as the townscape character receptors. These include the characteristics and character of the townscape, townscape character elements and the character and quality of designated areas.

6.196. Likely townscape effects have been identified with reference to interactions between the Proposed Development and townscape character receptors. Likely visual effects have been identified with reference to interactions between the proposed development and visual receptors. The likely notable effects (highlighted below) are assessed in more detail in Appendices 6.1 and 6.2.

6.197. Sources of townscape character and visual construction effects include:

- Changes to land use.
- Changes to the urban grain and grid.
- Changes to building height.
- Changes to movement networks and connections.
- Changes to the street network and public open space.
- Changes to the character and experience of the site and townscape.
- Potential changes to the surroundings of listed buildings, Conservation Areas and other heritage assets.
- Changes to the character, quality and nature of views within the townscape.

General Overview of Townscape Effects

6.198. The proposals will bring about a change of land use from a currently vacant site to one which will have a clear urban use in line with the First St masterplan. The change will be a large change for The Proposal Site but a relatively small change to the surrounding townscape character areas. The urban grain and urban grid will be re-enforced by the proposals creating an urban built form within the masterplanned grid, which is itself based upon a historic urban grid and street pattern. This will be a low level change to the townscape, gain following the masterplanned layout and fitting into the existing and emerging grid and urban grain.

6.199. The proposed building height is above that suggested within the First Street Central masterplan area, rising

to a maximum height of 33 storeys. The adjacent Plot 11 building heights however rise to 45 metres (and Park place (56 storeys)) in contrast to the emerging plots within First St central (Plot 9a 9 storeys, plot 10a 13 storeys, plot 10b height 14 storeys). The proposed building Plot 9B, at up to 33 storeys forms a visual and physical step up from the lower levels of the other First Street North and central buildings. When viewed from Medlock Street and more generally from the southern gateway areas the proposals offer a link to the emerging high rise buildings along the city's southern edge. The proposed building form and height is a response to the developing masterplan within First Street central and explicitly to the Plot developments that surround it. Although outside of the masterplan parameters the proposed building offer a positive height and massing to Medlock Street and onto Hulme and River Street maintaining the visual gateways and vistas across this section of the city.

6.200. Movement around the proposed development will be enhanced with the opening up of routes between plots and the creation of public open space areas and tree planting to the streetscape. The change will be beneficial and complementary to the aims of the masterplan.

6.201. The proposed development will have a negligible effect over the nearby city Conservation Areas due to the very limited opportunities for any intervisibility between the proposals and these locations. The largest effects will be to the nearby listed mill buildings on Hulme Street but this is in the context of a significant change to the skyline and surrounding townscape character already being substantially underway. The visual change to the emerging skyline brought about by the proposed development is low and beneficial offering a step down in height down from Plot 11 towards the lower rise buildings of First Street central and north. The neighbourhood will become re-energised through the use of the buildings within the masterplan and improve the townscape character and setting for the listed buildings.

6.202. Generally, the townscape character of the city is being improved through the development of the First st masterplan and this is evidenced by the completed First st north which has become a cultural focus for the city. The emerging buildings of First Street Central are also bringing clear economic benefits and re-activating the street frontages of Medlock Street, River Street and Hulme Street. The proposed building plays a small role in moving forward these beneficial objectives and outcomes.

Cumulative Effects

6.203. Cumulative effects are defined as impacts that result from additional changes to the townscape or visual amenity caused by the Proposed Development in conjunction with other committed developments (i.e. those with an extant/valid planning permission). The cumulative assessment is considered with reference to the following scenario:

- Scenario 3: Existing site (baseline) with cumulative developments and Proposed Development.

6.204. A number of Sites within the study area benefit from extant Planning Permission, or are currently under consideration by the Local Planning Authority. These are discussed below and listed in Appendix 6.1 of the ES

6.205. As the likely construction period for each of the cumulative schemes is unknown, an assessment of the likely cumulative effects during the operational phase has been provided only, in order to create a robust assessment.

6.206. Where consented development is not at a stage of construction which is advanced enough to give a reasonable indication of ultimate scale and massing, it has been included within the cumulative assessment in order to provide a robust assessment of likely townscape and visual impacts.

Cumulative Townscape Effects

6.207. The cumulative townscape assessment considers the cumulative impacts on the First Street character area (as defined by the Development Framework) as those cumulative projects that fall within the masterplan area considered alongside The Proposal Site. Cumulative effects of the proposals alongside developments more remote than this have been considered not likely to generate significant townscape character effects and have been scoped out of further assessment.

6.208. There are five developments within or at the boundaries of the First st masterplan area that have been

considered for cumulative effects:

a) Plot 9a, First Street 132600/FO/2021 Erection of a nine-storey building with rooftop plant and basement comprising office accommodation (Use Class E(c)) with ancillary facilities for occupiers including roof top terrace, winter gardens, gym/ yoga studio, basement car parking (26 spaces) and cycle parking (130 spaces) landscaping and other associated works.

   Under Construction -Construction commenced 11 October 2022

b) Plot 10b, First Street (House of Social) 136170/FO/2023 Erection of 14-storey building comprising purpose-built student accommodation (PBSA) (Sui Generis) and ground floor Food Hall (Sui Generis Use), and other associated works including external amenity spaces, public realm, secure cycle parking, access and servicing arrangements (Plot 10B).

   Under Construction -Construction commenced 14 August 2023.

c) Plot 11 First Street South (Square Gardens) Construction of four buildings of heights varying from 10 storeys to 45 storeys together comprising Co-living bedspaces (use class sui generis) and associated amenity facilities, with ground floor commercial units (Use classes A3 (Café / Restaurant and D2 (Gym))

   Under Construction Q2 2025.

d) Plot 10a, First Street 136043/FO/2023 Erection of 13-storey office building (Use Class E) with associated public realm, external roof terraces (floors 11 and 12) and other associated works including external amenity spaces.

   Consent granted, no works currently underway.

e) Plot 11 Block C First Street South 138831/FO/2023 Erection of a ground plus 28-storey building plus plant level, comprising purpose-built student accommodation (PBSA -Sui Generis) and other associated works including public realm, secure cycle parking and servicing arrangements.

   Application submitted – determination imminent.

6.209. The proposed development, in conjunction with the five cumulative schemes listed above, will enable the First st masterplan to be delivered as set out in the Development Framework. There will be beneficial cumulative townscape effects across the built form and building heights; land use; movement and linkages; and the formation of a coherent and connected urban grid. The overall collective cumulative effect on the townscape character will be significant and beneficial.

Cumulative Visual Effects

6.210. The cumulative visual effects have been considered for those cumulative developments that may be visible within the zone of visual influence of the proposed development. These are discussed below in relation to the views and receptors in Appendix 6.3.

View Point	Description of Effect	Cumulative Effect
View 1	The following cumulative developments are potentially in view from this location: 19 One Medlock St. Will appear in the view as a tall building element up to 38 storeys. 17 Plot 10a First St appears to the right of The Proposed Development but at a lower height maintaining a skyline gap between blocks. Generally, a cumulative change to a townscape and skyline with a high rise character.	The cumulative visual effect is noticeable but a small change with the dominant visual change being created through the two closest buildings. The change is in character with the emerging masterplan. Minor- neutral cumulative effect.
View 2	The following cumulative developments are potentially in view from this location: A small group of cumulative developments appears in the view as a very small change alongside The Proposed Development. The cumulative change is negligible.	Negligible cumulative change
View 3	The following cumulative developments are potentially in view from this location: The principle cumulative building in view is 03 First St South Square Gardens with buildings up	Minor level neutral cumulative effect

View Point	Description of Effect	Cumulative Effect
	to 45 storeys. This building (part of a group of buildings) and The proposed development sit either side of the constructed Denison building offering a symmetrically balanced lower rise skyline. Other cumulative buildings appear but either do not break the skyline or else appear as only very minor changes in view.	
View 4	The following cumulative developments are potentially in view from this location: The buildings of First St south appear as tall building elements alongside those already constructed to the right of the view. The most prominent additional change is that of 19 One Medlock St which will block views of tall buildings elements beyond and, alongside The Proposed Development and First St south, will create a new dominant tall building skyline at the edge of the city centre.	Moderate level cumulative change in line with the emerging vision for the First St and adjacent masterplan areas. Medium Neutral cumulative effect.
View 5	The following cumulative developments are potentially in view from this location: The two primary cumulative developments in the view are 18 One City Road office and commercial up to 14 storeys and 19 One Medlock St building up to 38 storeys that flank River St and frame the view blocking any view of The Proposed Development. - no cumulative effect with The Proposed Development.	No cumulative effects
View 6	The following cumulative developments are potentially in view from this location: The Proposed Development is seen to the left of 20 Park Place Great Jackson St a proposed two building development of up to 56 storeys. It will also be seen in the flanking developments to the left of view 05 Great Jackson St Plot F which also rises to over 50 storeys in height. In front of The Proposed Development will appear 19 One Medlock St partially obscuring views. Changes will all be seen in the context of the existing tall buildings skyline which includes buildings on River St and the existing and emerging towers on great Jackson St.	Moderate level cumulative change in line with the emerging vision for the First St and Great Jackson St masterplan areas. Medium Neutral cumulative effect.
View 7	The following cumulative developments are potentially in view from this location: 19 One Medlock Street; 18 One City Rd; 33 Hotspur House (37 storeys); and 03 First St South (Square Gardens). The Proposed Development is obscured in the view by One Medlock St leading to no cumulative effects in the final analysis.	No cumulative effect
View 8	The following cumulative developments are potentially in view from this location: 17 Plot 10a Ultimately is constructed in front of The Proposed Development and once complete it will block views of the building leading to no cumulative effects.	No cumulative effect
View 9	The following cumulative developments are potentially in view from this location: 17 Plot 10a (foreground) and 19 One Medlock St. Plot 10a is emerging in the view and nearly complete, One Medlock St will be visible behind both this and The Proposed Development forming a comparative tall building element. The open vista along Hulme St is affected by the cumulative effects but not removed and the building masses and heights are generally complementary to the emerging urban form and skyline.	Minor level neutral cumulative effect
View 10	The following cumulative developments are potentially in view from this location: 03 First St South and 17 Plot 10a. Both 03 and 17 are visible alongside the Proposed Development in the view but the change is not prominent with only a minor change to the skyline. The overall appearance and quality of the view will not change being an emerging urban skyline associated with the First St masterplan.	Minor-negligible cumulative effect
View 11	The following cumulative developments are potentially in view from this location: 19 One Medlock St; 17 Plot 10a; 20 Park Place (Plot G, Great Jackson Street); and 27 Student	Minor adverse cumulative effect

View Point	Description of Effect	Cumulative Effect
	Castle (55 storey student accommodation). The collective cumulative change will lead to an increase in height to the visible skyline and the removal of the open vista along Hulme St with this terminating on both The proposed Development and One Medlock St. The change is noticeable with a small adverse effect in removing an aspect of the open vista along the grid.	
View 12	The following cumulative developments are potentially in view from this location: 33 Hotspur House (33 storey student accommodation); 19 One Medlock St; 18 One City Rd (14 storey office); 20 Park Place. The cumulative change will be a noticeable change to the skyline with an increase in the visible tall buildings across this. The character of the view will not change but the dominance of tall buildings to the townscape character will increase leading to a small adverse effect.	Minor adverse cumulative effect
View 13	The following cumulative developments are potentially in view from this location: 19 One Medlock St; and 18 One City Road. The change to the view will be dominated by One City Road. The additional change created through The Proposed Development and One Medlock St is a very low cumulative change.	Minor-Negligible cumulative effect.

Mitigation Measures

6.211. There are no secondary or tertiary construction or operational phase mitigation measures proposed in relation to townscape and views in addition to embedded primary mitigation measures.

6.212. Primary mitigation includes modifications to the location or design of the Proposed Development or measures specifically included in the design of the Proposed Development to mitigate a known issue, and are therefore 'embedded' into the proposals and are effectively 'designing out' potential effects.

6.213. The design proposals have been formulated through a lengthy iterative process involving environmental assessment and consultation. This process has allowed site constraints and opportunities to directly influence the evolution of the Proposed Development. As a result, mitigation measures are embedded within the Proposed Development and will be further developed as part of the detailed design of the landscape and surrounding built form.

6.214. A summary of mitigation measures which have been 'designed in' to the proposals in order to reduce or where possible, avoid townscape and visual impacts is provided below, and is described further within the Design and Access Statement that accompanies this application. The embedded mitigation measure is described in brief below.

Construction Phase

6.215. Precise methodology that will be adopted in order to mitigate against potential construction phase impacts. It is anticipated that measures to control construction impacts will be incorporated into a Construction Environmental Management Plan (CEMP), and should include:

- Site compounds to be positioned close to the proposed access points and as remote from existing developed areas as feasible;
- Use of directional lighting used across the site, lighting and working hours agreed as appropriate for the emerging and established neighbourhood;
- Storage of materials located on site to limit visual impacts and disruption where possible;
- High quality site hoarding;

- The implementation of good site management, maintenance and housekeeping to ensure that the surrounding townscape character experiences the minimum of deterioration to the visual amenity.

6.216. Some inevitable effects would still remain during construction works and cannot be mitigated.

6.217. However, in overall terms the residual effects upon townscape resources, townscape character and the visual envelope are not assessed to be substantial and will be short term, temporary and local in nature.

Operational Phase

6.218. Primary mitigation measures 'designed in' to the proposals are outlined below:

- The Proposed Development has been designed through an iterative process of design through discussion with regards to the height and massing of the proposals and a design which has developed to increase the height of The Proposed Development above the stated parameters as a response to the emerging masterplan and developments (particularly to the south and plot 11). The result of this is a building that responds to the large increase in height from First st north through central and into First st south and the southern gateway areas. It creates a stepped approach offering up a responsive profile and a bridge on the skyline between plots 9a, 10a and 10b and Plot 11;
- The urban grain and massing of The Proposed Development is arranged to offer a sensitive, narrow profile towards views and vistas along Hulme St running through to Oxford Road. The visual coherence and way finding form of the street grid is retained and re-enforced by The Proposed Development;
- The proposals will create activity at ground level, and incorporate opportunities to animate the streetscene with tree planting and high quality public realm space;
- When taken in the context of the proposed and emerging buildings together with the transport links, the external space will become a connection to future commercial phases, leisure uses and existing residential areas within the locality.

Residual Effects

Construction Phase

Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (Temporary/Permanent)
Negligible	City Centre townscape character areas TCA7	none	N/A	Negligible Temporary
Minor-Negligible adverse	Central Arc (TCA8)	none	N/A	Minor-Negligible adverse - Temporary
Minor-Negligible adverse	Oxford Road Corridor	none	N/A	Minor-Negligible adverse - Temporary
Minor adverse	First St Masterplan Area	none	N/A	Minor adverse -Temporary
Negligible	Urban Grain	none	N/A	Negligible -Temporary
Negligible	Land Use	none	N/A	Negligible -Temporary
Minor adverse	Building Heights	none	N/A	Minor adverse -Temporary
Negligible	Connections and Open Space	none	N/A	Negligible -Temporary
Minor adverse	Heritage Townscapes Conservation Areas Listed Buildings	none	N/A	Minor adverse -Temporary
Minor/Moderate - Moderate/Major neutral	View 1 Highway and Pedestrian receptors	none	N/A	Minor/Moderate - Moderate/Major neutral Temporary

Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (Temporary/Permanent)
Minor-Moderate neutral	View 2 Highway, Pedestrian, Residential	none	N/A	Minor-Moderate neutral Temporary
Minor-Moderate neutral	View 3 Highway, Pedestrian, Residential	none	N/A	Minor-Moderate neutral Temporary
Minor/Moderate-Moderate/Major neutral	View 4 Highway, Pedestrian, Residential	none	N/A	Minor/Moderate-Moderate/Major neutral Temporary
Minor/Moderate-Moderate/Major neutral	View 5 Highway, Pedestrian, Residential	none	N/A	Minor/Moderate-Moderate/Major neutral Temporary
Minor-Moderate neutral	View 6 Highway, Pedestrian, Residential	none	N/A	Minor-Moderate neutral Temporary
Moderate/Major neutral	View 7 Pedestrian, Recreation	none	N/A	Moderate/Major neutral Temporary
Minor/Moderate-Moderate/Major neutral	View 8 Highway, Pedestrian, Residential	none	N/A	Minor/Moderate-Moderate/Major neutral Temporary
Minor/Moderate-Moderate/Major neutral	View 9 Highway, Pedestrian, Residential	none	N/A	Minor/Moderate-Moderate/Major neutral Temporary
Minor/Moderate-Minor neutral	View 10 Local Centre, Public Highway, Office	none	N/A	Minor/Moderate-Minor neutral Temporary
Minor/Moderate/Major neutral	View 11 Public Highway	none	N/A	Minor/Moderate/Major neutral Temporary
Minor-Moderate adverse	View 12 Residential, Highway, Pedestrians	none	N/A	Minor-Moderate adverse Temporary
Minor-Moderate neutral	View 13 Residential, Highway, Pedestrians	none	N/A	Minor-Moderate neutral Temporary
Minor/Moderate -Minor neutral	View 14 Residential, Highway, Pedestrians	none	N/A	Minor/Moderate-Minor neutral Temporary
Minor/Moderate -Minor neutral	View 15 Highway, Commercial	none	N/A	Minor/Moderate-Minor neutral Temporary
Minor neutral	View 16 Highway	none	N/A	Minor neutral Temporary

Operational Phase

Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (Temporary/Permanent)
Minor beneficial	City Centre townscape character areas TCA7	none	N/A	Minor beneficial
Minor beneficial	Central Arc (TCA8)	none	N/A	Minor beneficial
Minor beneficial	Oxford Road Corridor	none	N/A	Minor beneficial
Minor-Moderate beneficial	First St Masterplan Area	none	N/A	Minor-Moderate beneficial
Minor beneficial	Urban Grain	none	N/A	Minor beneficial
Minor beneficial	Land Use	none	N/A	Minor beneficial
Minor-Moderate adverse with beneficial elements	Building Heights	none	N/A	Minor-Moderate adverse with beneficial elements
Minor beneficial	Connections and Open Space	none	N/A	Minor beneficial
Minor-Moderate neutral	Heritage Townscapes Conservation Areas Listed Buildings	none	N/A	Minor-Moderate neutral
Minor/Moderate - Moderate/Major beneficial	View 1 Highway and Pedestrian receptors	none	N/A	Minor/Moderate - Moderate/Major beneficial
Minor-Moderate neutral	View 2 Highway, Pedestrian, Residential	none	N/A	Minor-Moderate neutral
Minor-Moderate neutral	View 3 Highway, Pedestrian, Residential	none	N/A	Minor-Moderate neutral
Minor/Moderate-Moderate/Major beneficial	View 4 Highway, Pedestrian, Residential	none	N/A	Minor/Moderate-Moderate/Major neutral beneficial
Minor/Moderate-Moderate/Major beneficial	View 5 Highway, Pedestrian, Residential	none	N/A	Minor/Moderate-Moderate/Major beneficial
Minor-Moderate neutral	View 6 Highway, Pedestrian, Residential	none	N/A	Minor-Moderate neutral
Moderate/Major neutral	View 7 Pedestrian, Recreation	none	N/A	Moderate/Major neutral
Minor/Moderate-Moderate/Major beneficial	View 8 Highway, Pedestrian, Residential	none	N/A	Minor/Moderate-Moderate/Major beneficial
Minor/Moderate-Moderate/Major neutral	View 9 Highway, Pedestrian, Residential	none	N/A	Minor/Moderate-Moderate/Major neutral

Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (Temporary/Permanent)
Minor/Moderate-Minor neutral	View 10, Public Highway, Office	none	N/A	Minor/Moderate-Minor neutral
Minor/Moderate/Major neutral	View 11 Public Highway	none	N/A	Minor/Moderate/Major neutral
Minor-Moderate adverse	View 12 Residential, Highway, Pedestrians	none	N/A	Minor-Moderate adverse
Minor-Moderate neutral/beneficial	View 13 Residential, Highway, Pedestrians	none	N/A	Minor-Moderate neutral/beneficial
Minor/Moderate -Minor neutral	View 14 Residential, Highway, Pedestrians	none	N/A	Minor/Moderate-Minor neutral
Minor/Moderate -Minor neutral	View 15 Highway, Commercial	none	N/A	Minor/Moderate-Minor neutral
Minor neutral	View 16 Highway	none	N/A	Minor neutral

Reference List

6.219. This ES Chapter has been prepared in reference to the following:

- Council of Europe (Florence, 2000). The European Landscape Convention.
- Department for Communities and Local Government (2012), National Planning Policy Framework.
- Planning Practice Guidance. The National Planning Policy Framework and relevant planning practice guidance. Available at: https://www.gov.uk/government/collections/planning-practice-guidance.
- Institute of Environmental Management & Assessment (IEMA), 2015. IEMA Environmental Impact Assessment Guide to Shaping Quality Development.
- The Town and Country Planning (Environmental Impact Assessment.) Regulations, 2017.https://www.legislation.gov.uk/uksi/2017/571/contents/made.
- Landscape Institute, IEMA, (2013). Guidelines for Landscape & Visual Impact Assessment, 3rd Edition, Oxon, Routledge.
- Landscape Institute Technical Guidance Note 06/09 (2019). Visual Representation of Development Proposals. Available at: https://www.landscapeinstitute.org/visualisation/.
- Manchester's Core Strategy 2012-2027 https://www.manchester.gov.uk/downloads/download/5672/core_strategy
- First Street Development Framework. https://www.manchester.gov.uk/downloads/download/7213/first_street
- Oxford Road Corridor Strategic Spatial Framework
- https://www.manchester.gov.uk/download/downloads/id/27290/oxford_road_spatial_framework_-_march_2018.pdf

7. Air Quality

Introduction

7.1. This Chapter of the ES has been prepared by Hydrock, now Stantec and assesses air quality impacts of the Proposed Development upon the Site and surrounding area. This Chapter also describes the methods used to assess these impacts, the existing baseline conditions, the proposed mitigation measures required to prevent, reduce or offset any significant negative impacts and the likely residual impacts after these methods have been adopted.

7.2. This Chapter is accompanied by the following appendices:

- Technical Appendix 7.1 – Air Quality Technical Appendix.

7.3. Following consultation with Manchester City Council (MCC) Environmental Health, operational phase impacts did not require detailed assessment and are not considered further within this ES Chapter. An operational phase screening and exposure assessment has been undertaken in line with relevant guidance, which can be found in Technical Appendix 7.1. Therefore, impacts associated with operational phase road traffic emissions are not considered further within this Chapter.

7.4. In addition to the above, combustion source related plant emissions have also been screened out of the Chapter. The proposed energy strategy will utilise air source heat pumps (ASHP) for the domestic hot water, these will be located on the roof. All homes and corridors will utilise electric panel heaters. A variable refrigerant flow (VRF) system with fan coils will supply all amenity areas for heating and cooling. Mechanical Ventilation and Heat Recovery (MVHR) systems will supply all areas of the building, apart from bike stores, bin stores etc, which will be extract only. Therefore, impacts associated with operational phase combustion emissions are not considered further within this Chapter.

7.5. The authors of this Chapter are Lauren Massingham and Phoebe Honan.

7.6. Lauren is an Associate Air Quality Consultant at Hydrock, now Stantec. She has a total of 10 years' experience in the Air Quality field. Her roles include the production and project management of a variety of Air Quality Assessments in support of planning applications for a range of projects throughout the UK. She has detailed knowledge of the planning process, the Local Air Quality Management (LAQM) process, EIA co-ordination and has undertaken various dispersion modelling studies.

7.7. Phoebe is a Principal Air Quality Consultant at Hydrock, now Stantec. She has a total of 8 years' experience in the Air Quality field. She has prepared numerous Air Quality Assessments to support planning applications, including EIA Developments, for a wide variety of projects including several PBSAs.

Assumptions and Limitations

7.8. Reference should be made to Section 3.10 of Technical Appendix 7.1.

7.9. In undertaking this air quality assessment, the following assumptions and limitations are noted:

- The Construction Phase Assessment has been undertaken using information provided by the client. Where information was not available, worst case robust assumptions have been made in line with Institute of Air Quality (IAQM) guidance [1].
- There are inherent uncertainties associated with the model (ADMS-Urban) used in this assessment, including the uncertainties associated with the input data such as predicted traffic flows.
- To account for uncertainty in future emission factors and pollutant concentrations, a precautionary principle has been undertaken in the assessment, whereby emission factors, background concentrations and traffic flows have all been held at 2022.

Relevant Legislation Policy and Guidance

Legislation

Air Quality, Policy and Guidance

7.10. There are two sets of air quality legislation which include ambient air quality thresholds for the protection of public health that apply in England, these include legally binding limit values originally set by the European Union (EU) Directive 2008/50/EC [2] on ambient air quality and cleaner air for Europe; and regulations implementing national air quality objectives as set out in the revised 2023 Air Quality Strategy for England (AQS) [3] which local authorities are required to work towards achieving. In Northern Ireland and Scotland, the AQS (Volume 1) [4] remains in force.

7.11. The EU (Withdrawal Agreement) Act 2020 sets out arrangement for implementing air quality limit values that are included in the EU Directive on ambient air quality and cleaner air for Europe (2008/50/EC) included in the following:

- Air Quality Regulations (SI 2010 No.1001) and amended (SI 2016 No.1184) [5];
- The Air Quality (Amendment of Domestic Regulations) (EU Exit) Regulations 2019 (SI 2019 74) [6];
- The Environment (Miscellaneous Amendments) (EU Exit) Regulations 2020 (SI 2020 1313) [7] amend the Air Quality Regulations (SI 2010 No.1001) to account for EU withdrawal; and
- The AQS objectives are implemented in the Air Quality (England) Regulations 2000 (SI 2000/928) [8] and Air Quality (England) (Amendment) Regulations 2002 (SI 2002/3043) [9].

7.12. The 2023 AQS sets out the government's policies and framework for improving air quality in England with the aim of meeting the requirements of above legislation. The Air Quality Strategy also outlines the Limit Values, Target Values, Standards, Objectives, Critical Levels and Exposure Reduction Targets for the protection of human health and the environment (collectively termed Air Quality Assessment Levels (AQALs) throughout this report). The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023 [10] also brought forward a new target level for PM2.5. Those relevant to this assessment is provided below, in Table 7.1.

Table 7.1: National AQALs

Pollutant	Averaging Period	AQALs	
NO_2	1 Hour Mean	200µg/m^3	Not to be exceeded more than 18 times in a year.
	Annual Mean	40µg/m^3	
PM_{10}	24 Hour Mean	50µg/m^3	Not to be exceeded more than 35 times in a year.
	Annual Mean	40µg/m^3	
$PM_{2.5}$	Annual Mean	20µg/m^3	
	Annual Mean Concentration Target (AMCT)	10µg/m^3	To be met across England by 2040
		Population Exposure Reduction Target ('exposure target')	35% reduction in population exposure by 2040 (compared to a base year of 2018).

7.13. It should be noted that, based on latest guidance from the Defra policy team, the $PM_{2.5}$ AMCT of 10µg/m^3 is not currently applicable at sensitive receptors, and is not yet integrated into the planning system. Therefore, this assessment compares against the AQAL of 20µg/m^3 for $PM^{2.5}$.

7.14. Defra's Local Air Quality Management Technical Guidance 2022 (LAQM.TG(22)) [11] provides guidance on where the above AQAL's should apply. These are detailed in Technical Appendix 1.1. For the purposes of this Chapter, the long term AQALs apply to the proposed residential use. The annual mean and short-term AQALs apply at high-sensitivity receptors in the wider study area.

Policy

National Planning Policy

7.15. The National Planning Policy Framework (2024)[12] sets out the Government's planning policy for England. It requires planning decisions for any new development to prevent new and existing development from contributing to, or being put at risk from, unacceptable levels of air pollution (paragraph 187). It also states that planning decisions should sustain and contribute towards compliance with relevant limit values or national objectives for air pollutants, taking into account the presence of AQMAs and Clean Air Zones (CAZ)s and the cumulative impacts from other sites (paragraph 199).

7.16. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. Furthermore, planning decisions should ensure that any new development in AQMAs and CAZs is consistent with the local air quality action plan.

7.17. Also, to help reduce congestion and emissions, to improve air quality and public health, significant development should be focused on locations which are / can be made sustainable through limiting the need to travel (paragraph 110).

Planning Practice Guidance

7.18. Reference ID 32 (Air Quality) of the National Planning Practice Guidance (NPPG) [13], which was updated in November 2019, provides guiding principles on how planning can take account of the impact of new development on air quality. The NPPG summarises the importance of air quality in planning and the key legislation relating to it.

Local Planning Policy

7.19. The Manchester Local Plan guides development within Manchester. The Core Strategy [14] was adopted on 11th July 2012 and is the key document in the Manchester Local Plan. It sets out the long-term strategic policies for future development in Manchester. Within the Core Strategy Policy EN16 relates to air quality as follows:

"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"

7.20. The Core Strategy goes further in stating that:

"Whilst this policy seeks to improve air quality within Manchester's AQMA it also applies across the District in order to assist air quality across Manchester remaining at acceptable levels. It should be noted that other policies within the Core Strategy will guide the location of development in order to reduce the need for private transport and encourage the use of decentralised and renewable energy and green infrastructure to reduce both emissions and their impact still further."

7.21. Policy DM 1 'Development Management' also includes a reference to air quality, stating that:

"all development should have regard to effects on amenity, including air quality".

7.22. The GMCA adopted their Places for Everyone Plan [15] on 21st March 2024. Places for Everyone is a long-term plan of nine Greater Manchester districts for jobs, new homes, and sustainable growth up to 2039. The following policy relates to air quality:

"Policy JP-S5

Clean Air

A comprehensive range of measures will be taken to support improvements in air quality, focusing particularly on locations where people live, where children learn and play, where there are impacts on the green infrastructure network and where air quality targets are not being met, including:

1. Locating and designing development, and focusing transport investment, so as to reduce reliance on forms of transport that generate air pollution;

2. Determining planning applications in accordance with the most recent development and planning control guidance published jointly by the Institute of Air Quality Management (IAQM) and Environmental Protection UK (EPUK), and the most recent IAQM Guidance on the Assessment of Dust from Demolition and Construction, or relevant successor guidance, including the requirement for developers to submit construction management plans as appropriate;

3. Requiring applications for developments that could have an adverse impact on air quality to submit relevant air pollution data so that adverse impacts on air quality can be fully assessed and development only permitted where they are acceptable and/or suitable mitigation can be provided;

4. Restricting and carefully regulating developments that would generate significant point source pollution such as some types of industrial activity and energy generation;

5. Significantly expanding the network of electric vehicle charging points, both for public and private use, including as part of new developments;

6. Implementing the Clean Air Plan and associated measures;

7. Facilitating the more sustainable distribution of goods within the urban area, including through accommodating urban consolidation centres and urban distribution centres that use ultra-low-emission vehicles, and local delivery facilities to reduce repeat delivery attempts;

8. Designing streets to avoid trapping air pollution at ground level, including through the appropriate location and scale of buildings and trees;

9. Controlling traffic and parking within and around schools, early years sites and other locations that are particularly sensitive to air quality;

10. Promoting actions that help remove pollutants from the air, such as enhancing the green infrastructure network and using innovative building materials that capture air pollutants; and

11. Development should be located in areas that maximise the use of sustainable travel modes and be designed to minimise exposure to high levels of air pollution, particularly for vulnerable users."

Guidance

7.23. The following guidance has been used to undertake this air quality Chapter:

- Defra's LAQM.TG(22)[11];
- Environmental Protection UK (EPUK) & IAQM Land-use Planning & Development Control: Planning for Air Quality [16]; and,
- The IAQM's guidance on assessing impacts from construction [1]; and
- MCC's Air Quality & Planning Technical Guidance [17].

Assessment Methodology and Significance Criteria

Scenarios Tested

7.24. The following scenarios have been considered as part of the air quality Chapter.

- Scenario 1: Existing Baseline;

- Scenario 2: Existing Baseline with Proposed Development; and
- Scenario 3: Existing Baseline with cumulative developments and Proposed Development.

7.25. The transport consultants for the Proposed Development, have provided trips generated by the Proposed Development. Proposed trips are below the relevant threshold (Technical Appendix 7.1, Table 3) and detailed modelling is not required to determine potential air quality impacts. As such, the scenarios above have not been considered further, because the operational phase of the assessment is not required to be assessed. Reference should be made to Technical Appendix 7.1 for the operational phase screening and exposure assessment.

The Study Area

7.26. Various factors have determined the spatial extent of the air quality study area, as outlined below:

- In line with IAQM guidance [1], for the demolition and construction stage, a 250m buffer has been defined around the application site in addition to a construction vehicle trackout route up to 250m from the site entrance with a 50m buffer has been used.

7.27. Reference should be made to Technical Appendix 7.1 (Figure 2 and Figure 8) for the construction phase and operational phase study areas.

Source of Effect

Construction Phase

7.28. The construction phase assessment of the Proposed Development has been assessed using the methodology described in the latest guidance by IAQM [1].

7.29. Activities on construction sites with the potential to generate dust and emissions can be categorised into four types of activities:

- Demolition – any activities associated with the removal of existing structures on site;
- Earthworks – includes the processes of soil-stripping, ground-levelling, excavation and landscaping;
- Construction – any activities relating to the provision of new structures on site; and
- Trackout – the transport of dust and dirt from the construction site onto the public road network where it may be deposited and re-suspended by traffic using the network.

7.30. The potential impacts are:

- Annoyance due to dust soiling at existing human receptors;
- The risk of health effects due to a significant increase in PM_{10} exposure at existing human receptors; and
- Harm to ecological receptors (there are no ecological designations within the development locale and therefore ecological impacts are not required for this assessment).

7.31. There are five steps in the assessment process described in the IAQM guidance, summarised in in the following paragraphs.

Step 1: Need for Assessment:

- The first step is the initial screening of the need for a detailed assessment. According to the IAQM guidance, an assessment is required where there are sensitive receptors within the study area (as defined in Table 8.4).

Step 2: Assess the Risk of Dust Impacts:

- This step is split into three sections as follows:
  - 2A. Define the potential dust emission magnitude;
  - 2B. Define the sensitivity of the area; and
  - 2C. Define the risk of impacts.

- Each of the dust-generating activities is given a dust emission magnitude depending on the scale and nature of the works (step 2A) based on the criteria presented in Table 7.3.
- The sensitivity of the surrounding area is then determined (step 2B) for the dust-generating activities, based on the proximity and number of receptors, their sensitivity to dust, the local PM_{10} background concentrations and any other site-specific factors. The criteria for defining the sensitivity of the area to different dust effects are shown in Table 7.2.
- The overall risk of the impacts for each activity is then determined (step 2C) prior to the application of any mitigation measures and an overall risk for the site derived.

Step 3: Determine the Site Specific Mitigation:

- Once each of the activities is assigned a risk rating, appropriate mitigation measures are identified. Where the risk is negligible, no mitigation measures beyond those required by legislation are necessary.

Step 4 Determine any Significant Residual Effects:

- Once the risk of dust impacts has been determined and the appropriate dust mitigation measures identified, the final step is to determine whether there are any residual significant effects. The IAQM guidance notes that it is anticipated that with the implementation of effective site-specific mitigation measures, the environmental effect will not be significant in most cases.

Significance Criteria

7.32. There are different scales of receptor sensitivity applicable to the air quality assessment, depending on the receptor type and stage of the proposed development. However, indicative examples of receptors and their sensitivity are provided in Table 7.2.

Table 7.2 Scale of Sensitivities

Receptor Sensitivity	Receptors sensitive to dust soiling	Human Health Receptors	Ecological Receptors
High	Receptors where users can reasonably expect enjoyment of a high level of amenity or the appearance, aesthetics or value of their property would be diminished by soiling such as: Residential buildings, schools and education premises, hospitals, clinics and care homes; Museums and other culturally important collections; Some commercial operations e.g., car showrooms, electronics manufacturing and horticultural operations, long term car parks; and International, European, or nationally designated nature conservation sites which have designated features sensitive to dust deposition	All locations where members of the public might be regularly exposed. Building façades of residential properties, schools, hospitals, care homes.	European Designated sites with features sensitive to changes in air pollution (e.g., RAMSAR, SAC)
Medium	Locations where users would expect to enjoy a reasonable level of amenity, but would not reasonably	Places of work, hotels, gardens of residential properties, pavements of	Nationally Designated sites, (e.g., SSSI, National Nature

Receptor Sensitivity	Receptors sensitive to dust soiling	Human Health Receptors	Ecological Receptors
	expect to enjoy the same level of amenity as in their home; or The appearance, aesthetics or value of their property could be diminished by soiling; or The people or property wouldn't reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land. Indicative examples include parks and places of work.	busy shopping streets, parks, open-air bus stations.	Reserves) with features sensitive to changes in air pollution
Low	Locations where the enjoyment of amenity would not reasonably be expected; or Property would not reasonably be expected to be diminished in appearance, aesthetics or value by soiling; or There is transient exposure, where the people or property would reasonably be expected to be present only for limited periods of time as part of the normal pattern of use of the land. Indicative examples include playing fields, farmland (unless commercially-sensitive horticultural), footpaths, short term car parks and roads.	Locations of short-term exposure	Locally Designated Sites (e.g., Local Nature Reserves, Local Wildlife Sites, Ancient Woodland) with features sensitive to changes in air pollution

Construction Phase (Area Sensitivity)

7.33. Table 7.3 and Table 7.4 below show the scale of sensitivity applied in each stage of the construction phase dust assessment. This determines the sensitivity if the area to adverse impacts.

Table 7.3 – Scale of sensitivity used in the construction phase assessment – Nuisance Dust

Receptor Sensitivity	Number ofReceptors	Distance from Source (m)			
		<20	<50	<100	<250
High	>100	High	High	Medium	Low
High	10 – 100	High	Medium	Low	Low
High	1 – 10	Medium	Low	Low	Low
Medium	<1	Medium	Low	Low	Low
Low	<1	Low	Low	Low	Low

Table 7.4 - Scale of sensitivity used in the construction phase assessment – Human Health

Receptor Sensitivity	Annual Mean PM_{10} Concentrations ($\mu g/m^3$)	Number of Receptors	Distance from Source (m)			
			<20	<50	<100	<250
High	32	>100	High	High	High	Medium
		10-100	High	High	Medium	Low
		1-10	High	Medium	Low	Low
High	28 – 32	>100	High	High	Medium	Low
		10-100	High	Medium	Low	Low
		1-10	High	Medium	Low	Low
High	24 – 28	>100	High	Medium	Low	Low
		10-100	High	Medium	Low	Low
		1-10	Medium	Low	Low	Low
High	<24	>100	Medium	Low	Low	Low
		10-100	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
Medium	>32	>10	High	Medium	Low	Low
		1-10	Medium	Low	Low	Low
Medium	28 – 32	>10	Medium	Low	Low	Low
		1-10	Low	Low	Low	Low
Medium	24 – 28	>10	Low	Low	Low	Low

Receptor Sensitivity	Annual Mean PM_{10} Concentrations ($\mu g/m^3$)	Number of Receptors	Distance from Source (m)			
			<20	<50	<100	<250
		1-10	Low	Low	Low	Low
Medium	<24	>10	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
Low	-	>1	Low	Low	Low	Low

7.34. Within distances of 20m of the Site boundary there is a high risk of dust impacts. Up to 100m from the construction site, there may still be a high risk, particularly if the receptor is downwind of the prevailing wind direction in relation to the dust source. Table 7.3 and Table 7.4 detail the determination of receptor sensitivity.

7.35. It is considered that for receptors more than 250m from the Site boundary, the risk is negligible. Figure 7.1 and Technical Appendix 7.1 (Figure 8) shows the sensitive human receptors identified within 250m of the Site. No designated ecological sites were identified within the construction stage study area, as defined by IAQM guidance [1].

Magnitude of Impact Criteria

Demolition and Construction Phase Dust Emission Magnitude

7.36. The potential dust emission magnitude for each of the four activities (demolition, earthworks, construction and trackout) outlined above is determined on the scale and magnitude of the works and are classified as small, medium or large depending on the criteria outlined in **Table 7.5**.

Table 7.5 – Scale of Impact Magnitude

Activity	Potential Dust Emission Magnitude		
	Small	Medium	Large
Demolition	Total building volume <12,000m^3, construction material with a low potential for dust release, demolition activities <6m above ground, demolition during wetter months	Total building volume 12,000m^3 – 75,000m^3, potentially dusty construction material, demolition activities 6 - 12m above ground level	Total building volume >75,000m^3, potentially dusty construction material, on-site crushing and screening, demolition activities >12m above ground level
Earthworks	Total site area <18,000m^2, soil type with large grain size, <5 heavy earth moving vehicles active at any one time, formation of bunds <3m in height	Total site area 18,000m^2 – 110,000m^2, potentially dusty soil type >10 heavy earth moving vehicles, moving vehicles, formation of bunds 3m - 6m in height	Total site area >110,000m^2, moderately dusty soil type, 5-10 heavy earth moving vehicles, formation of bunds >6m,
Construction	Total building volume 12,000m^3, construction material with low potential for dust release	Total building volume 12,000m^3 – 75,000m^3, on site concrete batching	Total building volume >750,000m^3, on site concrete batching, sandblasting;
Trackout	<20 HDV (>3.5t) outward movements in any one day,	20-50 HDV (>3.5t) outward movements in any one day,	>50 HDV (>3.5t) outward movements in any one day,

	surface material with low potential for dust release, unpaved road length <50m	moderately dusty surface material, unpaved road length 50m – 100m	potentially dusty surface material, unpaved road length >100 m

Scale of Effect Criteria

Construction Phase

7.37. The risks of impacts and the significance of each stage of the demolition and construction stage is classified as Negligible, Low, Medium or High Risk, determined against the matrices shown below**Error! Reference source not found.**, which combine the potential dust emission magnitude of each stage with the sensitivity of the area.

7.38. The overall risk of impacts during the construction assessment represents the highest risk category for each stage. This risk level is then used to determine mitigation requirements.

7.39. It should be noted that IAQM guidance [1] recommends that significance is only assigned to the effect **after** considering the construction activity with mitigation. Accordingly, significance is not determined against the risk of impacts. In most instances, mitigation will bring the risk of impacts to Negligible, which is not significant.

Table 7.6 – Risk of Impact

Sensitivity of the Area	Dust Emission Magnitude		
	Large	Medium	Small
Demolition			
High	High Risk	Medium Risk	Medium Risk
Medium	High Risk	Medium Risk	Low Risk
Low	Medium Risk	Low Risk	Negligible
Earthworks			
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible
Construction			
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible
Trackout			
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

Baseline Conditions

7.40. Baseline air quality conditions in the study area have been established through compilation and review of appropriately sourced monitoring and modelling data. Scenario 1 has been used as the Existing Baseline and it depicts the Site as is today.

7.41. The following sources have been utilised:

- Data from the National Atmospheric Emissions Inventory (NAEI) [18], Environment Agency (EA) [19] and Defra's Pollutant Release and Transfer Register (PRTR) data [20];
- Defra's modelled background concentrations of AQS pollutants (UK-AIR) [21]. These estimates are produced using detailed modelling tools and are available as concentrations at central 1km2 National Grid square locations across the UK. Mapped background concentrations have been obtained based upon the 2018 base year Defra update (August 2020 publication);
- Defra's predicted roadside concentrations of NO2 produced from their pollution climate mapping (PCM) [22] model;
- Multi Agency Geographic Information for the Countryside (MAGIC) [23], which incorporates Natural England's interactive maps and;
- MCC's latest available air quality monitoring data, derived from the latest available air quality annual status report published in 2023 [24] and the Clean Air Manchester Datahub [25].

Local Air Quality Management

7.42. The Greater Manchester AQMA has been declared by the GMCA of which MCC is one of the included Local Authorities. The Greater Manchester AQMA has been declared for exceedances of the annual mean NO2 AQAL and covers "An Area covering the 10 districts of Greater Manchester, including arterial routes, district centres, and airport." The Proposed Development is located within the AQMA.

7.43. The GMCA have an AQAP [26] to help reduce pollutants within this designated area. Actions include, promoting sustainable transport including buses, cycling and increased Electric Vehicle charging provision. In additional to providing resources to help raise awareness and educate.

Clean Air Zone

7.44. The Proposed Development is located within the proposed Greater Manchester CAZ which is currently 'in review'. The Greater Manchester Air Quality Administration Committee are currently deciding whether to approve the Mayor of Greater Manchester proposals for an investment-led Clean Air Plan.

7.45. In relation to the GM Air Quality Plan, there are 'at-risk' and 'over the legal limit' road links in the vicinity of the Site including Mancunian Way to the south [27].

Local Emission Sources

7.46. The main source of air pollution in the surrounding Site locale is considered to be emissions from vehicles using the local road network, predominantly Medlock Street to the west and Mancunian Way to the south.

7.47. There are no railway lines within close proximity to the Site. The closest line is the Manchester Piccadilly to Manchester Deansgate line is listed in Defra's table of 'Rail Lines with a Heavy Traffic of Diesel Passenger Trains'. However, the closest point of the track to the Site is approximately 230m north, which is well beyond the 30m screening distance. In addition, lines closer to the track are understood to be associated with the Manchester Metrolink, which is electrified. Therefore, railway emissions are not considered to be a significant source of local pollution and do not require further assessment.

7.48. A review of the NAEI [18], EA [19] and Defra's PRTR [20] data indicates 1 industrial point source within 500m of the Site. Table 5 and Figure 5 within Technical Appendix 7.1 detail the location of the point source relative to the Site.

7.49. It is understood that the facility, associated with Manchester metropolitan University, has the necessary Environmental Permits for potentially polluting activities (emissions to Air) which include provisions to reduce emissions to air. It has been reasonably assumed that emissions from the facilities contribute to background concentrations, as detailed below. Therefore, the contribution from these sources will be taken into account within the background concentrations presented below.

UK-AIR Background Concentration

7.50. Background pollutant concentrations for 2022 (the base year) and 2024 (the assessment year) and 2028

(the proposed opening year) are displayed in Table 7.7 below.

Table 7.7: Mapped Background Concentrations

Grid Square (x,y)	Pollutant	AQAL (µg/m^3)	Annual Mean Concentration (µg/m^3)		
			2022	2024	2028
383500, 397500	NO_2	40	22.8	21.3	19.1
	PM_{10}	40	12.9	12.7	12.5
	$PM_{2.5}$	20	8.3	7.1	8.0

7.51. The data show that annual mean background concentrations of NO2, PM10 and PM2.5 at the grid squares within which the Site is located are below the AQALs in all years.

7.52. Concentrations of all pollutants are predicted to decline incrementally each year. These reductions are principally due to the forecast effect of the roll out of cleaner vehicles and strategies to reduce emissions across all sectors.

Pollution Climate Mapping

7.53. Defra's PCM model provides estimates of roadside concentrations of annual mean NO2, which are used in reporting compliance with limit values. The model provides projected roadside concentrations of pollutants, for the years 2018-2030 inclusive, based on a 2018 base year.

7.54. All main road links, surrounding the Site have been included as PCM model links as illustrated in Figure 6 of Technical Appendix 7.1. The 2022 roadside annual mean NO2 concentrations are projected to be between 25.6µg/m3 and 37.5µg/m3 and therefore comply with annual mean AQAL. However, concentrations along Mancunian Way are within 10% of the AQAL. Roadside concentrations are predicted to decline incrementally year on year.

Air Quality Monitoring Data

7.55. MCC monitor air quality at key locations across the City through a network of automatic (continuous) and non-automatic sites (passive diffusion tubes). The latest Annual Status Report [24] states that the monitoring network within Manchester consisted of 4 automatic monitors and 40 passive sites.

Automatic Monitoring

7.56. Two of MCC's automatic monitoring stations are considered representative of the Proposed Development.

7.57. Recent results from the automatic monitors MAN1 (x384233, y397287) and MAN3 (x384310, y398337) are shown in Table 1.3 and the location of MAN1 is shown on Figure 7 of Technical Appendix 7.1.

Table 7.8 – Automatic Monitoring Results

Monitor	Pollutant	AQAL (µg/m^3)		Concentration (µg/m3)					
				2018	2019	2020	2021	2022	2023
MAN1 Manchester Oxford Road (Kerbside)	NO_2	Annual Mean	40	62	59	36	44	43	45.7
		1-hour Mean	200 (A)	2	1	0	0	3	0
	PM_{10}	Annual Mean	40	30	26	18	18	18	16.4
		24-Hour Mean	50 (B)	15	18	5	2	8	4
MAN3 Manchester Piccadilly (Urban	NO_2	Annual Mean	40	35	36	27	30	29	26.8
		1-hour Mean	200 (A)	0	0	0	0	0	0
	PM_{10}	Annual Mean	40	21	20	15	15	17	15.1

Centre/Background)		24-Hour Mean	50 (B)	2	7	1	2	4	1
	$PM_{2.5}$	Annual Mean	20	11	12	8	9	10	8.5
Notes: (A) 200µg/m³ not to be exceeded more than 18 times/year (B) 50µg/m³ not to be exceeded more than 35 times/year									

7.58. The data in the table above shows there have been exceedances of the NO_2 annual mean AQAL at automatic monitor MAN1, located on Manchester Oxford Road. Exceedances have occurred each year, with the exception of 2020, likely due to the COVID-19 pandemic. The highest recorded concentration of NO_2 was 62µg/m³ in 2018. However, the monitor is located at a 'kerbside' location along one of the busiest roads in Manchester and therefore concentrations are expected to be higher.

7.59. There have been no exceedances of the NO_2 annual mean AQAL at automatic monitor MAN3, located at an 'urban centre' location. However, concentrations are higher than the UK-AIR urban background concentrations, which suggests some influence of road traffic at this location.

7.60. There was one recorded exceedance of an annual mean greater than 60µg/m³ at MAN1, which indicates that an exceedance of the 1-hour mean objective is potentially likely. However, there is a general downward trend in concentrations between 2028 – 2023 and no other exceedances of 60µg/m3 have been measured.

7.61. There are no exceedances of the annual mean PM_{10} or $PM_{2.5}$ AQAL. Since 2020 concentrations monitored have been fairly consistent.

7.62. 2020 and 2021 data should be treated with caution due to the impacts of the COVID-19 pandemic and 'lockdowns' on local traffic flows.

Passive Monitoring

7.63. Monitoring locations within 1km of the Site are shown in Figure 7 within Technical Appendix 7.1 and the data presented in Table 8.9.

7.64. Additional monitoring is being undertaken as part of the Clean Air Plan (CAP). Recent monitoring data for locations closest to the Site (within <1km) are presented in the table below.

7.65. All tubes are classified as 'roadside' apart from MA77NO which is classified as 'urban background'.

Table 7.9 – Passive Monitoring Results

Site ID	X (m)	Y (m)	Distance from Site (km)	Annual Mean NO_2 Concentration (µg/m³)					
				2018	2019	2020	2021	2022	2023
LAQM									
MA77NO – Hewitt Street	383576	397489	0.29 N	41.0	43.7	26.9	30.8	33.1	31.6
MA29ANO – Oxford Street	384119	397503	0.44 NE	58.8	55.4	39.0	44.8	49.8	49.6
MA82,83,84NO – Oxford Road (average)	384239	397276	0.48 E	52.8	51.3	33.9	40.7	42.6	41.4
CAP									
CAP_MANC_042 – Mancunian Way	383637	397097	0.13 S	41.3	40.1	34.0	39.2	38.8	36.7
CAP_MANC_155 - A5103	383603	397442	0.23 N	-	-	-	-	33.5	-

Site ID	X (m)	Y (m)	Distance from Site (km)	Annual Mean NO_2 Concentration (µg/m^3)					
				2018	2019	2020	2021	2022	2023
Medlock St									
CAP_MANC_156 - A5103 Medlock St	383627	397472	0.25 N	-	-	-	-	35.7	-
CAP_MANC_045 – Mancunian Way	383357	397166	0.35 SW	70.5	64.1	50.0	56.4	64.7 (A)	50.4
CAP_MANC_041 – Mancunian Way	383370	397133	0.35 SW	49.6	45.3	36.2	41.1	40.4	39.3
CAP_MANC_073 – Lingfield Terrace	383737	397617	0.36 N	-	43.6	25.8	29.3	34.8	32.9
CAP_MANC_044 – Mancunian Way	383273	397147	0.43 SW	62.8	-	43.7	52.2	33.6 (A)	-
CAP_MANC_183 – Wakefield Street	384140	397465	0.44 NE	-	-	-	-	54.4	54.1
CAP_MANC_185 – Wakefield Street	384119	397499	0.44 NE	-	-	-	-	49.7 (A)	48.5
CAP_MANC_186 – Wakefield Street	384124	397533	0.46 NE	-	-	-	-	42.4	43.0
CAP_MANC_184 – Wakefield Street	384157	397474	0.46 NE	-	-	-	-	41.1	39.5
CAP_MANC_019 – A34 (Oxford Road)	384234	397287	0.48 E	-	-	-	-	44.4	41.3
CAP_MANC_152 – Great Bridgewater Street	383499	397678	0.49 N	-	-	-	-	39.4	32.5
CAP_MANC_074 – Oakleigh Avenue	383508	397687	0.49 N		49.4	27.1	32.3	40.0	31.3
CAP_MANC_043 – Mancunian Way	383855	397070	0.81 S	48.0	43.8	31.2	33.2	35.7	-
Notes: Exceedances of the annual mean AQAL are shown in BOLD. All results taken from the 2023 ASR and Clean Air Data Hub, including level of accuracy and number of decimal									

Site ID	X (m)	Y (m)	Distance from Site (km)	Annual Mean NO_2 Concentration (µg/m^3)					
				2018	2019	2020	2021	2022	2023
places									

7.66. Location CAP_MANC_155 and 156 are considered most representative of the Site due to their location along Medlock Street. Both sites only monitored during 2022 and concentrations are below the annual mean AQAL.

7.67. MAN77NO is also considered comparable to the Site and classified as 'urban background'. Pre-pandemic concentrations show exceedances of the relevant annual mean AQAL at this location. However, results have declined since 2019. MAN77NO is located within 45m of the A5013 and within close proximity to the railway line between Manchester Piccadilly and Manchester Deansgate. This section of railway is listed within LAQM.TG(22) as a 'Rail Lines with a Heavy Traffic of Diesel Passenger Trains'. As such, it is considered that NO2 concentrations could be influenced by this section of railway.

7.68. Location CAP_MANC_042 is the closest location to the Site but located adjacent to the A57(M), Mancunian Way. Pre-pandemic results show exceedances of the annual mean AQAL and 2022 and 2023 concentrations are within 10% of the AQAL.

7.69. The data in **Error! Reference source not found.** shows there have been exceedances of the NO2 annual m ean AQAL at monitoring sites close to the Site during all recent years (even during 2020 at locations along the A57(M)). The highest recorded concentration of NO2 was 70.5µg/m3 at CAP_MANC_045 in 2018. This location is along Mancunian Way, within the AQMA and on one of the busiest A-roads in Manchester, therefore exceedances are to be expected. Aside from this location, during 2018 and 2019, there were no recorded exceedances of an annual mean greater than 60µg/m^3, which indicates that an exceedance of the 1-hour mean objective is unlikely at these sites.

7.70. 2020 and 2021 concentrations should be treated with caution as they would have been impacted by the COVID-19 pandemic and the associated decrease in traffic levels during lockdown periods in the UK.

Committed Developments

7.71. With regards to the construction phase, the committed developments detailed within Technical Appendix 7.1 (Appendix F) are all located within 250m of the Proposed Development and share receptors with Site's that are within 250m of the Site and cumulative schemes.

7.72. The IAQM guidance [1] states that from experience of assessing exhaust emissions from site traffic, it is unlikely that any significant adverse impacts on local air quality would be caused and in the vast majority of cases, quantitative assessment is not needed. Construction traffic data is not currently available and as such, short term effects of construction traffic emissions have not been assessed.

Identification and Evaluation of Likely Significant Effects

Construction Phase

Potential Dust Emission Magnitude

7.73. The potential dust emission magnitude for demolition, earthworks, construction and trackout activities is summarised in Table 7.10. Further details are provided in Technical Appendix 7.1.

Table 7.10: Potential Dust Emission Magnitude

Activity	Dust Emission Magnitude	Justification
Demolition	n/a	Any existing buildings on Site have already been demolished. As such, demolition has not been considered further within this assessment.
Earthworks	Small	The total area of the Site (including all areas inside the red-line boundary) is <18,000m2 and therefore within the 'small' IAQM category. It is noted that no earthworks will be undertaken within the construction compound. This area is for storage only. The

		underlying soil texture is loamy and clayey soils which have medium potential for dust release.
Construction	Large	The construction phase is estimated to start November 2025 with the Proposed Development becoming operational in September 2028. The proposals comprise the erection a single block, with a maximum of 33 floors. Therefore, an estimation of the total volume of buildings to be constructed was considered to be >75,000m^3. It is not envisaged that concrete batching and sandblasting would be undertaken onsite.
Trackout	Small	It is expected that there would be <20 HDVs outwards movements from the Site each day. No unpaved surfaces over 50m would be utilised as site traffic would be routed along the existing road network. It should be noted that the construction compound for the development is located 100m north east of the Proposed Development. Trips are likely to be frequent between these two locations.

Area Sensitivity to Dust Impacts

7.74. The Manchester Airport wind rose (Technical Appendix 7.1 (Appendix B)) shows that the prevailing winds are from the south. As such, receptors downwind (i.e., north) of the Site are more at risk of exposure to dust impacts during construction.

7.75. Figure 7.1 and Technical Appendix 8,1 (Figure 8) shows the IAQM buffer zones around the Site, as well as the location of sensitive receptors identified within 250m of the Site boundary. It also shows that greater than 100 high sensitivity receptors are located within 20m of the Site boundary, associated with Plot 9a First Street which is due for completion in 2024 (MCC planning ref: 132600/FO/2021). On this basis, the overall sensitivity of the surrounding area to nuisance dust soiling effects is defined as 'High' for earthworks and construction.

7.76. With regard to Trackout, the sensitivity for Large size sites is assessed where receptors are located within 50m from Trackout routes up to 500m from the Site. As there are more than100 high-sensitivity receptors within 20m of potential Trackout routes from the Site, the sensitivity to dust soiling impacts from Trackout is defined as 'High'.

7.77. Defra mapped background predictions (Table 8.7) show that annual mean concentrations of PM_{10} are not likely to exceed 24µg/m^3 in the vicinity of the Site based on 2022 estimates. However, 2019 monitored concentrations at the MAN1 automatic monitor were 26µg/m^3 and LAQM.TG(22) does states that concentrations should take into account local sources. As a conservative approach it has been assumed that there is potential for the annual mean PM_{10} concentrations to be greater than 24µg/m^3. According to IAQM guidance, where PM_{10} concentrations are 24-28µg/m^3 and there are more than 100 high sensitivity receptors within 20m of construction works, the overall sensitivity of the surrounding area to human health impacts is defined as 'High' for Earthworks, Construction and Trackout.

7.78. A summary of the area sensitivity is presented below in Table 7.11.

Table 7.11: Sensitivity of the Local Area

7.79.	Potential Impact	7.80.	Sensitivity of Surrounding Area				
		7.81.	Earthworks	7.82.	Construction	7.83.	Trackout
7.84.	Dust Soiling	7.85.	High	7.86.	High	7.87.	High
7.88.	Human Health	7.89.	High	7.90.	High	7.91.	High

Risk of Impacts

7.92. Using the methodology prescribed in the IAQM guidance [1], the overall risk of impacts can be defined by combining the sensitivity of the area with the potential dust emission magnitude of each stage of the construction phase as described above. **Table 7.12** provides a summary of the construction dust risk assessment.

Table 7.12: Risk of Adverse Impacts during Demolition and Construction

7.93.	Potential Impact	7.94. 7.95.	Risk Earthworks	7.96.	Construction	7.97.	rackout
7.98.	Dust Soiling	7.99.	Low	7.100.	High	7.101.	Low
7.102.	Human Health	7.103.	Low	7.104.	High	7.105.	Low

7.106. Overall, the construction phase of Proposed Development is considered to be High Risk for nuisance dust soiling effects and High Risk for PM_{10} health effects, in the absence of mitigation. As stated previously, the IAQM guidance [1] recommends that significance is only assigned to the effect after considering the construction activity with mitigation.

Operational Phase

7.107. Following consultation with MCC Environmental Health, operational phase impacts did not require detailed assessment and are not considered further within this ES Chapter. An operational phase screening and exposure assessment has been undertaken in line with relevant guidance, which can be found in **Technical Appendix 7.1.** Therefore, impacts associated with operational phase road traffic emissions are not considered further within this Chapter.

7.108. While a detailed assessment of operational phase impacts has been scoped out of this ES, in line with the MCC Air Quality Planning guidance [17], a Damage Cost Calculation is recommended, otherwise known as an Emissions Mitigation Assessment.

7.109. Based on the calculation undertaken (Technical Appendix 7.1 (Section 7)) the total emissions 'damage costs' (sum of NOx and PM2.5) = £3,098, which is the indicative value of a package of air quality mitigation measures to offset the real-world impact of emissions from the Proposed Development.

7.110. Additionally, measures included within the associated Travel Plan would also aid improvement in air quality.

Cumulative Effects

7.111. The IAQM guidance does not provide a detailed approach to the assessment of potential cumulative construction phase effects. The IAQM guidance [1] states the following:

7.112. The potential for significant cumulative effects should also be considered. These are more likely to occur where the dust generating activities from separate developments projects are in close proximity and likely to occur at the same time. Ideally reference should be made to a dust assessment prepared by third parties for other relevant developments or it may be necessary to use professional judgement if such assessments are not publicly available. For example:

- multiple construction sites contributing to the risk of track out onto the same section of a public highway or;
- receptors located within 200m of multiple development sites."

7.113. The committed developments detailed within **Technical Appendix 7.1 (Appendix F)** are all located within 250m of the Proposed Development and share receptors with the Site's that are within 250m of the Site and cumulative schemes. As such, there is the potential for cumulative construction phase effects. However, all Sites should have the appropriate Air Quality Assessment and therefore adhere to the IAQM

mitigation measures in order to reduce potential impacts to negligible / not significant.

7.114. This includes, as stated by IAQM [1]:

Hold regular liaison meetings with other high risk construction sites within 250m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes

Mitigation Measures

Construction Phase

7.115. There are no relevant embedded mitigation measures associated with the construction of the Proposed Development.

7.116. The IAQM's [1] highly recommended mitigation measures, which are proportionate to the level of risk identified above, should be incorporated into the Construction Environmental Management Plan (CEMP). Full details of the measures are presented in Technical Appendix 7.1 (Appendix E). The mitigation measures contained in the CEMP would reduce the risk of impacts to No Change / Small which would result in reversible Negligible effects in the short-term on a local level (Not Significant) in accordance with IAQM guidance.

Residual Effects

Construction Phase

7.117. The table below shows a summary of the Construction Phase residual effects.

Table 7.13: Residual Effects

Potential Impact Risk Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (Temporary/Permanent)
High	Construction Phase - Dust Soiling	The mitigation measures identified in Section 8.84 and detailed in Technical Appendix 7.1 (Appendix C) would ensure that the residual effects of nuisance dust soiling and PM_{10} health effects from all activities within the construction stage would have a negligible effect.	Measures implemented during construction phase via best practice measures	Negligible (Not significant) Temporary and Short-Term
High	Construction Phase - Human Health			Negligible (Not significant) Temporary and Short-Term

Monitoring

7.118. Reference should be made to the Construction Management Chapter of the ES (Chapter 5) which confirms the recommendations for construction phase air quality monitoring.

Reference List

7.119. This ES Chapter has been prepared in reference to the following:

- [1] IAQM, "Guidance on the Assessment of Dust from Demolition and Construction" (Institute of Air Quality Management (IAQM)), January 2024 version 2.2), https://iaqm.co.uk/wp-content/uploads/2013/02/Construction-Dust-Guidance-Jan-2024.pdf.
- [2] Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe Available at: https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX%3A32008L0050
- [3] Defra. "The Air Quality Strategy for England, Scotland, Wales and Northern Ireland". Available at: https://www.gov.uk/government/publications/the-air-quality-strategy-for-england
- [4] The air quality strategy for England, Scotland, Wales and Northern Ireland: Volume 1, Available at: https://www.gov.uk/government/publications/the-air-quality-strategy-for-england-scotland-wales-and-northern-ireland-volume-1
- [5] The National Archives (2016). "The Air Quality Standards (Amendment) Regulations 2016". Available at: https://www.legislation.gov.uk/uksi/2016/1184/contents/made
- [6] The Air Quality (Amendment of Domestic Regulations) (EU Exit) Regulations 2019 (legislation.gov.uk). Available at https://www.legislation.gov.uk/uksi/2019/74/contents/made
- [7] The Environment (Miscellaneous Amendments) (EU Exit) Regulations 2020 (legislation.gov.uk). Available at: https://www.legislation.gov.uk/uksi/2020/1313/contents/made
- [8] The National Archives. "The Air Quality (England) Regulations 2000". Available at: http://www.legislation.gov.uk/uksi/2000/928/contents/made
- [9] The National Archives. "The Air Quality (England) (Amended) Regulations 2002". Available at: http://www.legislation.gov.uk/uksi/2002/3043/contents
- [10] https://www.legislation.gov.uk/uksi/2023/96/contents/made
- [11] Defra, "LAQM Technical Guidance (TG22)" (Department for Food, Environment and Rural Affairs (Defra), August 2022), https://laqm.defra.gov.uk/wp-content/uploads/2022/08/LAQM-TG22-August-22-v1.0.pdf
- [12] Ministry of Housing, Communities and Local Government, "National Planning Policy Framework," December 2023, National Planning Policy Framework - GOV.UK (www.gov.uk)
- [13] Ministry of Housing, Communities & Local Government, "Reference ID (32) Air Quality" (Ministry of Housing, Communities & Local Government, 2023), https://www.gov.uk/guidance/air-quality--3.
- [14] Manchester City Council, "Manchester's Local Development Framework, Core Strategy Development Plan Document, July 2012, Core Strategy | Manchester City Council
- [15] https://www.greatermanchester-ca.gov.uk/media/9578/places-for-everyone-joint-development-plan-document.pdf
- [16] EPUK & IAQM, "Land-Use Planning & Development Control: Planning for Air Quality" (Institute for Air Quality Management (IAQM), January 2017), http://www.iaqm.co.uk/text/guidance/air-quality-planning-guidance.pdf.
- [17] Manchester City Council, Air Quality & Planning Technical Guidance, August 2022, https://www.manchester.gov.uk/downloads/download/5199/information_for_developers
- [18] National Atmospheric Emissions Inventory, UK Emissions Interactive Map (beis.gov.uk).
- [19] https://data.gov.uk/dataset/cfd94301-a2f2-48a2-9915-e477ca6d8b7e/pollution-inventory
- [20] UK Pollutant Release and Transfer Register (PRTR) https://prtr.defra.gov.uk/map-search

- [21] UK-AIR, “Background Mapping Data for Local Authorities - 2018,” n.d., https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2018.
- [22] https://uk-air.defra.gov.uk/data/gis-mapping/
- [23] https://magic.defra.gov.uk/MagicMap.aspx
- [24] Greater Manchester Combined Authority, 2023 Air Quality Annual Status Report (ASR), In fulfilment of Part IV of the Environment Act 1995 Local Air Quality Management, June 2023.
- [25] https://cleanairgm.com/data-hub/
- [26] GREATER MANCHESTER AIR QUALITY ACTION PLAN 2016–2021, https://www.bing.com/search?q=GMCA+air+quality+action+plan&FORM=AWRE
- [27] GM Clean Air Plan Map | MappingGM, https://mappinggm.org.uk/clean-air-plan/#os_maps_light/10/53.5069/-2.3201

Figure 7.1



Construction Phase Buffer Zones and Sensitive Receptors

To Scale	Date: October 2024

8. Noise and Vibration

Introduction

8.1. This Chapter of the ES has been prepared by Fisher Acoustics Ltd and assesses the likely noise and vibration impacts of the Proposed Development upon the site and surrounding area. This Chapter also describes the methods used to assess these impacts, the existing baseline conditions, the proposed mitigation measures required to prevent, reduce or offset any significant negative impacts and the likely residual impacts after these measures have been adopted.

8.2. This Chapter is accompanied by one technical appendix, an environmental noise study (appendix 8.1).

8.3. This author of this chapter has extensive experience in the acoustic design of large-scale residential and commercial developments. The Director of Fisher Acoustics is a Chartered Engineer, holds a First Class Bachelor of Engineering in applied acoustics and has 33 years post-graduate experience in acoustic consultancy.

Assumptions and Limitations

8.4. As part of the overall study of noise and vibration, a quantitative assessment of the potential noise levels generated by construction activities has been carried out. The assessment has been based on the potential construction programme and information received relating to the number and type of plant items expected on the Site over the construction programme.

8.5. It is possible that there may be variation between the assumed construction programme and the actual construction programme and that plant items may vary from those considered as part of this assessment. However, the risk is expected to be small, in that there is certainty regarding the broad demolition and construction tasks that must be undertaken and the plant items that will be required to undertake these tasks.

Legislative and Policy Context, Guidance

Legislation

8.6. The Control of Pollution Act 1974 contains powers for local authorities to deal with noise and vibration from construction and demolition sites. Prior consent for demolition and construction activities can be granted under Section 61 of the Act.

8.7. The Planning and Compulsory Purchase Act 2004 requires local authorities to draw up local development plans, setting the broad framework for acceptable development in their area and reconciling any potential conflicts. Under the Town and Country Planning Act 1990, and in their development management role, local planning authorities may attach conditions to Planning Consents which may include controls on the emission of noise. Advice on the use of these powers is given to English authorities in the light of the Governments Noise Policy Statement for England in the National Planning Policy Framework (December 2023).

8.8. The Environmental Protection Act 1990 provides the principal controls over so-called ‘statutory nuisances’, including noise emitted from premises so as to be prejudicial to health or a nuisance. Under the Act, local authorities have a duty to inspect their areas from time-to-time to detect nuisances and, subject to a discretion to defer for seven days, when satisfied that a statutory nuisance exists or is likely to occur or recur, to serve an abatement notice on the person responsible. They also have a duty to investigate any complaint made by a person living within their area. Businesses are able to rely on the provision of ‘best practicable means’ to attenuate noise sources, but failure to comply with a notice is a criminal offence. Local authorities have a power of entry to private premises, power to seize noise-making equipment and powers to carry out works in default of Notices.

8.9. The Licensing Act 2003 establishes a scheme administered by local authorities for licensing premises which are used for the supply of alcohol, to provide ‘regulated entertainment’ or to provide ‘late night

refreshment'. Licensing authorities are obliged to prevent public nuisance, e.g. through noise, via the use of appropriate conditions.

National Planning Policy

8.10. The National Planning Policy Framework (2024) by the Ministry of Housing, Communities and Local Government 'sets out the Government's planning policies for England and how these should be applied'.

8.11. Paragraph 187 of the National Planning Policy Framework states that 'Planning policies and decisions should contribute to enhance the natural and local environment by "preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability".

8.12. Paragraph 198 of the National Planning Policy Framework 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. In doing so they should: a) mitigate and reduce to a minimum potential adverse impact resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life; b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason; c) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation".

8.13. The National Planning Policy Framework document cross references the 'Explanatory Note to the Noise Policy Statement for England'. The 'Noise Policy Statement for England' (NPSE) was published by the Department for Environment Roof and Rural Affairs in March 2010. The NPSE does not give suggested external noise criteria for commercial developments. In the absence of specific criteria, reference shall be made in this document to established guidance and principles, as established in British Standards and the local planning policy.

National Planning Practice Guidance – Noise

8.14. 'Planning Practice Guidance – Noise' is a web-based resource provided by the Ministry of Housing, Communities and Local Government (last revision date 22 July 2019) which gives guidance on Planning considerations in relation to noise.

8.15. The document identifies the subjective grading of noise and the recommended actions and different effect levels, as reproduced in Table 8.1.

Table 8..5: Summary of noise exposure hierarchy based on average response

Perception	Examples of Outcomes	Increasing Effect Level	Action
Not noticeable	No Effect	No Observed Effect	No specific measures required
Present and not intrusive	Noise can be heard, but does not cause any change in behaviour, attitude or other physiological response. Can slightly affect the acoustic character of the area but not such that there is a change in the quality of life.	No Observed Adverse Effect	No specific measures required
		Lowest Observed Adverse Effect Level	
Present and intrusive	Noise can be heard and causes small changes in behaviour, attitude or other physiological response, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a small actual or perceived change in the quality of life.	Observed Adverse Effect	Mitigate and reduce to a minimum
Significant Observed Adverse Effect Level			

Perception	Examples of Outcomes	Increasing Effect Level	Action
Present and disruptive	The noise causes a material change in behaviour, attitude or other physiological response, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant Observed Adverse Effect	Avoid
Present and very disruptive	Extensive and regular changes in behaviour, attitude or other physiological response and/or an inability to mitigate effect of noise leading to psychological stress, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory.	Unacceptable Adverse Effect	Prevent

Local Planning Policy

Manchester's Local Development Framework – Core Strategy Development Plan 2012-2027

8.16. The local planning context is provided by Manchester's Local Development Framework, Core Strategy, Development Plan Document. The Document was adopted on 11th July 2012.

8.17. With regard to noise, Policy DM1, Development Management, states that 'all development should have regard to the following specific issues for which more detailed guidance may be given within a supplementary planning document: 'effects on amenity, including privacy, light, noise, vibration, air quality, odours, litter, vermin, birds, road safety and traffic generation. This could also include proposals which would be sensitive to existing environmental conditions, such as noise.'

8.18. Saved policy DC26.1 from the Unitary Development Plan states 'New noise-sensitive developments (including large-scale changes of use of existing land or buildings), such as housing, schools, hospitals or similar activities, will be permitted subject to their not being in locations which would expose them to high noise levels from existing uses or operations, unless the effects of the noise can realistically be reduced. In giving effect to this policy, the Council will take account both of noise exposure at the time of receiving a planning application and of any increase that may reasonably be expected in the foreseeable future'.

'Planning & Noise, Technical Guidance' issued by Manchester City Council, October 2022

8.19. 'Planning & Noise, Technical Guidance', dated October 2022 has been issued by the Environmental Protection, Environmental Health and The Neighbourhoods Service sections of Manchester City Council. The document provides guidance to applicants and consultants concerning the assessment and prediction of environmental noise associated with a particular development. Reference is also made in the document to the relevant supporting information and guidance documents that Developers are expected to refer to when submitting a planning application.

8.20. Planning & Noise, Technical Guidance' refers to a number of guidance documents, including the following:

- BS 7385 (1990) Evaluation and measurement of vibration in buildings.
- BS 4142 (2014+A1 2019) Methods for rating and assessing industrial and commercial sound.
- BS 8233 (2014) Guidance on sound insulation and noise reduction for buildings.
- BS 6472 (2008) Guide to the evaluation of human exposure to vibration in buildings.
- BS 5228 (2009+A1:2014) Code of practice for noise and vibration control on construction and open sites.
- BS 7445-1 (2003) The description and measurement of environmental noise: Guide to quantities and procedures.

- BS 717-1 (2013) Acoustics. Rating of sound insulation in buildings and of building elements. Airborne sound insulation.
- National Planning Policy Framework (2012) (now on 2024 update).
- National Planning Policy Guidance (2014).
- Professional Practice Guidance (ProPG): Planning & Noise – New Residential Development Guidance (2017).
- WHO (1999) Guidelines for Community Noise.
- Building Regulations (2021) Overheating Approved Document O.

Manchester Residential Quality Guidance, (Issue 01, March 2017)

8.21. Section 4 of 'Key Actions - Ensure Visual and Acoustic Privacy' of The Manchester Residential Quality Guidance states that 'Homes are places of retreat. Residents should be able to 'shut out' the external world and enjoy sleep without suffering from either external noise generated by traffic or the public realm; or from neighbouring homes, common spaces, or other functions in the building'.

British Standards

BS 4142: 2014+A1:2019

8.22. BS4142: 2014+A1:2019 'Methods for rating and assessing industrial and commercial sound noise' details assessment methods to determine the likely effects on people inside or outside residential buildings of noise of an industrial nature such as fixed building services plant.

BS 5228: 2009+A1: 2014

8.23. BS 5228: 2009+A1:2014 'Code of practice for noise and vibration control on construction and open sites' provides guidance on significance criteria for construction noise.

BS 6472: 2008

8.24. BS6472-1: 2008 'Guide to evaluation of human exposure to vibration in buildings - part 1: Vibration sources other than blasting' provides guidance on typically acceptable limits for vibration within residential and office buildings during the day and night.

BS 8233: 2014

8.25. BS 8233: 2014 'Guidance on sound insulation and noise reduction for buildings' provides appropriate criteria for acceptable levels of noise within dwellings.

Other Guidance

Design Manual for Roads and Bridges

8.26. LA 111 Revision 2 'Noise and Vibration' of the Design Manual for Roads and Bridges (DMRB), issued May 2020 highlights methods for the assessment of traffic noise levels and advises on the impact magnitude of changes in noise levels.

8.27. The DMRB advises that the threshold criteria used for traffic noise assessment during the day is a permanent change in magnitude of 1 dB LA10,18h in the short term (i.e. on opening) or a 3 dB LA10,18h change in the long term (typically 15 years after project opening).

8.28. Furthermore, the DMRB also states that a change in noise level of 1 dB LA10,18h is equivalent to a 25% increase or a 20% decrease in traffic flow, assuming other factors remain unchanged and a change in noise level of 3 dB LA10,18h is equivalent to a 100% increase or a 50% decrease in traffic flow.

Assessment Methodology and Significance Criteria

8.29. In order to assess the potential environmental noise and vibration effects of the Proposed Development, the following methodology has been adopted:

- Identification of significant existing noise and vibration sources and existing sensitive receptors and baseline monitoring locations;
- Establishing by representative noise surveys the daytime and night time noise levels at and around the Site;
- Calculation of noise and vibration levels likely to arise at the nearest sensitive receptors during construction phases using the procedures and guidance given in BS 5228-1: 2009+A1:2014 'Code of Practice for noise and vibration control on construction and open sites;
- Review of measured noise climate at the Site in order to derive appropriate environmental noise limits for stationary building services plant serving the Proposed Development;
- Interpretation of results and comparison of the likely noise levels with relevant national criteria and guidance for construction noise; and,
- Where appropriate, formulation of proposals for controlling noise and vibration during the construction works, to be agreed with Manchester City Council Environmental Health department.

8.30. In addition, potential impacts on the Proposed Development from the following principal local noise sources have been assessed:

- Traffic on local roads; and
- Noise from building services plant within the Proposed Development affecting the buildings within the development.

8.31. The existing nearby noise sensitive residential premises are identified below and identified in Figure 8.1.

- NSR3: Dwellings at Vita Student, First Street
- NSR5: Dwellings at Square Gardens (Phase B), Hulme Street
- NSR6: Dwellings at Macintosh Mills

8.32. In addition, there are nearby planning-approved developments that are expected to be completed and occupied prior to the completion of all construction activities relating to Plot 9B. These planning-approved developments will therefore become noise sensitive receptors over the course of the proposed construction programme and are described below.

- NSR1: Dwellings at Vita House of Social, River Street (expected completion June 2025)
- NSR2: Dwellings at Square Gardens (Phase A), Hulme Street (expected completion April 2025)
- NSR4: Office at First Street, Plot 9A (expected completion September 2025)

8.33. Whilst there are other receptors around the Site, these other receptors are at greater distances from the Site than the receptors identified above, with similar exposure to the existing noise sources in the areas and similar pre-existing ambient noise levels. Therefore, the achievement of acceptable noise levels at the assessed receptors would lead to acceptable noise level at receptors at a further distance from the Site.

8.34. There are no notable existing sources of potential vibration at or around the Site. Road traffic generates insignificant levels of ground borne vibration.

8.35. This Chapter includes the results of calculations of construction noise and vibration levels at the nearest sensitive properties to the Site and a comparison of these predicted noise levels with noise limits based on guidance given in BS 5228-1: 2009+A1:2014.

8.36. The results of environmental noise surveys around the Site and the determination of the likely environmental noise effect of the Proposed Development on the surrounding residential areas are presented.

8.37. Where applicable, noise mitigation options have also been recommended in order to limit construction noise effects. In addition, mitigation measures to achieve appropriate noise and vibration levels within the Proposed Development are discussed.

Construction Noise and Vibration

8.38. Annex E of BS 5228-1: 2009+A1:2014 'Code of Practice for noise and vibration control on construction and open sites' provides guidance on significance criteria for construction noise.

8.39. Example Method 1 within Annex E, termed the 'ABC Method' is for residential receptors only, and allows the setting of threshold noise levels above which a potential significant effect could be generated. For the appropriate period (night, evening/weekends or day), the ambient noise level is determined and rounded to the nearest 5 dB. This noise level is then compared with the noise level at the receptor in question due solely to site operations. If the noise level originating from the site exceeds the appropriate category value, then a potential significant effect is indicated. Other project-specific factors, such as the number of receptors affected and the duration and character of the impact then need to be taken into consideration to determine if there is a significant effect. Table 8.2 gives the threshold values and explains how the method is applied.

Table 8.2: Example threshold of potential significant effect at dwellings

Assessment category and threshold value period	Threshold value (dB LAeq, T)		
	Category A [A]	Category B [B]	Category C [C]
Night time (23.00 - 07.00)	45	50	55
Evening and weekends [D]	55	60	65
Daytime (07.00 – 19.00)	65	70	75

NOTE 1: A potential significant effect is indicated if the LAeq, T noise level arising from the site exceeds the threshold level for the category appropriate to the ambient noise level.

NOTE 2; If the ambient noise level exceeds the Category C threshold values given in the table (i.e. the ambient noise level is higher than the above values), then a potential significant effect is indicated if the total LAeq, T noise level for the period increases by more than 3 dB due to site noise.

A) Category A: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are less than these values.

B) Category B: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are the same as category A values.

C) Category C: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are higher than category A values.

D) 19.00 – 23.00 weekdays, 13.00 – 23.00 Saturdays and 07.00 – 23.00 Sundays

8.40. Example Method 2 within Annex E states that noise generated by construction activities of duration of one month or more is deemed to be potentially significant if the total noise (pre-construction ambient noise plus construction noise) exceeds the pre-construction ambient noise level by 5dB or more, subject to lower cut-off values during daytime, evening and night of 65dB, 55dB and 45dB LAeq respectively.

8.41. The criteria stated within example Method 2 are generally applicable to the following building types:

- Residential
- Hotels and hostels
- Religious

- Education
- Health and/or community

8.42. For office and residential buildings, BS5228-1: 2009+A1:2014 refers to the 1976 revision of Advisory Leaflet 72 'Noise control on building sites, published by the Department of the Environment, which states 'Noise from construction and demolition sites should not exceed the level at which conversation in the nearest building would be difficult with the windows shut…..Noise levels, between say 07.00 and 19.00 hours, outside the nearest window of the occupied room closest to the site boundary should not exceed:

- 70 dB(A) in rural, suburban and urban areas away from main road traffic and industrial noise
- 75 dB(A) in urban areas near main roads in heavy industrial areas.'

8.43. These limits are for daytime working outside living rooms and offices. In noise-sensitive situations, for example, near hospitals and educational establishments, and when working outside normal working hours, such as between 19.00 and 22.00 hours, the allowable noise levels from building sites will be less. A reduction of 10 dB(A) may often be appropriate'.

8.44. With reference to the above discussions, Table 8.3 summarises the suggested significance criteria for the rating of construction noise affecting the noise sensitive premises around the Site.

Table 8.3: Summary of construction noise impact magnitude

Negligible	Minor	Moderate	Major
Site noise is equal to the threshold value	Site noise is 3dB to 5dB greater than the threshold value	Site noise is 5dB to 10dB greater than the threshold value	Site noise is more than 10dB greater than the threshold value

8.45. Section B.2 and Table B.1 of Annex B of BS 5228-2: 2009+A1: 2014 'Code of practice for noise and vibration control on construction and open sites – Vibration' provides guidance on human response to vibration. The vibration levels at which different effects may be perceived and their impact magnitude are summarised in Table 8.4.

Table 8.4: Guidance on Effects of Vibration Levels

Vibration Level (PPV)	Effect	Impact Magnitude
0.14 mm·s^{-1}	Vibration might be just perceptible in the most sensitive situations for most vibration frequencies associated with construction. At lower frequencies, people are less sensitive to vibration.	Negligible
0.3 mm·s^{-1}	Vibration might be just perceptible in residential environments.	Minor
1.0 mm·s^{-1}	It is likely that vibration of this level in residential environments will cause complaint, but can be tolerated if prior warning and explanation has been given to residents.	Moderate
10 mm·s^{-1}	Vibration is likely to be intolerable for any more than a very brief exposure to this level.	Major

8.46. BS6472-1: 2008 'Guide to evaluation of human exposure to vibration in buildings - part 1: Vibration sources other than blasting' provides guidance on typically acceptable limits for vibration within residential and office buildings during the day and night.

8.47. Table 8.5 gives the applicable criteria from BS6472-1: 2008. The applicable assessment criterion is the 'Vibration Dose Value' (VDV). Values of VDV within certain ranges indicate the likelihood or otherwise of adverse comment from occupants of the building.

Table 8.5: Vibration Dose Value ranges which might result in various probabilities of adverse comment within residential buildings

Place and Time	Low probability of adverse comment ms-1.75	Adverse comment possible ms-1.75	Adverse comment probable ms-1.75
Residential buildings 16hr day	0.2 to 0.4	0.4 to 0.8	0.8 to 1.6
Residential buildings 8hr night	0.1 to 0.2	0.2 to 0.4	0.4 to 0.8

8.48. For offices, BS6472-1: 2008 advises that a multiplying factor of 2 should be applied to the above vibration dose values ranges for a 16 h day.

Vibration Effects on Buildings

8.49. Section B.3 and Table B.2 of Annex B of BS 5228-2: 2009+A1: 2014 'Code of practice for noise and vibration control on construction and open sites – Vibration' identifies the transient vibration levels above which cosmetic damage could occur. The guideline levels are reproduced in Table 8.6.

Table 8.6 Transient vibration guide values for cosmetic damage

Line (see Figure 8.2)	Type of Building	Peak component particle velocity in frequency range of predominant pulse	
		4 Hz to 15 Hz	15 Hz and above
1	Reinforced or framed structures Industrial and heavy commercial buildings	50 mm/s at 4 Hz and above	50 mm/s at 4 Hz and above
2	Unreinforced or light framed structures Residential or light commercial buildings	15 mm/s at 4 Hz increasing to 20 mm/s at 15 Hz	20 mm/s at 15 Hz increasing to 50 mm/s at 40 Hz and above

NOTE 1 Values referred to are at the base of the building.

NOTE 2 For line 2, at frequencies below 4 Hz, a maximum displacement of 0.6 mm (zero to peak) is not to be exceeded

Operation Environmental Noise Impact

Building Services Noise

8.50. For noise of an industrial nature such as fixed building services plant, an assessment of the likely effects on people inside or outside residential buildings due to noise can be carried out using BS4142: 2014+A1:2019 'Methods for rating and assessing industrial and commercial sound'.

8.51. The following acoustic parameters are described within BS4142: 2014+A1:2019:

- Specific Noise Level – the equivalent continuous A-weighted sound pressure level measured over a specified time period, Tr, at the assessment position with the specific noise source contribution, LAeq, Tr (i.e. the noise level due to the new noise source).
- Rating Level – the Specific Noise Level plus an adjustment for any characteristic noise features, LAr, Tr.
- Residual Noise Level – the equivalent continuous A-weighted sound pressure level measured when the specific noise does not contribute to the ambient noise.
- Background Noise level – measured for a specific duration, T, in the absence of the specific noise source, LA90,T.

8.52. To complete a BS4142 assessment of potential noise effects upon residential properties, it is necessary to obtain the Rating Level due to the sound source in question. The Rating Level is derived by adding corrections to the measured Specific Noise Level, if the noise source:

- is tonal (correction of 0dB to +6dB, depending on severity)
- contains distinct impulses (correction of 0dB to +9dB, depending on severity)
- is intermittent (correction of +3dB if applicable)
- is otherwise distinctive against the residual acoustic environment (correction of +3dB)

8.53. Where a sound source is strongly tonal and impulsive over the duration of the appropriate assessment period, a correction of +15 dB may apply.

8.54. The Rating Level can then be used in order to ascertain the likelihood of complaints due to industrial noise disturbance by subtracting the measured background noise level. The greater the positive difference, the greater the likelihood of complaints. Table 8.7 summarises the assessment method.

Table 8.7: BS4142: 2014+A1:2019 Assessment Method

Difference between Rating Level and Measured Background Level	Assessment
+10 dB or greater	Significant adverse impact
+5 dB	Indication of adverse impact, depending on context
0 dB or less	Indication of low impact, depending on context

8.55. Where a new noise source has not yet been introduced, a recommended specific noise level can be determined based on a knowledge of the existing background noise level.

8.56. BS 4142: 2014+A1:2019 recognises that where background and rating levels are low, the potential absolute noise levels at the sensitive receptor might be more relevant in assessing potential impact than a simple comparison of the rating level and background noise level.

8.57. In such instances, reference can be made to BS 8233: 2014 in order to determine appropriate external noise levels due to buildings services plant, such that acceptable noise levels are achieved inside buildings.

8.58. 'Planning & Noise, Technical Guidance' issued by Manchester City Council gives guidance on the preferred approach to environmental noise assessments. With regard to external noise due to building services

plant, Section 3.7.1.5 of the document states:

- 'Externally mounted ancillary plant, equipment and servicing shall be selected and/or acoustically treated in accordance with a scheme designed so as to achieve a rating level of 5dB (LAeq) below the typical background (LA90) level at the nearest noise sensitive location'.

Intrusive Noise within Proposed Residential Dwellings

8.59. Internal noise levels within the proposed apartments must be appropriate for the intended use. BS8233: 2014 'Guidance on sound insulation and noise reduction for buildings' provides appropriate criteria for acceptable levels of noise ingress within dwellings.

8.60. In particular, section 7.2.2 'Internal ambient noise levels in dwellings' of BS8233: 2014 states that 'In general, for steady external noise sources, it is desirable that the internal ambient noise level does not exceed the guideline values in Table 4'. Table 8.8 identifies the guideline values.

Table 8.8: BS8233: 2014 intrusive noise criteria

BS8233: 2014 – Indoor ambient noise levels for dwellings			
Activity	Location	07:00 to 23:00	23:00 to 07:00
Resting	Living room	35 dB LAeq, 16 hours	-
Dining	Dining room / area	40 dB LAeq, 16 hours	-
Sleeping (daytime resting)	Bedroom	35 dB LAeq, 16 hours	30 dB LAeq, 16 hours

8.61. Note 7 of section 7.2.2 states that: 'Where development is considered necessary or desirable, despite external noise levels above WHO guidelines, the internal target levels may be relaxed up to 5 dB and reasonable internal conditions still achieved'.

8.62. The pre-existing external Noise levels at the Site are above the WHO (World Health Organisation) external noise guideline levels and therefore, with reference to BS8233: 2014, the maximum recommended daytime intrusive noise level within the habitable rooms of the Proposed Development is 35 dB LAeq,(16 hours) to 40 dB LAeq,(16 hours), and the corresponding night time intrusive noise limit within bedrooms is 30 dB LAeq,(16 hours) to 35 dB LAeq,(8 hours). Additionally, the recommended daytime intrusive noise level within bedrooms of the Proposed Development is 35 dB LAeq(16 hours) to 40 dB LAeq(16 hours).

8.63. With regard to maximum night time noise levels within bedrooms, BS8233: 2014 states 'regular individual noise events (for example, scheduled aircraft or passing trains) can cause sleep disturbance. A guideline value may be set in terms of SEL or LAmax,f depending on the character and number of events per night. Sporadic noise events could require separate values'.

8.64. In the absence of a specific performance criterion within BS8233 for short-term noise maxima, reference can be made to guidance published by the WHO. In particular, the WHO publication 'Guidelines for Community Noise' (1999), from which the guidance given in BS8233: 2014 is itself derived, states that 'for a good sleep, it is believed that indoor sound pressure levels should not exceed approximately 45 dB LAmax more than ten to fifteen times per night'.

8.65. With regard to noise ingress to residential dwellings, section 3.6 'National & International Standards' of 'Planning & Noise, Technical Guidance' issued by the Environmental Protection Section of Manchester City Council, references both BS8233: 2014 and WHO 'Guidelines for Community Noise', but advises that 5dB relaxations of the internal noise criteria in these documents should not be assumed. The document states that 'The Council has adopted the following noise limits for residential properties':

- Living Rooms: Daytime (0700-2300 hrs) 35dB LAeq

- Bedrooms: Night time (2300-0700 hrs) 30dB LAeq, 45dB LAmax
- (ten excesses over 45dB LAmax allowed per night)

Sensitivity of receptors

8.66. Table 8.9 presents the sensitivity criteria for receptors during the construction phase and the operational phase of the Proposed Development.

Table 8.9: Criteria to Determine Receptor Sensitivity

Sensitivity of Receptor	Description	Examples
High	Receptors where people or operations are particularly susceptible to noise or vibration	Residential dwellings, schools (during the daytime), hospitals, places of worship
Medium	Receptors of moderate to low sensitivity to noise or vibration, where it may cause some distraction or disturbance.	Conference facilities, hotels, offices
Low	Receptors of low sensitivity to noise or vibration, where it may cause mild distraction or disturbance.	Bars, cafes, restaurants, sports grounds
Negligible	Receptors where distraction or disturbance from noise or vibration is minimal	Un-occupied buildings, factories and working environments with existing high levels of noise, night clubs

Significance Criteria

8.67. The following terms have been used to describe the magnitude of noise and vibration impact:

- Major: Causes a material change in behaviour and/or attitude, e.g. avoiding certain activities during periods of intrusion. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in character of the area;
- Moderate: Noise impact can be heard and causes small changes in behaviour and/ or attitude, e.g. turning up volume of television; speaking more loudly; closing windows. Potential for non-awakening sleep disturbance. Affects the character of the area such that there is a perceived change in the quality of life;
- Minor: Noise impact can be heard, but does not cause any change in behaviour or attitude, e.g. turning up volume of television; speaking more loudly; closing windows. Can slightly affect the character of the area but not such that there is a perceived change in the quality of life
- Negligible: no discernible effect on noise or in the character of the area.

8.68. In line with the guidance presented in Guidelines for Environmental Noise Impact Assessment, published by the Institute of Environmental Managements and Assessment in November 2014, the significance of an impact can be determined with reference to the impact significance matrix detailed in Table 8.10.

Table 8.10: Impact Significance Matrix

Magnitude	Sensitivity		
	High	Medium	Low
Major	Major	Major – Moderate	Moderate
Moderate	Major – Moderate	Major - Moderate	Moderate
Minor	Moderate	Moderate - Minor	Minor
Negligible	Negligible	Negligible	Negligible

8.69. A description of the magnitude terms given in Table 8.10 is given below:

- Major: Causes a material change in behaviour and/or attitude, e.g. avoiding certain activities during periods of intrusion. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in character of the area;
- Moderate: Noise impact can be heard and causes small changes in behaviour and/ or attitude, e.g. turning up volume of television; speaking more loudly; closing windows. Potential for non-awakening sleep disturbance. Affects the character of the area such that there is a perceived change in the quality of life;
- Minor: Noise impact can be heard, but does not cause any change in behaviour or attitude, e.g. turning up volume of television; speaking more loudly; closing windows. Can slightly affect the character of the area but not such that there is a perceived change in the quality of life
- Negligible: no discernible effect on noise or in the character of the area.

8.70. Moderate or Major impacts have been considered to be 'significant' in EIA terms and Minor and Negligible impacts have been considered to be 'not significant'.

Baseline Conditions

Noise

8.71. Surveys of the existing noise environment at the Site were carried out by Fisher Acoustics Ltd from 11:10 am on Thursday 25 April 2024 to 11:55 am on Friday 26th April 2024.

8.72. The measurement locations used during the surveys were suitable for the determination of the prevailing ambient noise level at the existing local sensitive buildings and for assessing the noise levels able to impact upon the façades of the Proposed Development. Measurement locations for the noise surveys are shown in Figure 8.3 and described below.

- Location 1: At location of façade of the Proposed Development to Medlock Street 12.9 metres from the kerb and 8.2 metres from the kerb of Hulme Street, at a microphone height of 15 metres above street level

Location 2: At 3.3 metres from the kerb of Medlock Street, at a microphone height of 3.0 metres above street level

8.73. The long-term noise environment at and around the Site is principally determined by road traffic on Mancunian Way (A57(M)) and Medlock Street.

8.74. The measured noise levels during the day and night at and around the Site are summarised in Table 8.11.

Table 8.11: Summary of measured environmental noise levels – existing and proposed receptors

	Measured Noise Level					
	Daytime (defined as 0700 to 2300)			Night time (defined as 2300 to 0700)		
Location	dB, L_{Aeq}	dB, L_{Amax}	dB L_{A90}	dB, L_{Aeq}	dB, L_{Amax}	dB L_{A90}
Location 1 - 25 April 2024	71	69 to 94	64 to 74	65	62 to 90	54 to 68
Location 1 - 26 April 2024	71	72 to 93	67 to 73	-	-	-
Location 2 - 26 April 2024	68	70 to 100	63 to 67			

Vibration

8.75. There are no major sources of vibration in proximity to the Site. No adverse comment would be expected in any area of the Proposed Development due to existing levels of vibration due to the prevailing sources such as road vehicles.

Identification and Evaluation of Likely Significant Effects

Construction Noise & Vibration

8.76. There is the potential for environmental noise effects at the nearby sensitive premises from the following during the construction phase of the project:

- Clearing and excavation of site
- Temporary addition to traffic flows on local roads due to construction traffic
- Construction of Proposed Development

8.77. With reference to the guidance discussed above and the results of the noise surveys, the threshold values for potential significant effects are given in Table 8.12.

Table 8.12: Threshold noise values for potential significant effect due to construction

Location	Threshold Values, daytime dB, L_{Aeq}
NSR1: Vita House of Social, River Street (residential)	70
NSR2: Square Gardens (Phase A), Hulme Street (residential)	70
NSR3: Vita Student, First Street (residential)	70
NSR4: Office (Plot 9A) on River Street (office)	75
NSR5: Square Gardens (Phase B), Hulme Street (residential)	70
NSR6: Macintosh Mills	70

8.78. In order to estimate the likely levels of noise from construction activities at the Site, calculations have been carried out using the methodologies and data given in BS5228: 2009+A1:2014 'Code of Practice for noise and vibration control on construction and open sites; Part 1 - Noise' and by applying corrections for distance attenuation (i.e. by how much noise reduces with increasing distance from the plant).

8.79. This exercise has been carried out for each major construction phase of the project in order to calculate the worst-case hourly noise level (LAeq,1hour) at each receptor.

8.80. The construction works will involve the operation on site of the following principal major plant items at certain stages of the construction works:

- Excavators;
- Dumper trucks;
- Continuous flight auger piling rigs;
- Concrete pump;
- Poker vibrators;
- Concrete Trucks;
- Generator;
- Tower cranes;
- Hoists;
- Telehandlers

8.81. With regard to construction traffic, there could be approximately twenty eight vehicle movements to and from the Site per working day i.e. approximately two vehicles per hour to arrive and offload and then depart during a major portion of the construction programme. This approximate number of vehicle movements may prevail over approximately thirteen months of the construction programme, and in particular during the frame construction works. The proposed entry point to the site for construction vehicles is via River Street off Medlock Street. The proposed exit point from the site is Hulme Street.

8.82. Table 8.13 identifies the calculated noise levels at the receptors identified above due to cumulative noise from construction noise sources at the Site during the main construction phases. The Table presents the worst-case cumulative noise level on the assumption that all of the noisier mobile items of construction plant are situated at the section of the Site perimeter that is closest to the receptor in question. This situation will not prevail for an extended period of time, as the construction plant will move around the Site as each section of the works is completed. In addition, the typical expected noise level is presented given the location of plant items at more typical distances from the nearby receptors. It should be noted that the calculations at this stage do not include for any beneficial acoustic screening provided by any solid hoarding around the Site or by the local screening of individual plant items. An 'on' time of construction noise sources during each day of 50% has been assumed during the excavation and piling stage, and of 70% during the frame construction.

Table 8.13: Calculated noise levels at sensitive receptors during construction phases

Receptor	Calculated noise levels during construction phase (dB LAeq)		
	Excavation/Piling worst case/typical	Frame Construction worst case/typical	Post Frame Construction worst case/typical

NSR1: Vita House of Social, River Street (residential)	80/78	76 / 73	77 / 74
NSR2: Square Gardens (Phase A), Hulme Street (residential)	78 / 76	75 / 72	76 / 73
NSR3: Vita Student, First Street (residential)	71 / 70	69 / 69	70 / 70
NSR4: Office (Plot 9A) on River Street (office)	n/a	76 / 73	77 / 74
NSR5: Square Gardens (Phase B), Hulme Street (residential)	79 / 77	75 / 73	76 / 74
NSR6: Macintosh Mills (residential)	75 / 75	72 / 72	72 / 72

8.83. At other stages of the construction programme, the expected noise levels at the sensitive receptors will be lower than those given in Table 8.13, depending upon the ongoing processes and the stage of the build programme.

8.84. Table 8.14 shows the calculated excess over the threshold noise values for potential significant effect due to construction, if no mitigation measures are in place.

Table 8.14: Calculated excess over threshold noise values for potential significant effect, without mitigation

Receptor type and location	Calculated excess over construction noise target (dB LAeq)		
	Excavation/Piling worst case/typical	Frame Construction worst case / typical	Post Frame Construction worst case/typical
NSR1: Vita House of Social, River Street (residential)	10 / 8	6 / 3	7 / 4
NSR2: Square Gardens (Phase A), Hulme Street (residential)	8 / 6	5 / 2	6 / 3
NSR3: Vita Student, First Street (residential)	1 / 0	-1 / -1	0 / 0
NSR4: Office (Plot 9A) on River Street (office)	n/a	1 / -2	2 / -1
NSR5: Square Gardens (Phase B), Hulme Street (residential)	9 / 7	5 / 3	6 / 4
NSR6: Macintosh Mills (residential)	5 / 5	2 / 2	2 / 2

8.85. The values given in Table 8.14 can be compared to the values given in Table 8.3 to determine the potential impact of the typical levels of construction noise, as summarised in Table 8.15.

Table 8.15: Potential impact of typical construction noise, without mitigation

Receptor type and location	Potential noise impact

	Excavation/Piling typical	Frame Construction typical	Post Frame Construction typical
NSR1: Vita House of Social, River Street (residential)	Moderate Adverse	Minor Adverse	Minor Adverse
NSR2: Square Gardens (Phase A), Hulme Street (residential)	Moderate Adverse	Minor Adverse	Minor Adverse
NSR3: Vita Student, First Street (residential)	Negligible	Negligible	Negligible
NSR4: Office (Plot 9A) on River Street (office)	n/a	Negligible	Negligible
NSR5: Square Gardens (Phase B), Hulme Street (residential)	Moderate Adverse	Minor Adverse	Minor Adverse
NSR6: Macintosh Mills (residential)	Minor Adverse	Minor Adverse	Minor Adverse

8.86. In the worst case with no mitigation, minor to moderate adverse effects are possible at the residential dwellings at Vita House of Social, Square Gardens, and Macintosh Mills.

8.87. Given the potential adverse effects, measures to mitigate construction noise would be appropriate.

8.88. As discussed in BS5228-2: 2014 'Code of Practice for noise and vibration control on construction and open sites', it is fully expected that the construction vibration levels would not be sufficient to cause structural damage to buildings around the Site.

8.89. Natural mitigation of potential ground borne vibration due to the proposed construction activities will be afforded to the residential buildings around the Site by virtue of the distance of these receptors from the works. Potential significant effects are not expected to arise on the basis that good communication is established between the Contractor and residents.

8.90. The impact of construction vibration on existing sensitive receptors, prior to mitigation, is therefore expected to be **minor to moderate adverse**.

Operational Noise

Road Traffic

8.91. A full Transport Statement is submitted in support of this application. The Transport Statement identifies that the Proposed Development would lead to less than a 25% change in the traffic volumes on the roads surrounding the Site. With reference to paragraphs 8.26 to 8.28 above, the cumulative impact of noise due to changes in road traffic flows is expected to be **negligible**.

Building Services Plant

8.92. At this design stage, the specific total building services plant requirements for the various aspects of the Proposed Development are not known. However, noise limits for any and all building services plant can be established using published guidance.

8.93. In line with the assessment methodology detailed in BS4142: 2014+A1:2019 'Methods for rating and assessing industrial and commercial sound', in order to avoid potential noise nuisance at existing and

proposed sensitive receptors, the cumulative Rating level due to all simultaneously operating non-emergency plant across the Proposed Development must be at least 5dB lower than the typical pre-existing background noise level at the nearest residential receptors to the site. Table 8.16 identifies the allowable combined free-field Rating levels at the nearest residential receptors. Given compliance with the noise limits in Table 8.16, the predicted noise effects would be **negligible** and therefore not significant.

Table 8.16: Cumulative environmental noise limits for non-emergency building services plant

Location	Rating Level, dB LAeq	
	Daytime (07:00hrs to 23:00hrs)	Night time (23:00hrs to 07:00hrs)
NSR1: Vita House of Social, River Street (residential)	50	45
NSR2: Square Gardens (Phase A), Hulme Street (residential)	52	49
NSR3: Vita Student, First Street (residential)	50	45
NSR5: Square Gardens (Phase B), Hulme Street (residential)	52	49
NSR6: Macintosh Mills (residential)	50	45

8.94. It is expected that any emergency plant items required at the Proposed Development, such as smoke extract fans and standby generators would only operate during emergencies and during periodical test runs (such as test runs of thirty minutes every two months). On this basis, it is not considered appropriate to require emergency plant to comply with the noise limits that would apply to continuously-operating non-emergency plant. It is therefore suggested that the noise level during testing of any emergency plant is no more than 10dB(A) greater than the background noise level (measured as an LA90 noise level) at any proposed or existing residential receptor.

8.95. It is therefore recommended that the noise level at any residential façade during operation of any emergency plant does not exceed the daytime noise levels given in Table 8.17. Given compliance with the noise limits in Table 8.17, the predicted noise effects at each receptor would be **negligible** and therefore not significant.

Table 8.17: Cumulative environmental noise limits for emergency building services plant

Location	Noise Level, dB LAeq
	Daytime (07:00hrs to 23:00hrs)
NSR1: Vita House of Social, River Street (residential)	65
NSR2: Square Gardens (Phase A), Hulme Street (residential)	67
NSR3: Vita Student, First Street (residential)	65

NSR5: Square Gardens (Phase B), Hulme Street (residential)	67
NSR6: Macintosh Mills (residential)	65

Noise Affecting the Proposed Development

8.96. The sensitive areas of the Proposed Development that could be affected by the noise levels summarised in Table 8.11 above are the living rooms and bedrooms of the proposed apartments. An intrusive noise study is included in Appendix 8.1. This gives the minimum recommended sound insulation of the building facades to achieve the internal noise criteria of paragraph 8.64.

Mitigation Measures

Construction

8.97. The construction of a solid, close-boarded hoarding (2.4 metres high) around the majority of the Site is expected to be provided. This can be expected to reduce noise levels at local receptors by 0dB(A) to 5dB(A), depending upon the location of the noise source on Site and the height of the receptor.

8.98. In addition, the following recommendations must be followed to achieve appropriate reductions of construction noise.

- Noisy plant should be located so as to maximise the distances between the plant and the sensitive receptors.
- The works should be carried out in as timely a manner as possible in order to minimise the duration of any disturbance.
- Via communication between the Contractor and the Council, local residents should be kept informed of general construction activities, including working hours.
- Wherever possible, working hours should be restricted in line with Manchester City Council's typical requirements.
- Excavations in hard materials should use silenced and sensitively located compressors in conjunction with shrouded breakers.
- The drop height of materials into wagons shall be minimised.
- Any materials hoists used on the Site should be enclosed by hoarding at ground level and operated by mains electricity or via a silenced generator.
- Rubbish skips should be housed within enclosed areas that encompass the chute terminations. The materials unloading point should be enclosed.
- All reasonable steps should be taken to limit the number of vehicles waiting to deliver to the Site.
- All plant and equipment should be properly maintained.
- All plant and equipment should be operated in their minimum-noise modes with any manufacturer's silencers and covers properly in place.
- With the exception of enhanced generators, pumps and electric plant, all plant and equipment should be shut down when not in use.
- Vehicle movements should be arranged so as to minimise noise from reversing warning indicators.

8.99. Table 8.18 identifies the potential impact of construction noise at the noise sensitive receptors following the implementation of the above best practice mitigation measures. Minor adverse effects may be possible at three residential buildings during excavation and piling. Given the relatively short-term nature

of these activities, these **minor adverse** effects are not considered to be significant.

Table 8.18: Potential impact of construction noise, with mitigation

Receptor type and location	Potential noise impact	
	Excavation/Piling typical	Frame Construction typical
NSR1: Vita House of Social, River Street (residential)	Minor Adverse	Negligible
NSR2: Square Gardens (Phase A), Hulme Street (residential)	Minor Adverse	Negligible
NSR3: Vita Student, First Street (residential)	Negligible	Negligible
NSR4: Office (Plot 9A) on River Street (office)	n/a	Negligible
NSR5: Square Gardens (Phase B), Hulme Street (residential)	Minor Adverse	Negligible
NSR6: Plot 9B on Hulme Street (residential)	Negligible	Negligible

Operation

Building Services noise

8.100. Overall building services noise limits have been established to achieve compliance with published guidelines. To ensure compliance with the criteria, individual items of building services plant and any associated noise control hardware will need to be selected such that the cumulative noise levels from all plant items do not exceed the overall building services noise limits.

8.101. Given compliance with the building services noise limits given in Tables 8.16 and 8.17, the noise impact of mechanical plant serving the Proposed Development is expected to be **negligible** and therefore no mitigation is required.

Cumulative Effects

Construction

8.102. There is expected to be an overlap of construction works at the Site and at other committed developments in the vicinity of the Site. However, the other development sites are at a greater distance from the closest buildings to the Site and are expected to be at a different stage in their build programmes such that the noisier construction activities including excavation are not expected to occur at the same time. In addition, these other development sites will be controlled by approved Construction Environmental Management Plans, which will limit noise through implementation of mitigation. It is therefore expected that the cumulative construction noise levels at the nearby noise-sensitive buildings will be principally determined by the construction activities at the proposed Site. With reference to paragraph 8.98 above, the cumulative effect of construction noise following mitigation is expected to range between **negligible and minor adverse.**

Operation

8.103. Operational noise due to the Proposed Development and the committed developments in the surrounding area would include mechanical services noise and changes in road traffic noise levels due to changes in traffic flows.

8.104. The cumulative impact of noise due to changes in road traffic flows is expected to be **negligible**. This result takes into account the predicted changes in traffic flow relating to the committed developments in the surrounding area. A full Transport Statement is submitted in support of this application.

8.105. Operational noise limits due to mechanical services at the Proposed Development have been derived using the methodology and assessment criteria given in BS4142: 2014+A1:2019. Operational noise limits for any mechanical services systems at the buildings of the committed developments in the surrounding area would also be derived using the methodology and assessment criteria given in BS4142: 2014+A1:2019. The Planning Conditions for the committed developments in the surrounding area include a requirement for the building and any externally mounted ancillary equipment to be acoustically insulated in accordance with a scheme submitted to and approved in writing by the City Council in order to secure a reduction in the level of noise emanating from the equipment. The applicable noise limits will tend to be governed by the need to minimise noise levels at the buildings within the Proposed Development, as these are the closest sensitive receptors in the majority of cases. Therefore, given the relative distances of the sensitive receptors applicable to each development, cumulative impact of building services noise will be **negligible**.

Residual Effects

Table 8.19 – Summary of Receptors, Likely Significant Effects, Mitigation Measures, and Residual Effects

Likely Significant Effect	Receptor(s)	Mitigation Measure	Residual Effect
Construction Phase			
Negligible to moderate adverse construction noise	Local residents	Measures detailed in Para. 8.97 & 8.98: Solid screening around Site. Communication with City Council and local residents. Application of 'Best Practicable Means' with regard to noise control	Negligible to minor adverse construction noise effects
Operational Phase			
Negligible building services plant noise effects	Residential properties	Para. 8.92: Adherence to environmental noise limits for plant	Negligible building services plant noise effects
Increase in road traffic noise on local roads	Residential properties	-	Negligible

Summary

8.106. Noise surveys have been conducted to determine the pre-existing daytime and night time noise levels at and around the Site.

8.107. Noise levels as a result of construction work during the construction period is expected to lead to negligible to moderate adverse impact if no mitigation measures are in place. Therefore, construction impact will be minimised by the mitigation methods described in BS 5228. Low noise and vibration construction methods will be used wherever practicable and appropriate acoustic screening will be implemented where necessary and practicable. If the identified mitigation methods are employed, the impact of the

construction work during the construction period is expected to be negligible to minor adverse.

8.108. The impact of construction vibration on existing sensitive receptors is expected to be negligible.

8.109. The principal long-term potential environmental noise source due to the operation of the Proposed Development is building services plant. Building services plant noise emissions from the Proposed Development will be controlled through careful design and specification of building services plant and by provision of acoustic screens and attenuators where required to meet the noise emissions criteria at each noise sensitive receptor at and around the Site. As such, negligible impact is expected.

8.110. The minimum required sound insulation performance of the external façade to the dwellings of the Proposed Development has been identified. Compliance with the performance criteria should ensure that the impact of environmental noise levels at the Site on the occupants of the Proposed Development is negligible.

8.111. An assessment of road traffic flows shows that the impact of increases in noise levels due to changes in traffic flows will be negligible.

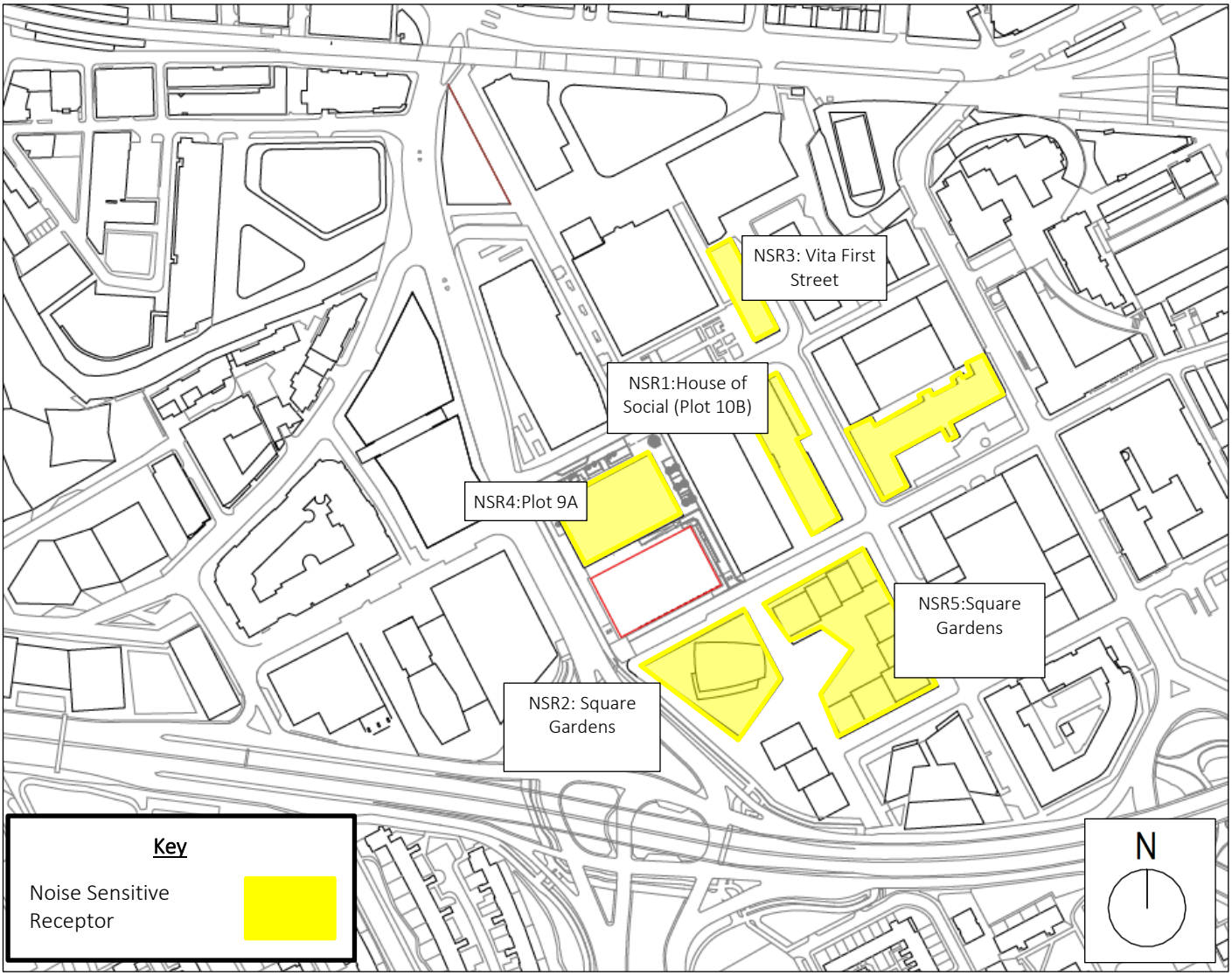


	Figure:	8.1
	Title:	Noise sensitive premises in proximity to Plot 9B

	Project:	Vita First Street, Plot 9B		
	Date:	03 July 2024	Scale:	NTS

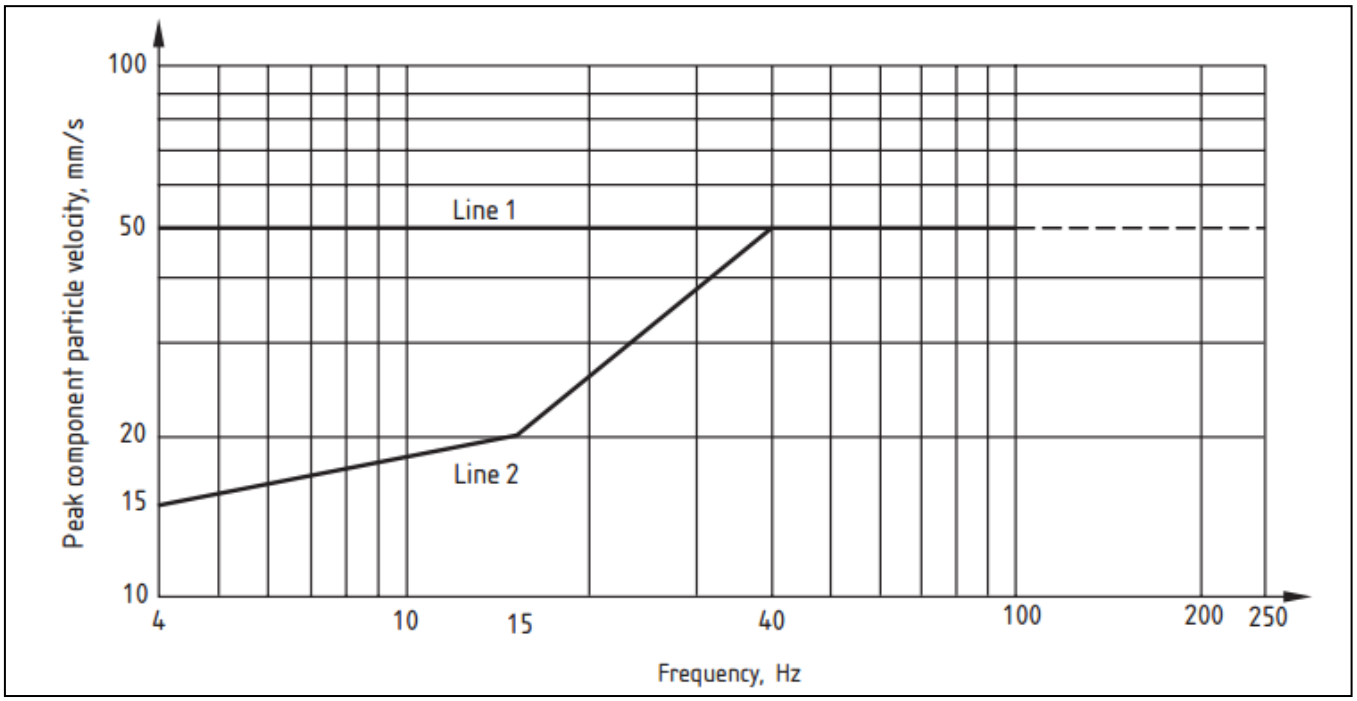


	Figure:	8.2		
	Title:	Transient vibration guide values for cosmetic damage		
	Project:	Vita First Street, Plot 9B		
	Date:	02 July 2024	Scale:	NTS

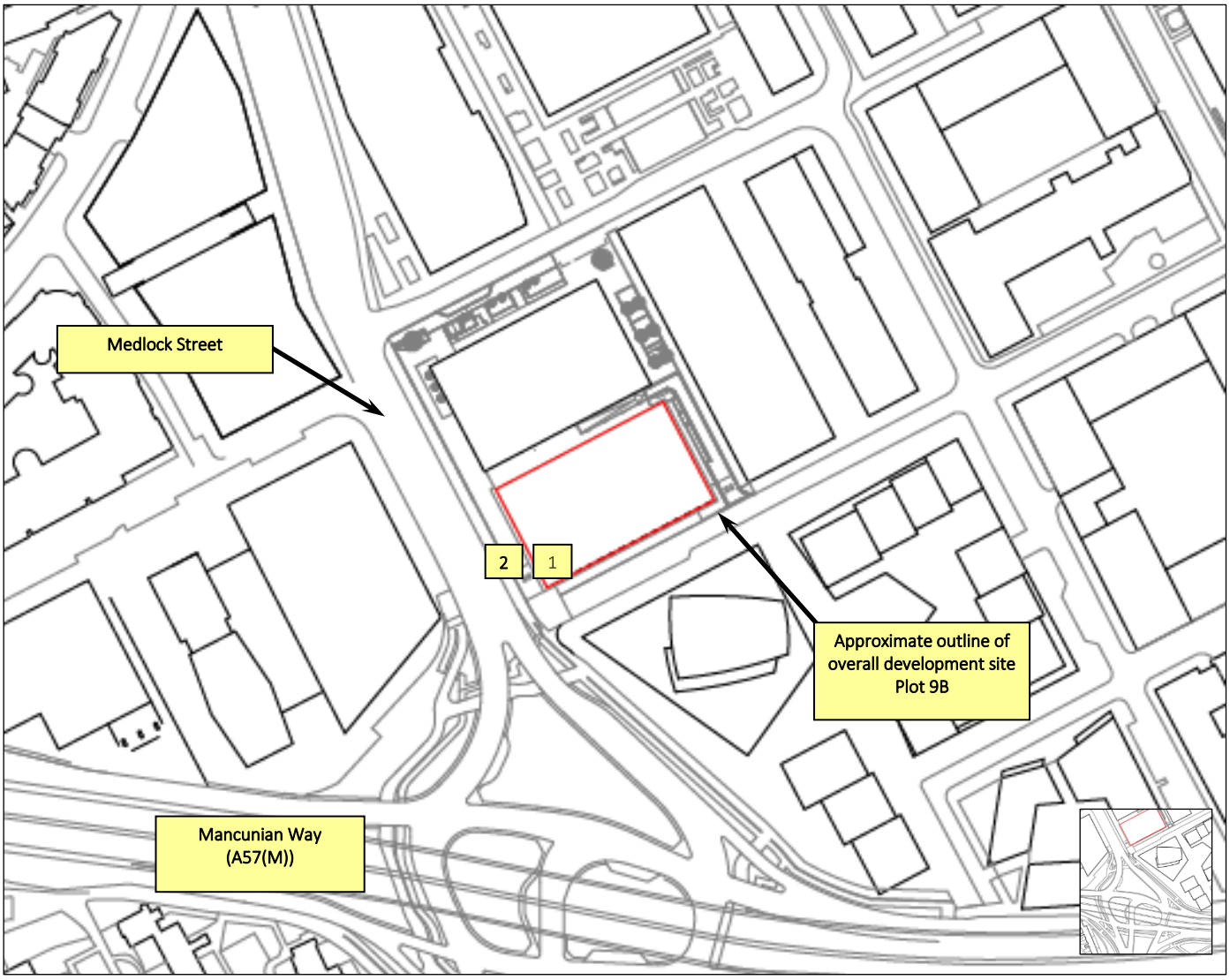


	Figure:	8.3
	Title:	Noise survey measurement locations

	Project:	Vita First Street, Plot 9B		
	Date:	03 July 2024	Scale:	NTS

9. Daylight / Sunlight / Overshadowing

Introduction

9.1. This Chapter of the ES has been prepared by Proximity and assesses impacts on daylight and sunlight amenity of the neighbouring receptors.

9.2. This Chapter is accompanied by the following appendices:

- Appendix 9.1. Summary of BRE Guidance for methodology and setting alternative targets.
- Appendix 9.2: Baseline Massing Images (Scenario 1) and Proposed Massing Images (Scenario 2).
- Appendix 9.3: Technical Analysis Results for Scenario 1 and 2.
- Appendix 9.4. Cumulative Condition Massing Images (Scenario 3).
- Appendix 9.5. Technical Analysis Results for Scenario 3.

9.3. The authors of this Chapter have the following qualifications:

	Lead Author	Reviewer
Name	Jerome Muir	Tom Kibblewhite
Company	Proximity	Proximity
Qualifications/Accreditations relevant to technical area	MRICS	MRICS
Does the practitioner hold any IEMA qualification?	No	No
Company hold IEMA QMark?	No	
Years technical experience (in technical area)	7	15+
Number of EIA's delivered to date	5-10	10+

Assumptions and Limitations

9.4. Proximity has inspected the Site and its surroundings to identify the window provision of the neighbouring buildings that overlook the Site (to the extent that such windows are capable of being observed from the adjacent public highways). This has been supplemented with Google Earth Imagery.

9.5. The interior of the neighbouring buildings considered as part of Chapter have not been inspected. It has, therefore, been necessary to make assumptions regarding the arrangement of the neighbouring rooms. These assumptions have, where possible, been informed by information available from Manchester City Council's ("MCC") Public Access Planning Portal, as well as other online sources available in the public domain including Land Registry plans and sales particulars.

9.6. The height between the internal floor level and the window cill in each room of the neighbouring buildings will influence the position of the working plane, which is the level at which the internal distribution of skylight is measured. The position of the working plane has been assumed.

9.7. On the basis that the neighbouring buildings have not been inspected, assumptions have also been made to their use and function. Assumptions have been primarily influenced by observations made during the Site inspection. Neighbouring buildings of residential use have also been identified by reference to Valuation Office Agency records – neighbouring buildings with a Council Tax Band being of residential use.

9.8. Certain neighbouring buildings are under construction, and it will, where relevant, be necessary to model their future, full massing and internal arrangement from plans and elevations available from MCC's planning portal. The relevant planning references are set out in the Committed Developments document prepared by Deloitte.

9.9. To facilitate the running of the technical analysis, computerised 3D massing simulations of the Site and its immediate surroundings have been constructed, in its Baseline, Proposed and Cumulative massing configurations. In building the 3D massing models, the following information, provided to us by others, has been relied upon:

- Photogrammetric model to the Site and surrounding area provided by Accucities; and
- 3D autocad model of the Proposed Development prepared by Jon Matthews Architects.

9.10. Following completion of the technical analysis, minor changes to the Proposed Development massing have been made in the refinement and development of the design. The changes relevant to daylight and sunlight amenity comprise a small increase of 0.03m to the lower blocks of the Proposed Development, and an increase in height of 1.16m to the taller part of the Proposed Development. Proximity has considered these changes qualitatively. These changes do not move us to alter the scope of assessment, nor the conclusions and impact significance reported in this Chapter.

Relevant Legislation, Policy and Guidance

Legislation

9.11. N/A

Policy

National Planning Policy

9.12. The following national planning policies are relevant to this assessment:

- National Planning Policy Framework ("NPPF") 2024

9.13. The NPPF promotes, where appropriate, an uplift in density for residential development in town and city centres, and notes that a flexible approach should be taken in applying guidance relating to daylight and sunlight in such areas of high density (NPPF 2024 paragraph 130 refers). The NPPF also supports (at paragraph 129) density of development and the efficient use of land where sites are well served by public transport.

Local Planning Policy

1.13 The following Local planning policies are relevant to this assessment:

- MCC Core Strategy (2012)
- MCC First Street Strategic Regeneration Frameworks (2015, 2018, 2020) ("SRF")

9.14. Policy CC6 (City Centre High Density Development) of the Core Strategy states that "City Centre development will generally be high-density. It is a location where land should be used to maximise its efficiency. The appropriate scale, massing and height of development in the City Centre will significantly exceed what is

appropriate elsewhere in the City".

9.15. The First Street SRFs have identified the First Street as part of the City Centre, and have progressively uplifted the density envisioned for First Street.

9.16. Impacts on daylight and sunlight amenity are a normal and anticipated effect of existing and increased density found in a City Centre.

Guidance

9.17. The following Guidance is relevant to this assessment:

- Building Research Establishment (BRE) Guidance Note Site Layout Planning for Daylight & Sunlight: A Guide to Good Practice (2022) ("the BRE Guidance"); and
- MCC Guide to Development in Manchester (2017).

9.18. In MCC's Guide to Development in Manchester, in encouraging developers to "appreciate scale" the SPD acknowledges that taller buildings can have an impact on the character and atmospheric quality of the spaces immediately around them.

9.19. The BRE Guidance is technically robust and has become the industry standard methodology for assessing daylight and sunlight amenity in the built environment. The BRE Guidance states that the provisions therein not mandatory, and that numerical target values are purely advisory.

9.20. Further detail of the provisions of the BRE Guidance are set out within the relevant sections below and in Appendix 9.1

Assessment Methodology and Significance Criteria

Scenarios Tested

9.21. The following scenarios have been tested:

- Scenario 1: Existing Baseline - the Site as it is today
- Scenario 2: Existing Baseline with Proposed Development
- Scenario 3: Existing Baseline with Proposed Development and Cumulative developments

The Study Area

9.22. In identifying the Study Area, the BRE Guidance has been used.

9.23. The Guidance emphasises the assessment of residential accommodation, specifically habitable rooms within residential buildings. A non-residential building may be assessed if there is a reasonable expectation of daylight and sunlight, such as hospitals or schools. Commercial office buildings are not typically considered to be daylight and sunlight receptors requiring impact assessment.

9.24. The appropriate study area has been defined following a Site inspection and research to identify neighbouring buildings of residential use, with the application of principles set out within the BRE Guidance (further detail of which below) neighbouring buildings outside of 300m from the Site will not be affected. Proximity has exercised professional judgement to consider which neighbouring buildings within 300m of the Site rely on the Site for the receipt of daylight and sunlight, and which warrant further technical appraisal.

9.25. Based on their spatial relationship with the Site and outlook towards the Proposed Development, the habitable rooms of the following neighbouring buildings are identified as daylight and sunlight receptors that would justify technical appraisal:

- First Street Plot 10B Development - Currently under construction; and
- First Street Plot 11 Development.

9.26. Rooms within the above buildings that are understood to be of non-habitable use (based on site inspection or room layout research) are excluded from the assessment.

9.27. For the avoidance of doubt, based on professional experience, residential buildings outside of 250m from the Site, and those within 300m but scoped out of the assessment, will not experience a material impact on daylight or sunlight amenity, based on distance from the Site and / or orientation.

9.28. For completeness, James Grigor Square to the north of the Site is acknowledged as an external amenity area.

9.29. As noted in the Scoping Report, this external amenity area has been scoped out of assessment in this Chapter, on the basis that impacts of the Proposed Development, if any, on sunlight amenity of this space will be Not Significant. This is due to both the distance between the Site and James Grigor Square, and presence of the 9A development massing, which substantially screens the Proposed Development massing from this external space.

Source of Effect

9.30. The massing of the Proposed Development will be the source of daylight and sunlight impacts / effects of the Proposed Development.

9.31. The Proposed Development massing may result in reduced sky visibility from within habitable rooms of neighbouring buildings, and the windows that serve them. This is turn will have an effect on the daylight and sunlight amenity enjoyed by the occupants of these buildings in the proposed condition.

9.32. Impacts of daylight and sunlight amenity are therefore likely to be permanent and localised to individual receptors.

Significance Criteria

9.33. The assessment has been undertaken in accordance with the provisions of the BRE Guidance document Site Layout Planning for Daylight and Sunlight – A Guide to Good Practise.

9.34. The assessment of daylight and sunlight amenity impacts is also made with reference to national and local planning policy.

9.35. The impacts of new development on the daylight and sunlight amenity of neighbouring receptors are assessed in accordance with the BRE Guidance.

9.36. Where appropriate, a technical analysis exercise has been undertaken, and the daylight and sunlight conditions, as existing and proposed, have been assessed with reference to the following tests:

- Vertical Sky Component (“VSC”)
- The No Sky Line (“NSL”)
- Annual Probable Sunlight Hours (“APSH”) and Winter Probable Sunlight Hours ("WPSH”)

9.37. In summary, the targets established in accordance with the BRE Guidance are as follows:

Unit measured	BRE Target	Acceptable Tolerance Alternative Target
VSC	27%	21.6%
NSL	At least 0.8x baseline	n/a
APSH	25%	20%
WPSH	5%	4%

9.38. Further detail on how these metrics are measured can be found in Appendix 9.1.

9.39. The Acceptable Tolerance Alternative Target has been established using BRE principles.

9.40. In summary, the BRE Guidance notes that retained daylight and sunlight values that are of at least 0.8x baseline value are unlikely to be noticeably different to occupants.

9.41. On that basis, Acceptable Tolerance Alternative Targets, appropriate to the City Centre and areas of current or future elevated density (sought by LPA planning policy), are established by applying 0.8x to the BRE’s targets for VSC, APSH and WPSH and shown in the table above.

9.42. The significance of an environmental impact is a factor of the receptor sensitivity and the magnitude of change.

9.43. It is therefore necessary to first establish the sensitivity of a receptor, and a methodology for determining the magnitude of change.

Sensitivity of Receptors

9.44. Having identified the relevant receptors, it is necessary to consider their sensitivity to reductions in daylight and sunlight. The general methodology that Proximity has adopted for determining sensitivity to a measured magnitude of change is tabulated below:

Sensitivity	Examples of receptor
High	The receptor/resource has little ability to absorb change without fundamentally altering its present character, or is of international or national importance.
Moderate	The receptor/resource has moderate capacity to absorb change without significantly altering its present character, or is of high importance.
Low	The receptor/resource is tolerant of change without detriment to its character, is of low or no local importance.

9.45. The BRE Guidance emphasises the availability of daylight and sunlight to living rooms and daylight to bedrooms and family kitchens.

9.46. The BRE does not impose a hierarchy of habitable rooms, i.e., confirm whether one habitable room should receive more light than another, but in real terms, such a hierarchy does exist, and that hierarchy should be borne in mind when considering and evaluating the impact that the Proposed Development might have on the availability of light in a City Centre environment.

9.47. The above general methodology has been developed further below to establish the following window sensitivity matrix, informed in part by the BRE Guidance, and, based on the function or use of the rooms behind each of the windows that have been assessed.

Room Use	Daylight Sensitivity	Sunlight Sensitivity
Living Room / Combined Living, Kitchen & Dining ("LKD")	High	High
Kitchen / Dining	Medium	Low
Bedrooms	Medium / Low	Low
Student Accommodation	Low	Low
Communal Kitchens	Low	Low
Circulation Space	n/a	n/a

Toilets / Bathrooms	n/a	n/a
Commercial Uses	n/a	n/a

Determining the Magnitude of Change

9.48. It is possible to reduce the amount of daylight and / or sunlight that a window currently receives without that reduction amounting to a material / significant or adverse impact on the existing amenity enjoyed. The following has been used as a methodology for determining the magnitude of change in evaluating the results of the technical study.

9.49. Magnitudes of change are defined below:

Magnitude of Impact	Criteria for assessing impact
Major	Total loss or major/substantial alteration to key element/features of the baseline (pre-development) conditions such that the post development character/composition/attributes will be fundamentally changed. From a measurement perspective this will include any reduction in amenity of in excess of 40% of the existing or baseline values.
Moderate	Loss or alteration to one or more key elements/features of the baseline conditions such that post development character/composition/attributes of the baseline will be materially changed. From a measurement perspective this will include any reduction in amenity of between 30-40% of the existing or baseline values.
Minor	A minor shift away from baseline conditions. Change arising from the loss/alteration will be discernible/detectable but not material. The underlying character/composition/attributes of the baseline condition will be similar to the pre-development circumstance/situation. From a measurement perspective this will include any reduction in amenity of between 20-30% of the existing or baseline values.
Negligible	Very little change from baseline conditions. Change barely distinguishable, approximating to a 'no change' situation. From a measurement perspective this will include any reduction in amenity of up to 20% less than the existing or baseline values. i.e., retained values in the Proposed condition will be at least 0.8x baseline values

Significance of Impacts

9.50. The significance of an impact can be assessed with reference to the table below and to the BRE Guidance. Significance of impact is defined in the table below:

Sensitivity	High	Moderate	Low

Magnitude			
Major	Major Adverse/Beneficial	Major- Moderate Adverse-Beneficial	Moderate- Minor Adverse-Beneficial
Moderate	Major Adverse/Beneficial	Moderate Adverse – Beneficial	Minor Adverse/Beneficial
Minor	Minor Adverse/Beneficial	Minor Adverse/Beneficial	Negligible
Negligible	Negligible	Negligible	Negligible

9.51. Those impacts identified as Moderate or Major Adverse, highlighted above, are considered to be Significant.

9.52. Impacts that are Minor Adverse or Negligible are Not Significant.

Application of the BRE Guidance in Environmental Impact Assessment

9.53. Appendix H of the BRE Guidance outlines how the guidelines within can be applied in the context of Environmental Impact Assessment.

9.54. It notes a number of factors that tend towards a minor adverse impact, including only a small number of windows are affected; loss of light is marginally outside of the guidelines; a receptor has a low-level requirement for daylight or sunlight; other reasons, such as a window standing unusually close to a boundary.

9.55. The BRE Guidance also notes factors tending towards a major adverse impact. Such factors include a large number of windows being affected; loss of light is substantially outside of the guidelines; all the windows in a particular property are affected.

9.56. Notwithstanding the above generalisation of an impact, a reduction in daylight and sunlight amenity will at all times be subject to the BRE general compliance criteria, as follows:

- If the BRE targets are met in the Proposed condition, then any reduction in daylight and sunlight will not be considered significant.
- Where the BRE targets are not achieved in the Baseline condition, a retention of 0.8x baseline values in the Proposed Condition will not be considered significant. In accordance with the BRE Guidance, such a reduction is unlikely to be noticed by the room occupants.
- A 20% reduction of the measured baseline NSL value (i.e., retention of 0.8x baseline value) will not have a material impact, on the grounds that such a reduction would not be noticed by the room occupants.
- As confirmed earlier in this Chapter, it is the professional opinion of Proximity that a VSC of 21.6% is within an acceptable tolerance of the BRE targets, given the City Centre / Corridor context of the Site.
- As confirmed earlier in this Chapter, it is the professional opinion of Proximity that a 4% winter and 20% annual APSH result is within an acceptable tolerance of the BRE targets, given the City Centre context of the Site.

9.57. Where a window or room achieves the BRE target or the Acceptable Tolerance alternative target, the impact is considered to be Not Significant.

Baseline Conditions

9.58. The Site is located within the First Street Development Framework area. It is currently an open parcel of land bounded by Hulme Street to the south, Medlock Street to the west, Plot 9A First Street to the north, and Plots 10A and 10B First Street to the east.

9.59. Plot 9A is currently in the process of being redeveloped with a 9 storey office building.

9.60. Plot 10A is currently an open parcel of land. It does, however, have planning permission for redevelopment with

a 13 storey commercial office building.

9.61. Plot 10B is in the process of being redeveloped with a 14 storey PBSA building.

9.62. To the south of the Site on the opposite side of Hulme Street, Plot 11 First Street is in the process of being comprehensively redeveloped with three buildings of heights varying from 10 storeys to 45 storeys.

9.63. To the north of the Site beyond Coleman Street, are a mixture of buildings of approximately 7-8 storeys in height. These comprise 8 First Street, 1 Tony Wilson Place, and Vita House.

9.64. To the west of the Site on the opposite side of Medlock Street, various parcels of land are in the process of being redeveloped, following demolition of the Premier Inn Building and the office building at One City Road. The Premier Inn site has a planning permission for its redevelopment with two buildings – a 13 storey office building and an PBSA building of part 11; part 38 storeys in height. The One City Road East site also has a planning permission for its redevelopment with two office buildings of 11 and 14 storeys.

9.65. Generally, the Site and its surroundings is considered to be of high density massing.

Identification and Evaluation of Likely Significant Effects

Construction Phase

9.66. Since the potential daylight and sunlight effects relating to construction works will gradually increase to the potential effects identified for the completed Proposed Development, the interim construction effects have not been assessed quantitatively as it is considered that the completed Proposed Development represents the worst-case assessment in terms of likely daylight and sunlight.

9.67. During the construction phase, the daylight and sunlight effects will gradually change from the baseline condition to those impacts (where present) with the Proposed Development in place, which is described below in the operational phase.

Operational Phase

Daylight Amenity

9.68. Impacts of the Proposed Development on the daylight amenity of developments at Plot 10B First Street and Plot 11 First Street have been assessed.

9.69. In the Baseline condition (Scenario 1), daylight amenity of these rooms is as follows:

Receptor	Achieves BRE VSC target (27%)	Below BRE VSC target (27%)
Plot 10B Development	202 windows (55%)	162 windows (45%)
Plot 11 Development	773 windows (83%)	161 windows (17%)

9.70. In the Proposed condition (Scenario 2), daylight amenity of these windows is as follows:

Receptor	Achieves BRE VSC target (27%) OR Negligible Mag of Change	Achieves Acceptable Tolerance Target (21.6%)	Below Acceptable Tolerance Target (21.6%)
Plot 10B Development	239 windows (66%)	11 windows (3%)	114 windows (31%)
Plot 11 Development	655 windows (70%)	80 windows (9%)	199 windows (21%)

9.71. In the Proposed condition (Scenario 2), No Skyline Results and magnitude of change of these rooms is as follows:

Receptor	Negligible	Minor	Moderate	Major
Plot 10B Development	303 rooms (96%)	5 rooms (2%)	6 rooms (2%)	-
Plot 11 Development	784 rooms (98%)	18 rooms (2%)	-	-

Technical analysis results for daylight impact assessment can be found in Appendix 9.3.

Plot 10B First Street

9.72. This neighbouring building is currently under construction. Once completed, part of its window provision will directly overlook the Site.

9.73. 364 windows serving 314 habitable rooms have been appraised. Rooms assessed comprise 264 bedrooms and 50 Living / Kitchen / Dining rooms ("LKDs").

9.74. In the baseline condition, 202 windows (55%) would achieve the BRE's VSC target of 27%. 162 windows (88%) would not achieve the 27% VSC target.

9.75. In the Proposed Condition, 239 windows (66%) achieve the VSC target, or retain VSC values that are at least 0.8x baseline values.

9.76. A further 11 windows (3%) would achieve VSC values of at least 21.6%, the alternative VSC target established for city centre areas of high density.

9.77. 114 windows (31%) would not achieve the Alternative VSC target of 21.6%, experiencing Minor magnitudes of change.

9.78. 303 rooms (96%) appraised pass the NSL test, experiencing negligible magnitudes of change in daylight distribution within the room.

9.79. 5 LKD rooms (2%) would experience minor magnitudes of change in NSL. Impacts on these rooms is Minor Adverse and Not Significant.

9.80. 6 LKD rooms (2%) would experience moderate magnitudes of change, equating to Moderate Adverse impacts that are significant.

9.81. Overall, the impact on daylight amenity of Plot 10B is Minor Adverse and therefore Not Significant on the basis that the significant majority of rooms pass the NSL test, and all avoid Major magnitudes of change; and all windows experience either negligible or minor magnitudes of change.

Plot 11 First Street

9.82. 934 windows serving 802 habitable rooms have been appraised. Rooms assessed are assumed to be a mixture of studios, bedrooms and LKD rooms (quantities of which are not confirmed due to limited detail of plans available from the planning portal).

9.83. In the baseline condition, 773 windows (83%) would achieve the BRE's VSC target of 27%. 161 windows (17%) would not achieve the 27% VSC target.

9.84. In the Proposed Condition, 655 windows (70%) would achieve the VSC target, or retain VSC values that are at least 0.8x baseline values.

9.85. A further 80 windows (9%) would achieve VSC values of at least 21.6%, the alternative VSC target established for city centre areas of high density. These are VSCs commensurate with levels of daylight appropriate for environments of high density, such as the City Centre.

9.86. 199 windows (21%) would experience reductions that could be noticed by room occupants, and where residual VSCs are less than 21.6%.

9.87. Of these 199 windows:

- 48 windows (5%) would experience minor magnitudes of change.
- 63 windows (7%) would experience moderate magnitudes of change.
- 88 windows (9%) would experience major magnitudes of change.

9.88. In accordance with the Significance of Impact matrix above, Minor magnitudes of change of the 47 windows above equate to impacts that are either Minor or Negligible, regardless of room sensitivity. Impacts on these rooms (which all either experience Negligible or Minor Magnitudes of change in NSL) is Not significant.

9.89. All rooms served by these 151 windows experiencing Moderate or Major magnitudes of change in VSC (the 63 and 88 windows noted above), would all either experience Negligible or Minor Magnitudes of change in NSL.

9.90. Further, 63 of these 151 windows would retain VSCs of at least 15%, a figure identified by the BRE as being capable of providing adequate daylight with the presence of, for example, large windows as found on this building.

9.91. Overall, of the 802 rooms appraised, 784 rooms (98%) would pass the NSL criterion, experiencing negligible reductions in the No Sky Line.

9.92. The remaining 18 rooms (2%) would experience minor magnitudes of change in the No Skyline.

9.93. A minority of the building's windows, and a very small minority of the building's rooms would experience significant impacts on daylight amenity. These impacts are localised to a minority of this neighbouring building.

9.94. On the basis that the majority of the building's windows, and the very high majority of the building's rooms would achieve the BRE targets for the VSC and NSL, overall, the impact on daylight amenity of this neighbouring building is no more than Minor Adverse and therefore Not Significant.

Sunlight Amenity

9.95. In accordance with the BRE Guidance, windows serving habitable rooms have only been appraised if they face within 90 degrees of due south.

9.96. Windows that are more than 90 degrees from due south (i.e., northwest, north and northeast facing) have a limited expectation of direct sunlight due to their orientation and do therefore not merit sunlight amenity impact appraisal.

Plot 10B First Street

9.97. 314 habitable rooms (comprising 50 LKD rooms; 264 student bedrooms), served by 364 windows have been sunlight amenity impact appraised.

9.98. In the baseline condition, 256 rooms (82%) would achieve both the annual and winter sunlight targets. 37 rooms (12%) would achieve either the annual or winter sunlight target, but not the other. 21 rooms (7%) would achieve neither sunlight target.

9.99. In the Proposed Condition, 82 rooms (26%) would achieve both the Winter and Annual sunlight targets or retain at least 0.8x baseline sunlight values. Impacts on sunlight amenity of these rooms is negligible and Not Significant.

9.100. Of the remaining 232 rooms, 194 (62%) of these are bedrooms. Bedrooms are a low sensitivity sunlight receptor, and on that basis - regardless of Minor, Moderate or Major magnitudes of change - impacts are either negligible or Minor Adverse. Impacts on these bedrooms of this neighbouring building are Not Significant.

9.101. 38 LKD rooms (12% of Plot 10B rooms appraised) would not achieve both annual and winter sunlight targets. Of these:

- 2 rooms would achieve the annual sunlight target, and the Alternative target of 4% for winter sunlight. On the basis that these rooms achieve the Alternative Target established for environments of high density, such as the City Centre, residual levels of sunlight are appropriate and balanced. Impacts on these rooms are Not significant.
- 25 would achieve the annual sunlight target but not the winter sunlight target. Magnitudes of change on winter sunlight are Moderate or Major. Impacts of the Proposed Development on annual sunlight of

these rooms is not Significant; impacts on winter sunlight of these rooms is Major adverse and therefore significant.

- 5 rooms would experience Minor magnitudes of change in annual Sunlight values and retain APSH values in excess of the Alternative Sunlight Target established for environments of high density, such as the City Centre. These rooms would not achieve the winter sunlight target (typically experiencing moderate magnitudes of change.
- 6 rooms would achieve neither annual nor winter sunlight targets, experiencing Major or Moderate magnitudes of change in both. Impacts in the annual and winter sunlight of these 6 rooms is Major Adverse, and therefore significant.

9.102. Significant impacts on sunlight amenity of 10B are localised to a small minority (11%) of this neighbouring building. Impacts on the majority of rooms (89%) in this building are Negligible and Not significant.

9.103. Overall, on the basis that only a small proportion of the windows are affected, the impact on sunlight amenity of Plot 10B is Minor Adverse and therefore Not Significant.

Plot 11 First Street

9.104. On the basis that the Site and Proposed Development are to the north / north west of the Tower on Plot 11, direct sunlight will not be received over the Site be these rooms of Plot 11. The Proposed Development will have no impact on the sunlight amenity of the rooms in that part of the Plot 11 Development.

9.105. 95 rooms within Block A of Plot 11 First Street have been sunlight impact assessed.

9.106. In the baseline condition, all 95 rooms (100%) would achieve both the annual and winter sunlight targets.

9.107. In the Proposed Condition, all 95 rooms (100%) would continue to achieve the Winter and Annual sunlight targets. Impacts on sunlight amenity of these rooms is negligible and Not Significant.

9.108. Overall, the impact of the Proposed Development on sunlight amenity of Plot 11 First Street is Negligible and Not Significant.

Cumulative Effects

9.109. In the Cumulative Condition, the massing of the following has been included, these being in close enough Proximity to the site to be a material influence on daylight and sunlight amenity of Plot 10B and Plot 11:

- Plot 10A - MCC Planning Application Ref 136043/FO/2023
- One City Road - MCC Planning Application Ref 128002/FO/2020
- One Medlock Street - MCC Planning Application Ref 135419/FO/2022
- Vision Whitworth St West - MCC Planning Application Ref 111003/FO/2016/C1
- Park Place (56 storeys) - MCC Planning Application Ref 129273/FO/2021
- The Lighthouse (71 storeys) - MCC Planning Application Ref 137227/FO/2023
- The Green (51 storeys) - MCC Planning Application Ref 137226/FO/2023
- Plot 11 Block C - MCC Planning Application Ref 138831/FO/2023
- Hotspur House - MCC Planning Application Ref 138805/FO/2023

9.110. All other planning approved developments in the vicinity are either too far away from the identified receptors, or will not be seen due to other massing, meaning that they have no material influence on the Cumulative Assessment.

Plot 10B - Daylight & Sunlight Amenity

9.111. In the Cumulative Condition, there are Major Adverse impacts on the daylight and sunlight amenity of Plot 10B.

9.112. All windows and rooms will experience Major Magnitudes of change in VSC and NSL.

9.113. All rooms appraised will also experience Major Magnitudes of change in annual and winter sunlight.

9.114. These Major adverse impacts are the result of the massing of Plot 10A, and not the Proposed Development. The massing of Plot 10A is equal in width to the development on Plot 10B, but of greater height and positioned parallel to it (i.e. directly in front of the windows of 10B).

9.115. The significant majority of windows of 10B will have no view at all of the Proposed Development.

Plot 11 - Daylight Amenity

9.116. There are also Cumulative impacts on daylight amenity of Plot 11.

9.117. In the Cumulative condition, 526 windows (56%) would achieve the VSC target, or retain VSC values that are at least 0.8x baseline values. This is a reduction of 14% compared to the Proposed Condition.

9.118. A further 101 windows (11%) would achieve VSC values of at least 21.6%, the alternative VSC target established for city centre areas of high density.

9.119. 307 windows (33%) would experience reductions that could be noticed by room occupants, and where residual VSCs are less than 21.6%.

9.120. 673 rooms (84%) would pass the NSL criterion in the Cumulative Condition. Of the remaining 137 rooms:

- 53 rooms (7%) would experience Minor magnitudes of change.
- 28 rooms (3%) would experience Moderate magnitudes of change.
- 48 rooms (6%) would experience Major magnitudes of change.

9.121. Overall, these figures represent an uplift in impact in the Cumulative Condition, compared to the Proposed Condition.

9.122. Block A of Plot 11 will experience an increase in impact on daylight amenity, and the massing of Plot 10A contributes to these uplifts.

9.123. Block D will also experience an increase in impact. The massing of the One Medlock Street and One City Road contribute to the increase in impact.

9.124. Notwithstanding an uplift in impact on daylight amenity compared to Scenario 2, overall the impact on the daylight amenity of Plot 11 in the Cumulative Condition is Minor Adverse. These windows and rooms which experience adverse impacts still account for a minority of those appraised, and a smaller minority of the Plot 11 Development as a whole.

Plot 11 - Sunlight Amenity

9.125. In the Cumulative Condition, 17 rooms (18%) would continue to achieve the Winter and Annual sunlight targets. Impacts on sunlight amenity of these rooms is negligible and Not Significant.

9.126. 25 Rooms (26%) would achieve the winter sunlight target and the Acceptable Tolerance target for Annual Sunlight. A further 4 rooms (4%) would achieve the acceptable Tolerance targets for both annual and winter sunlight. Impacts on sunlight amenity of these rooms is Not Significant.

9.127. 5 rooms (5%) would achieve the winter sunlight target but not the annual sunlight target. A further 44 rooms (46%) would achieve the winter sunlight Acceptable Tolerance target, but not the annual sunlight. These rooms typically experience Major Magnitudes of change on annual sunlight.

9.128. On the basis that circa half of rooms appraised experience major magnitudes of change and therefore Major adverse impacts on annual sunlight, overall the impact of the Proposed Development on sunlight amenity of Plot 11 First Street is Moderate Adverse and therefore Significant.

9.129. The principal limitation on sunlight amenity to these rooms is the adjacent massing of / within Plot 11. The tower (Block D of Plot 11) is located to the south west directly in front of these windows. In the cumulative condition, the additional proposed massing of Plot 11 Block C, which is located to the south of these rooms' windows, is a further obstruction to direct sunlight and limitation on the sunlight amenity of these rooms.

Mitigation Measures

Construction Phase

9.130. No additional mitigation measures are proposed during construction of the Proposed Development

Operational Phase

9.131. No additional mitigation measures are proposed during operation of the Proposed Development

Residual Effects

Construction Phase

9.132. Since the potential daylight and sunlight effects relating to construction works will gradually increase to the potential effects identified for the completed Proposed Development, the interim construction effects have not been assessed quantitatively as it is considered that the completed Proposed Development represents the worst-case assessment in terms of likely daylight and sunlight.

9.133. During the construction phase, the daylight and sunlight effects will gradually change from the baseline condition to those impacts (where present) with the Proposed Development in place, which is described below in the operational phase.

Operational Phase

9.134. On the basis that no mitigation measures are proposed, the Residual Effects of the Proposed Development on the Daylight and Sunlight amenity of the neighbouring sensitive receptors remain as per the Operational Phase effects identified earlier in this chapter, and summarised in the table below:

Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (Temporary/Permanent)
Daylight				
Minor Adverse Impact on daylight amenity	Plot 10B First Street	None Proposed	None Proposed	Not Significant and Permanent
Minor Adverse Impact on daylight Amenity	Plot 11 First Street	None Proposed	None Proposed	Not Significant and Permanent
Sunlight				
Minor Adverse Impact on sunlight Amenity	Plot 10B First Street	None Proposed	None Proposed	Not Significant and Permanent
Negligible Impact on sunlight amenity	Plot 11 First Street	None Proposed	None Proposed	Not Significant and Permanent

9.135. As noted above, following completion of the technical analysis minor changes to the massing were made in the refinement and design development of the Proposed Development. The changes relevant to daylight and sunlight amenity are set out in Assumptions and Limitations above. Proximity has considered these changes qualitatively.

9.136. Notwithstanding that these slight changes to the Proposed Development massing would result in very minor changes to measured daylight and sunlight amenity values of the windows and rooms of neighbouring receptors, overall these differences would be small. The increase in height of 0.03m to the lower parts of the Proposed Development would have a negligible or no effect on daylight amenity values.

9.137. The increase in height of 1.16m to the top of the building would also have negligible changes to the significant majority of windows and rooms appraised. The only rooms with potential to experience anything greater than

marginal fractional changes are those within the Plot 11 Downing Development located at comparable height or slightly lower than the top of the Proposed Development.

9.138. The significance of impact on daylight and sunlight amenity of Plot 11 Development as a whole would remain unchanged, on the basis that:

- These windows and rooms are a very small minority of the Plot 11 development as a whole;
- these windows and rooms are positioned at an angle to the Proposed Development, and benefit from light around the side of The Site / Plot 9B;
- these upper level rooms enjoy good levels of daylight amenity as a result of their elevated location and floor to ceiling windows; and
- The significant majority of this neighbouring building would experience Negligible and Not significant impacts on daylight amenity (98% of rooms passing the NSL test), and this very high proportion would remain the case with inclusion of additional height to the Proposed Development.

9.139. The conclusions drawn and significance of impacts on the neighbouring receptors reported in this Chapter do therefore remain unaltered as a result of these Proposed Development design changes.

Monitoring

9.140. None recommended / Not applicable.

Reference List

9.141. This ES Chapter has been prepared in reference to the following:

– Building Research Establishment (BRE) Guidance Note Site Layout Planning for Daylight & Sunlight: A Guide to Good Practice (2022).

10. Wind Microclimate

Introduction

10.1. This Chapter of the ES has been prepared by Architectural Aerodynamics (ArcAero) and assesses Wind Microclimate.

10.2. This Chapter is accompanied by the following appendices:

- Appendix 10.1: Wind Microclimate Technical Report

10.3. The authors of this Chapter have the following qualifications / experiences:

	Lead Author	Reviewer
Name	Abdulhadi Faiz Arnaut	Dr Robin Stanfield
Company	Architectural Aerodynamics Limited (ArcAero)	Architectural Aerodynamics Limited (ArcAero)
Qualifications/Accreditations relevant to technical area	BEng (Hons) Mechanical Engineering	BEng (Hons) Aeronautical Engineering, MSc Aerodynamics & CFD, Engineering Doctorate
Does the practitioner hold any IEMA qualification?	No	No
Company hold IEMA QMark?	No	
Years technical experience (in technical area)	2 years	17 years
Number of EIA's delivered to date	5	50+

Assumptions and Limitations

10.4. The primary means of the current assessment is a wind tunnel-based approach. This has adopted a discrete measurement technique, where sensors are positioned in sensitive locations and those locations that are expected by veteran practitioners (and informed by preliminary CFD modelling) to experience the most significant acceleration of winds. An approach of this nature is expected to capture worst-case conditions.

10.5. CFD modelling has been employed to conduct initial assessments of an earlier version of the scheme, and to initially explore the effectiveness of wind mitigation measures. Subsequent to wind tunnel testing of the same version of the scheme, CFD has also been carried out to revisit and re-examine the performance of the Proposed Development and to assess the sensitivity of the wind conditions with respect to the changes in height of the tower and shoulder block. CFD modelling does not explicitly model the turbulence of the wind. Instead, numerical methods are used to estimate the gust wind speeds.

10.6. Unless otherwise specified, the wind tunnel model included deciduous trees in order to obtain conservative results during winter. Deciduous trees have been modelled in bare winter format.

Relevant Legislation, Policy and Guidance

Legislation

10.7. There are no legislative policies relating to the assessment of environmental wind flows in the built environment.

Policy

National Planning Policy Framework, 2024

10.8. The National Planning Policy Framework (NPFF) was revised in December 2024 by the Department of Levelling Up, Housing & Communities (DCLG). The relevant paragraphs are as follows:

10.9. Paragraph 135 of the National Planning Policy Framework states that:

"Planning policies and decisions should ensure that developments:

…

create places that are safe, inclusive and accessible and which promote health and well-being, with a high standard of amenity for existing and future users."

10.10. There is no specific planning policy guidance dealing with microclimate in terms of pedestrian comfort set out in the revised NPPF.

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

10.11. Manchester's Local Development Framework, Core Strategy Development Plan Document, Policy EN 2 relates to Tall Buildings. Paragraph 12.4 supporting this states "Tall buildings by their very nature can dominate the street scene and be highly visible over long distances. They can also have an impact on the local micro-climatic conditions, for example, by creating wind tunnels. It is for these reasons that it is considered particularly important that they are designed to the highest quality, both in terms of appearance and their impact on the functioning of surrounding space."

Guidance

National Planning Practice Guidance (NPPG), 2019

10.12. The NPPG states under 'Consider form' that, "Some forms pose specific design challenges, for example how taller buildings meet the ground and how they affect local wind and sunlight patterns should be carefully considered."

10.13. The NPPG states under 'Consider scale' that "Account should be taken of local climatic conditions, including daylight and sunlight, wind, temperature and frost pockets."

10.14. Paragraph 41 of the National Design Guidance states that a new development, "enhances positive qualities and improves negative ones. Some features are physical, including:…environment – including landscape and visual impact, microclimate, orientation, flood risk, noise, air and water quality."

10.15. Paragraph 71 of the National Design Guidance states that "Proposals for tall buildings (and other buildings with a significantly larger scale or bulk than their surroundings) require special consideration. This includes their location and siting; relationship to context; impact on local character, views and sight lines; composition - how they meet the ground and the sky; and environmental impacts, such as sunlight, daylight, overshadowing and wind. These need to be resolved satisfactorily in relation to the context and local character."

Assessment Methodology and Significance Criteria

Scenarios Tested

10.16. A physical model of the existing buildings within a 450-metre radius from the centre of the Site was constructed. The building proposals that comprise the Proposed Development and cumulative surrounding developments were also constructed, and the following scenarios were modelled in a wind tunnel:

- Scenario 1: Existing Baseline (Site as it is today)
- Scenario 2: Existing Baseline with Proposed Development
- Scenario 3: Existing Baseline with Cumulative Developments and Proposed Development
- Scenario 4: Existing Baseline with Cumulative Developments and Proposed Development with Additional Mitigation Measures (as discussed in section 10.80).

10.17. During the initial CFD testing of the various scenarios which included the Proposed Development, it was evident that the worst-case scenario was scenario 3, and this relates to the significant density of cumulative developments of scale within this scenario. This was confirmed during the subsequent wind tunnel tests and thus, it was scenario 3 that was chosen for the assessment and validation of mitigation measures (scenario 4).

10.18. After the completion of the wind tunnel testing, further CFD testing was carried out to revisit and re-examine the performance of the Proposed Development and to assess the sensitivity of the wind conditions with respect to the changes in height of the tower and shoulder block.

Overview

10.19. The microclimate of any development is the distinctive climate of a small-scale area. The weather variables in a microclimate, such as wind, may be different to the conditions prevailing over the area as a whole. This assessment considers the wind conditions that would result upon the introduction of the Proposed Development into the study area. This assessment further considers the cumulative impact following the introduction of consented developments within the surrounding area, as set out below.

10.20. The current assessment considers the study area to comprise the Site plus buildings and spaces within a radius of 480 metres from the centre of the Site. This allows for approximately 480 metres of the surrounding area to be modelled, including relevant cumulative developments.

10.21. The assessment predicts the proportion of time an area will experience wind speeds in excess of threshold values for safety as well as a series of typical activities such as walking, waiting and outdoor sitting. It can therefore be shown within the various parts of a new development proposal and the adjacent developments, whether wind conditions are suitable or unsuitable, and whether design adjustment or mitigation measures are required.

Wind Tunnel Testing

10.22. Wind tunnel testing is the most well-established and robust means of assessing the pedestrian wind microclimate. It enables the wind conditions at the Site to be quantified and classified in accordance with the widely accepted Lawson Criteria for comfort and safety, which require the assessment of mean and gust wind conditions. Gust wind conditions are those driven by the turbulent environment induced by the presence of buildings.

10.23. The principal steps within the procedure are as follows:

- Undertake a wind tunnel test to identify the degree to which the Proposed Development increases or decreases local wind speeds, per wind direction, relative to a known reference point;
- Combine wind tunnel test data with meteorological data for the area to derive an accurate picture of the expected wind microclimate at the Site; and
- Using the Lawson Criteria, compare the expected conditions with the planned suitability of conditions, and assess the exceedance (or otherwise) of the safety criteria.

10.24. Full details describing the approach to wind tunnel testing are provided within Appendix 10.1.

Computational Fluid Dynamics Modelling

10.25. As already noted within paragraph 12.5, after wind tunnel testing was completed, further CFD testing was carried out to re-examine the performance of the Proposed Development with mitigation and to assess the sensitivity of the wind conditions with respect to the changes in height of the tower and shoulder block.

10.26. Where employed, CFD modelling has employed a steady-state RANS approach. This method employs turbulence

models to approximate the magnitude of velocity fluctuations about the average wind speeds predicted, in order to derive an estimation of the effect of gusts. Full details on this approach are provided Appendix 10.1.

10.27. As with wind tunnel testing, the industry standard criteria for wind microclimate assessments, the Lawson criteria, has been employed to compare the expected conditions with the planned suitability of conditions, and assess the exceedance (or otherwise) of the safety criteria.

Site Wind Climate

10.28. Wind environment studies require that wind speed data obtained from a measurement station be transposed to the site of interest. The measurement station of choice for the assessment is that at Manchester Airport.

10.29. The wind speed history, provided by weather organisations such as the UK Met Office or the National Oceanic & Atmospheric Administration, is reformatted into the number of observations of wind speeds within each of several wind speed ranges, for each wind direction and for each month of the year. The months are grouped into seasons and a Weibull distribution is fitted to the wind speed distribution for each wind direction, for each season. The resulting weather centre wind data is transposed to open country terrain at sea-level, accounting for upwind terrain. The open country wind data is then transposed to reference height at the Site.

10.30. Full details on the derivation of the site wind climate and its modelling are provided Appendix 12.1.

Assessment Criteria

10.31. The industry standard criteria for wind microclimate assessments are commonly referred to in the UK as the Lawson criteria after one of their main authors. As with most other leading practitioners, ArcAero use the 'LDDC' (London Docklands Development Corporation) variant of the Lawson Criteria.

10.32. The LDDC variant applies a single percentage probability of exceedance of a range of wind speeds and associates different wind speeds to different types of usage. This offers a relatively simple and practical manner for the assessment of wind comfort and safety.

10.33. A wind speed of 15 m/s occurring once per year is rated as unsuitable, in terms of safety, with the potential to de-stabilise the less able members of the public including the elderly, cyclists and children.

10.34. The LDDC variant of the Lawson criteria prescribes that wind conditions are suitable for a given activity when the threshold is exceeded no more than 5% of the time. The value of 5% has been established as giving a reasonable allowance for extreme and relatively infrequent winds that are tolerable within each category.

10.35. Where certain activities are year-round, such as walking, entrance use or for waiting areas, comfort ratings are required to be met in all seasons. For more seasonal activities, such as outdoor recreation or for sitting spaces, the assessment focuses on relevant seasons where the expectation will exist for conditions to be suitable. The LDDC comfort threshold wind speed values are presented in Table 12.1.

Table 12.1 Lawson Comfort Criteria

Threshold Wind Speed [m/s]	Comfort Rating / Activity		Qualifying Comments
4	C4	Long-term sitting	Reading a newspaper and eating and drinking.
6	C3	Short-term standing / sitting	Appropriate for bus stops, window shopping and building entrances.
8	C2	Strolling	General areas of walking and sightseeing.
10	C1	Walking	Local areas around tall buildings where people are not likely to linger.

10.36. The assessment takes full account of seasonal variations in wind conditions and pedestrian activities. For example, conditions for recreational activities focus on summer (June, July, August), but also consider spring (March, April, May) and autumn (September, October, November), while conditions for pedestrian thoroughfare, access or waiting (e.g. bus stops) consider all seasons, with winter (December, January, February) usually being the critical season. The assessment is summarised in terms of suitability for various activities. The activities considered, and their relation to the Lawson comfort criteria are summarised in Table 12.2.

Table 12.2 - Suitability Assessment

Suitability	Lawson Comfort Criteria
For passage in areas where tolerance of less comfortable windy conditions is expected, e.g. in substantially built-up areas of commerce where transit from A to B is often prompt, with pedestrians unlikely to linger.	Walking in all seasons.
For access to and passage through the Development and surrounding area.	Strolling in all seasons.
For leisure uses such as a park, children's play area, etc.	Standing or short-term sitting from spring to autumn.
For pedestrian ingress/egress at a building entrance, or short periods of sitting or standing such as at a bus stop, taxi rank, meeting point, etc.	Standing or short-term sitting' in all seasons.
For long periods of sitting such as for an outdoor café.	Long-term sitting in summer.

The Study Area

10.37. The study considers all wind effects up to 480m radius from the Proposed Development and contains all features which are likely to affect the wind flow at the Site. This distance is considered sufficient to capture all wind effects on Site, as well as those effects on the surrounding area.

Source of Effect

10.38. Potentially adverse wind effects impacting the safety and comfort of the pedestrian in and around the Proposed Development which may be caused by interaction of the wind with the Proposed Development, but not necessarily, be limited to:

- Downdrafts
- Funnelling / channeling of winds
- Corner accelerations
- Significant exposure to prevailing winds

Significance Criteria

10.39. During construction, receptors are defined to be pedestrians and cyclists on the road around the Site and construction workers within the Site. During construction, sensitivity to wind is typically reduced, for reasons

expanded upon at paragraph 12.54. All receptors are considered to be medium sensitivity to the local wind microclimate conditions and are given an equal weighting.

10.40. For the scenario for the Proposed Development in place, receptors are defined to be persons on foot, seated or travelling by bicycle within the Proposed Development and surrounding areas. All receptors are equally sensitive to the presence or absence of an acceptable wind microclimate. An unacceptable microclimate exists when either an exceedance of the safety criteria exists, or when the comfort criteria is not met for the existing / planned use at a receptor. All receptors are considered to be highly sensitive to the local wind microclimate conditions and are given an equal weighting.

Determining the Magnitude of Change

10.41. Effect magnitude is defined by the severity of the deviation from the standards set out by the Lawson criteria. Exceedances of the safety criteria are deemed to be the most critical, given their potential effect on pedestrians' wellbeing, i.e. they may be unduly exposed to the potential for harm. Such effects are thus deemed to have a high impact magnitude. Where the comfort criteria are not met, i.e. where the conditions are too windy for a particular receptor to be sufficiently comfortable for existing or planned pedestrian uses and thus inconvenient but not unsafe, such effects are deemed to be of medium impact magnitude. Where the comfort criteria are marginally exceeded, to the extent that the exceedance is expected to be perceptible, but tolerable, such effects are deemed to be of low impact magnitude.

10.42. On this basis, therefore, exceedances of the safety criteria are considered to be of major magnitude, while exceedances of the comfort criteria are considered to be of moderate or minor magnitude. Where the Proposed Development is unlikely to cause a noticeable change at a receptor, despite its level of sensitivity or there is a considerable change at a receptor which is not considered to be sensitive to that change, this will be considered to be negligible.

10.43. Major and moderate effects are considered to be significant in EIA terms. Minor effects, as noted above being tolerable, are not considered to be significant.

Determining the Level of Effect

10.44. The level of effect has been informed by the magnitude of change due to the Proposed Development and the evaluation of the sensitivity of the affected receptor. The level of effect has additionally been informed using professional judgement and Table 12.3 has been a tool which has assisted with this process. For each effect, it has been concluded whether the effect is 'beneficial' or 'adverse'.

Table 12.3 - Matrix to support determining the level of effect

		Sensitivity (or value / importance)			
		High	Medium	Low	Negligible
Magnitude of change / impact	Large	Major	Moderate to Major	Minor to Moderate	Negligible
	Medium	Moderate to Major	Moderate	Minor	Negligible
	Small	Minor to Moderate	Minor	Negligible to Minor	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

10.45. The following are the significance criteria used to assess likely wind conditions as a result of the introduction of the Proposed Development:

- Major Beneficial: Any effect on wind conditions which is expected to improve pedestrian safety, namely an improvement in conditions from being considered to be unsafe to being considered safe. This is considered to be significant.
- Moderate Beneficial: Any effect on wind conditions which is expected to improve pedestrian comfort from unsuitable to suitable for planned activities. This is considered to be significant.
- Minor Beneficial: Any effect on wind conditions which is expected to improve pedestrian comfort from unsuitable to marginal / tolerable for planned activities, or from marginal / tolerable to suitable for planned activities. This is not considered to be significant.
- Negligible: Any effect that does not alter the suitability of existing wind conditions with respect to planned activities. This is not considered to be significant.
- Minor Adverse: Any effect on wind conditions which worsens pedestrian comfort from suitable to marginal / tolerable for planned activities, or from marginal / tolerable to unsuitable for planned activities. This is not considered to be significant.
- Moderate Adverse: Any effect on wind conditions that worsens pedestrian comfort from suitable to unsuitable for planned activities. This is considered to be significant.
- Major Adverse: Any effect on wind conditions adversely affecting pedestrian safety, namely a deterioration in conditions from being considered to be safe to being considered unsafe. This is considered to be significant.

10.46. The duration of the effect has been assessed as either 'short-term', 'medium-term' or 'long-term'. Short-term is considered to be up to 1 year, medium-term is considered to be between 1 and 10 years and long-term is considered to be greater than 10 years.

Determining Significance

10.47. Significance has only been concluded for residual effects (i.e. following the identification of secondary mitigation).

Baseline Conditions

Scenario 1: Existing Baseline

10.48. The Proposed Development is located entirely on 'Plot 9B', bound to the west by Medlock Street; to the north by land at Plot 9A; to the east by land at Plot 10A and to the south by Hulme Street and land at Plot 11.

10.49. Table 12.4 below shows which committed developments have been included within the baseline assessment.

Table 12.4 - Committed Developments considered within the baseline assessment.

Development Name	Planning Reference
Plot 9a	132600/FO/2021
First Street South	125573/FO/2019
Metropolitan University Science and Engineering Building	125799/FO/2019
Havelock	129081/FO/2021
Barclay House	118033/P3OPA/2017
Viadux 1	115871/FO/2017

10.50. Plot 10b (136170/FO/2023) was not included in the baseline assessment. This is because it was not known whether this scheme was under construction at the time of wind tunnel testing or later CFD. Plot 10b is considered separately in section 10.54 and has been assessed qualitatively using results of the baseline and other simulations.

10.51. The results for the existing baseline scenario are presented graphically within Figure 4.1 and Figure 4.2 for worst-

seasonal and summer conditions, respectively, within Appendix 12.1.

Safety

10.52. Wind conditions throughout the existing site and surrounding areas satisfy the safety criteria for wind.

Comfort

10.53. Overall, existing wind conditions are suitable are suitable for existing uses. One minor exception is the thoroughfare northeast of the site (location 93) where the wind conditions marginally exceed comfort criteria, being suitable for walking in winter and suitable for strolling for the rest of the year.

Plot 10b

10.54. It is expected that if Plot 10b were to be included within the baseline scenario that wind conditions within the Site and surrounding areas (including Plot 10b itself) would continue to meet the safety and comfort criteria.

Identification and Evaluation of Likely Significant Effects

Construction Phase

10.55. During the demolition and construction works, there would be potential for wind to blow into and across open areas of the Site with the potential to inconvenience site workers and passers-by. Prior to the introduction of on-site mitigation measures, any temporarily elevated wind conditions within the site would be experienced only by able-bodied professionals who are able to tolerate these speeds, and who would typically be engaged in less sensitive activities. Additionally, there would be appropriate health and safety measures implemented (through a Construction Environmental Management Plan (CEMP)) to ensure that the construction workers are adequately protected.

Operational Phase

10.56. The results for the Existing Baseline with Proposed Development scenario are presented graphically within Figure 4.3 to Figure 4.4 and Figure 4.5 to Figure 4.6 for worst-seasonal and summer conditions, respectively, within Appendix 12.1.

Scenario 2: Existing Baseline with Proposed Development

Safety

10.57. With the introduction of the proposed development within existing surrounds, the safety criteria are substantially met throughout the study area. Where so, this represents a negligible effect and is therefore not significant.

10.58. Exceptions occur along Hulme Street (locations 16, 24, 34, 53 and 68). These represent major adverse effects which are significant.

Comfort

10.59. With the introduction of the Proposed Development, throughfares within the Site remain suitable for their intended uses. This represents a negligible effect and is therefore not significant.

10.60. Upon the introduction of the Proposed Development within existing surrounds, wind conditions at entrances are generally suitable for strolling. This includes entrances north of Proposed Development (locations 15, 42 & 51). The main entrance southeast of Proposed Development entrance (location 24) is suitable for walking throughout the year. Exceedances at these entrances represent moderate adverse effects which are significant.

10.61. The wind conditions on the terrace of the south-eastern shoulder block are suitable for short-term sitting or better in summer, thus acceptable for general recreational uses. This represents a negligible effect and is therefore not significant.

10.62. Within the surrounding area, wind conditions are substantially suitable for their intended uses. Where so, this represents a negligible effect of the Proposed Development.

10.63. Exceptions occur in the following areas:

- Thoroughfare locations along Hulme Street (locations 16, 27, 34, 58, 68, 109) being suitable for fast walking in winter and strolling in other seasons. At these locations conditions meet the wind speed threshold for strolling between 90-95% of the time during winter. This therefore represents a minor-to-moderate adverse effect of the Proposed Development.
- The entrance to Plot 9A (location 49) being suitable for walking or better throughout the year. These conditions would ideally be better, though being an entrance to a substation that would be accessed by workers, comfort levels at this position are less critical. This is therefore judged to represent a minor adverse effect which is not significant.
- The entrance to Plot 9A (location 107) is suitable for strolling or better throughout the year. These conditions would ideally be better, though being an entrance to a service area that would be accessed by workers, comfort levels at this position are less critical. This is therefore judged to represent a minor adverse effect which is not significant.
- The waiting area close to Plot 11 (location 100) is suitable for strolling during winter, and for short-term standing / sitting in other seasons. This is a modest exceedance of targeted comfort conditions and therefore represents a minor adverse effect which is not significant.

Plot 10b

10.64. It is expected that the inclusion of Plot 10b (excluded from the existing surrounding context, as explained within paragraph 10.46) into the Proposed Development within existing surrounds scenario that wind conditions would overall be similar, with broadly enhanced shelter provided to Plot 10b and thus some generally calmer conditions, with some minor deteriorations towards the southeast end of Plot 10b that do not materially alter the overall suitability.

Cumulative Effects

10.65. Table 12.5 below shows which cumulative developments have been included within the baseline assessment.

Table 12.5 - Cumulative Developments considered within the Existing Baseline with cumulative developments and Proposed Development

Plot 10b, First Street (House of Social)	136170/FO/2023
Great Jackson Plot F	132199/FO/2021
Deansgate South	129406/FO/2021
Vision	111003/FO/2016/C1
Plot 10a, First Street	136043/FO/2023
One City Road	128002/FO/2020
One Medlock Street	135419/FO/2022
Park Place (Plot G, Great Jackson Street)	129273/FO/2021
Student Castle	121252/FO/2018
Great Jackson Street - Crown Street Plot D (The Lighthouse)	137227/FO/2023
Great Jackson Street Plot C and E (The Green)	137226/FO/2023
Viadux Two	139715/FO/2024
Apex Tower	133172/FO/2022
Plot 11 Block C First Street South	138831/FO/2023
Alpha Place	120113/FO/2018
Brownfield	128433/FO/2020

10.66. At the time of the current assessment, Hotspur House (138805/FO/2023) was not part of the cumulative development scenario as it was not known to have received planning approval. Being 240 metres north-northeast of the Proposed Development, the Hotspur House scheme is too distant to give rise to any interactions that would have a material effect on conditions in the vicinity of the Proposed Development, while if anything, being north-northeast of the Proposed Development, any cumulative effects on Hotspur House would be minor,

and would be limited to a small beneficial effect as a result of a modest increase to the level of shelter provided for this commonly occurring (south-southwest) wind direction.

10.67. Cumulative developments St George's Place (123261/FO/2019), Bridgewater House Great Jackson Street (134694/FO/2022), Great Northern Warehouse (135565/FO/2022), Upper and Lower Campfield (138377/FO/2023), Land Bounded By Upper Brook Street, Cottenham Street & Kincardine Road (137399/FO/2023), Land Between Upper Brook Street, Kincardine Road And Grosvenor Street (137401/FO/2023), The Junction (126780/FO/2020), and Curlew Student Hulme (130387/FO/2021) were not included in the assessment scenario as they are situated outside the assessment radius of 480 meters and thus are too far way to have an effect on the wind conditions within assessment area.

10.68. As such, any cumulative developments that were not modelled within the assessment are expected to have an immaterial effect on the Existing Baseline with cumulative developments and Proposed Development scenario.

10.69. The results for Existing Baseline with cumulative developments and Proposed Development scenario are presented graphically within Figure 4.7 to Figure 4.8 and Figure 4.9 to Figure 4.10 for worst-seasonal and summer conditions, respectively, within Appendix 12.1.

Scenario 3: Existing Baseline with Cumulative Developments and Proposed Development

Safety

10.70. With the introduction of the proposed development within cumulative surrounds, the safety criteria are substantially met throughout the study area. Exceedances, prior to mitigation. occur in the following readily accessible areas:

- Along Hulme and Newcastle Street (locations 21, 24, 27, 29, 53, 58, 78 and 86)
- Along Medlock Street (Location 59)
- South of Plot 9a (Location 49)

10.71. These represent major adverse effects which are significant.

10.72. Exceedances, prior to mitigation, also occur on the central reservation along Medlock Street (locations 26, 97). The central reservation is present on Medlock Street to separate opposing flows of traffic moving north and south along the road. It is not a pedestrian or cycling thoroughfare, nor a pedestrian island for people seeking to cross Medlock Street. A signalised crossing point is located at the southern end of Medlock Street and a further signalised crossing point is to be installed by MCC under a s278 agreement related to the nearing completion Plot 9a development to the north. Pedestrians or cyclists should not therefore use this area to either walk along or cross Medlock Street, rather they should use the signalised junctions and designated pavements and marked cycleways (which are one and the same) on the two sides of the road or the innermost traffic lanes of Medlock Street, all of which meet the safety criteria. As such this represents a negligible effect and is therefore not significant.

Comfort

10.73. With the introduction of the Existing Baseline with cumulative developments and Proposed Development scenario, thoroughfares within the Site are suitable for their intended uses. This represents a negligible effect and is therefore not significant.

10.74. The primary entrance (Location 24) to the Proposed Development is too windy for its intended usage throughout the year. This represents a moderate adverse impact and is therefore significant.

10.75. Secondary entrances to the southwest and northwest (Locations 36, 51) of the Proposed Development are marginally too windy for their intended usage in winter. This represents a minor adverse effect (as these are entrances that will be used infrequently) and is not significant.

10.76. Other secondary entrances are suitable for their intended usages. This represents a negligible effect and is therefore not significant.

10.77. With the introduction of cumulative surroundings, wind conditions on the elevated terrace have improved to

become suitable for long-term sitting in summer and thus are suitable for recreational use. This represents a negligible effect and is therefore not significant.

10.78. Within the surrounding area, wind conditions are substantially suitable for their intended uses. Where so, this represents a negligible effect of the Proposed Development. Exceptions occur in the following areas:

- Thoroughfares along Medlock Street (Locations 59, 64, and 96) - marginal exceedances of strolling conditions during winter represent minor adverse effects that are not significant.
- Thoroughfares / cycleways within Newcastle and Hulme Street (21, 27, 29, 30, 35, 44, 53, 58, 78, and 86) - modest exceedances of strolling conditions during winter represent effects ranging from minor (not significant) to moderate adverse (significant).
- Secondary entrances to Plot 9a and Plot 10 (Locations 49, and 107) - suitable for thoroughfare representing a moderate adverse effect that is significant.
- The waiting area nearby to Plot 11 (Location 100) - suitable for strolling, representing a moderate adverse effect that is significant.

Mitigation Measures

Construction Phase

10.79. Mitigation measures are not currently proposed for the construction phase of the Proposed Development.

Operational Phase

10.80. The proposed development has been assessed with and without additional wind mitigation measures via wind tunnel testing. The additional mitigation measures are shown in Figure 2.1 and Figure 2.2 in Appendix 12.1. The wind mitigation measures introduced at the ground level are as follows:

- Canopy, 2.5 metres wide, placed 4 metres above ground, 75% solid
- Canopy, 2 metres wide, placed 4 metres above ground, 75% solid
- Wind baffles, 1.8 metres wide, 3 metres tall, 50% solid
- Hedges, 0.5 metres tall, 1 metre wide, placed on a planter, 0.5 metres tall, 1 metre wide
- Hedges, 2 metres wide, up to 1.2 metres tall
- 4 × 4-metre-tall evergreen trees
- Fins, 0.5 metres wide, 1.8 metres tall
- Hedges, 0.5 metres wide, up to 1.2 metres tall
- Recessed main entrance

Residual Effects

Construction Phase

10.81. There is generally a negligible effect of the Development during construction and that effect is not significant.

Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (Temporary/Permanent)
Negligible effects	All	None	N/A	Negligible effects

Operational Phase

10.82. The results for Existing Baseline with cumulative developments and Proposed Development with mitigation scenario are presented graphically within Figure 4.11 to Figure 4.12 and Figure 4.13 to Figure 4.14 for worst-seasonal and summer conditions, respectively, within Appendix 12.1.

Scenario 4: Existing Baseline with Cumulative Developments and Proposed Development with Additional Mitigation Measures

Safety

10.83. Following the introduction of the Existing Baseline with cumulative developments and Proposed Development with mitigation scenario, the safety criteria are met throughout the majority of the study area. Exceedances occur on the central reservation along Medlock Street (locations 26, 97). As noted under paragraph 10.72 this is not a pedestrian or cyclist thoroughfare or crossing point, who should use the signalised crossing points and designated pavements and marked cycleways (which are one and the same) on the two sides of the road or the innermost traffic lanes of Medlock Street, all of which meet the safety criteria. Furthermore, these exceedances on the central reservation on Medlock Street, which only exist in the cumulative scenario, are only anticipated to occur between 3 and 6 hours per annum. As such this represents a negligible residual effect and is therefore not significant.

Comfort

10.84. Following the introduction of the Existing Baseline with cumulative developments and Proposed Development with mitigation scenario, all Site thoroughfares are suitable for their intended uses. This represents a negligible residual effect and is therefore not significant.

10.85. Additional CFD modelling reflecting conditions for the Proposed Development (discussed further in paragraphs 12.87 and 12.88) with a more substantial recess has identified that with this, the primary entrance is suitable for short-term standing or better and thus for its intended use. This represents a negligible effect and is therefore not significant.

10.86. A secondary entrance to the northwest (Location 51) of the Proposed Development remains windy for its intended usage in winter. This represents a minor adverse effect (as this is an entrance that will be used infrequently) and is not significant.

10.87. Wind conditions on the elevated terrace are suitable for long-term sitting during summer and are suitable for recreational use. This represents a negligible effect and is therefore not significant.

10.88. Within the surrounding area, wind conditions are substantially suitable for their intended uses. Where so, this represents a negligible effect of the Proposed Development. Exceptions occur at the following areas:

- Thoroughfares along Medlock Street (locations 59, 64, and 96) - these are minor exceedances of strolling conditions in winter (meeting the threshold wind speed ~93% of the time) and thus represent minor adverse residual effects that are not significant.
- Thoroughfares / cycleways within Newcastle and Hulme Street (locations 21, 29, 30, 35, 53, and 86) - these are minor exceedances of strolling conditions in winter (meeting the threshold wind speed ~92% of the time) and thus represent minor adverse residual effects that are not significant.
- Secondary entrances to Plot 9a (locations 49, and 107) - these conditions would ideally be better, though being entrances to a substation / service area that would be accessed by workers, comfort levels at this position are less critical. This is therefore judged to represent a minor adverse effect which is not significant.
- Waiting area nearby to Plot 11 (location 100) - this represents a moderate adverse effect and is therefore significant. This location would meet the threshold wind speed approximately 90% of the time (vs a target of 95%) in worst-seasonal conditions. In spring and autumn, this location would meet the threshold for 94% and 93% respectively.

Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (Temporary/Permanent)
Exceedance of safety criteria	Within Hulme Street and Newcastle Street	Wind baffles, 1.8 metres wide, 3 metres tall, 50% solid Fins, 0.5 metres wide, 1.8 metres tall Hedges, 2 metres wide, up to 1.2 metres tall Hedges, 0.5 metres wide, up to 1.2 metres tall 4 × 4-metre-tall evergreen trees	Details submitted as part of this planning submission	Negligible, permanent
Exceedance of safety criteria	Along Medlock Street adjacent to Site	Canopy, 2.5 metres wide, placed 4 metres above ground, 75% solid Canopy, 2 metres wide, placed 4 metres above ground, 75% solid Wind baffles, 1.8 metres wide, 3 metres tall, 50% solid Hedges, 0.5 metres tall, 1 metre wide, placed on a planter, 0.5 metres tall, 1 metre wide	Details submitted as part of this planning submission	Negligible, permanent
Exceedance of safety criteria	South of Plot 9A	Canopy, 2.5 metres wide, placed 4 metres above	Details submitted as part of this planning submission	Negligible, permanent

Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (Temporary/Permanent)
		ground, 75% solid Canopy, 2 metres wide, placed 4 metres above ground, 75% solid Wind baffles, 1.8 metres wide, 3 metres tall, 50% solid Hedges, 0.5 metres tall, 1 metre wide, placed on a planter, 0.5 metres tall, 1 metre wide		
Exceedance of safety criteria	Medlock Street central reservation	Canopy, 2.5 metres wide, placed 4 metres above ground, 75% solid Canopy, 2 metres wide, placed 4 metres above ground, 75% solid Wind baffles, 1.8 metres wide, 3 metres tall, 50% solid Hedges, 0.5 metres tall, 1 metre wide, placed on a planter, 0.5 metres tall, 1 metre wide	Details submitted as part of this planning submission	Negligible, permanent
Exceedance of comfort criteria	Main entrance to Proposed Development	Recessed main entrance	Details submitted as part of this	Negligible, permanent

Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (Temporary/Permanent)
			planning submission	
Exceedance of comfort criteria	Secondary entrances to the southwest and northwest of the Proposed Development	Canopy, 2.5 metres wide, placed 4 metres above ground, 75% solid Canopy, 2 metres wide, placed 4 metres above ground, 75% solid Wind baffles, 1.8 metres wide, 3 metres tall, 50% solid Hedges, 0.5 metres tall, 1 metre wide, placed on a planter, 0.5 metres tall, 1 metre wide	Details submitted as part of this planning submission	Minor adverse, permanent
Exceedance of comfort criteria	Thoroughfares along Medlock Street	Canopy, 2.5 metres wide, placed 4 metres above ground, 75% solid Canopy, 2 metres wide, placed 4 metres above ground, 75% solid Wind baffles, 1.8 metres wide, 3 metres tall, 50% solid Hedges, 0.5 metres tall, 1 metre wide, placed on a	Details submitted as part of this planning submission	Minor adverse, permanent

Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (Temporary/Permanent)
		planter, 0.5 metres tall, 1 metre wide		
Exceedance of comfort criteria	Thoroughfares / cycleways within Newcastle Street & Hulme Street	Wind baffles, 1.8 metres wide, 3 metres tall, 50% solid Fins, 0.5 metres wide, 1.8 metres tall Hedges, 2 metres wide, up to 1.2 metres tall Hedges, 0.5 metres wide, up to 1.2 metres tall 4 × 4-metre-tall evergreen trees	Details submitted as part of this planning submission	Minor adverse, permanent
Exceedance of comfort criteria	Secondary entrances to Plot 9A	Canopy, 2.5 metres wide, placed 4 metres above ground, 75% solid Canopy, 2 metres wide, placed 4 metres above ground, 75% solid Wind baffles, 1.8 metres wide, 3 metres tall, 50% solid Hedges, 0.5 metres tall, 1 metre wide, placed on a planter, 0.5 metres tall, 1 metre wide	Details submitted as part of this planning submission	Minor adverse, permanent

Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (Temporary/Permanent)
Exceedance of comfort criteria	Waiting area nearby to Plot 11	Wind baffles, 1.8 metres wide, 3 metres tall, 50% solid Fins, 0.5 metres wide, 1.8 metres tall Hedges, 0.5 metres wide, up to 1.2 metres tall	Details submitted as part of this planning submission	Moderate adverse, permanent

Further CFD Modelling

10.89. CFD was employed to examine determine the anticipated performance of the Proposed Development, with the mitigation measures embedded into the scheme, following the confirmation of the final heights of the tower and shoulder blocks. This exercise indicated that with these changes to the proposed development, it is expected that the safety criteria within the site and readily accessible surrounding areas will continue to be met. This represents a negligible effect and is therefore not significant.

10.90. Wind comfort conditions are expected to remain broadly unchanged relative to those observed within the WTT results. Generally speaking, therefore, this indicates that conditions will broadly be acceptable for thoroughfare, with some exceptions mainly along Medlock Street and Hulme Street, and some windier entrances. However, with a more deeply recessed main entrance (equivalent to location 24 from the wind tunnel results) conditions here are improved and predicted to be suitable for short-term standing or better, and therefore for comfortable ingress / egress.

Monitoring

10.91. No monitoring of the wind microclimate is recommended.

Reference List

10.92. This ES Chapter has been prepared in reference to the following:

- Lawson, T.V. The determination of the wind environment of a building complex before construction. Bristol : University of Bristol, Department of Aeronautical Engineering, 1990.

11. Climate Change

Introduction

11.1. This Chapter of the ES has been prepared by Ridge and Partners LLP and asseses the impact of the Proposed Development on climate change and the climate resilience of the Proposed Development.

11.2. This Chapter is accompanied by the following appendices:

- Stage 2 Embodied Carbon Assessment produced by Element
- Energy Statement produced by Futrserv

11.3. The authors of this Chapter have the following qualifications and experience.

Technical Competence in Ridge LLP		
	Lead Author	Reviewer
Name	Susie Sidley	Sarah Chipchase
Company	Ridge & Partners	Ridge & Partners
Qualifications/Accreditations relevant to technical area	BSc Environmental Science MA Environment & Business Chartered Environmentalist (CEnv)	BSc Geography MSc EIA, Auditing & EMS
Does the practitioner hold any IEMA qualification?	Yes- Full Member of IEMA	Yes – IEMA Practitioner
Company hold IEMA QMark?	No	
Years technical experience (in technical area)	20	23
Number of EIA's delivered to date	8	/

11.4. The chapter describes the methods used to assess the impacts, the baseline conditions currently existing at the site and surroundings, the potential direct and indirect impacts of the Proposed Development airising in relation to climate change. It considers the impact of the Proposed Development on climate change (i.e. the nature and magnitude of greenhouse gas emissions) as well as the vulnerability of the Proposed Development itself to climate change, the mitigation measures required to prevent, reduce, or offset the impacts and the residual impacts.

11.5. When discussing 'carbon' in relation to climate change, this is a term used to cover all greenhouse gas emissions

and is measured in terms of CO_2 equivalent (CO_2eq).

Assumptions and Limitations

11.6. This section sets out the assumptions made in the assessment including potential limitations to the information used.

Embodied Carbon Assessment

11.7. The assessment is based on a 60-year life span for the Proposed Development in accordance with RICS Whole Life Carbon guidance.

11.8. The One Click LCA predictions of embodied impacts conducted in One Click LCA software, by their very nature, cannot be exact. It is not possible to track all the impacts associated with a product or service back through history. One Click LCA software has been built and tested to enable informed decisions when comparing design options. Generic environmental impact coefficients do not necessarily correspond to those of individual brands of the same product or service due to differences within industries and in the way these products and services are delivered.

11.9. Due to the early stage of the modelling, design detail is limited and will be considered further as the scheme progresses through to the Technical Design Stage, A number of assumptions were consequently used in order to complete the baseline assessment. The RICS Professional Statement 2nd Edition, has provided reasonable assumptions, based on UK average industry standard practice, which must be used during early design phase whole life carbon assessments (WLCAs) that are to act as baselines for progressive reporting. This data will be refined during later project phases and replaced by more comprehensive and product specific information as it becomes available.

11.10. Assumptions were made to further supplement the information provided by the design team. These are based on on reasonable industry standards such as RICS Professional Statement 2nd Edition, CIBSE Guide G, and the One Click LCA modelling software. The assessment assumptions are outlined in Table 3.1 of the First Street LCA Report produced by Element.

11.11. Due to the nature of Whole Life Carbon Assessments, certain assumptions and default values can be used, to fill any gaps throughout the early design stages. Therefore, the service life of the materials inputted have been based on the latest guidance from the RICS Professional Statement, which in practice may vary from these values and could well be extended, thereby reducing the overall environmental impact associated with Life Cycle Module B4 – Replacement.

Operational Carbon Assessment

11.12. While a sample calculation has been undertaken by Futurserv (the Mechanical & Electrical Engineers for the Proposed Development) to assess compliance of the scheme against Part L 2021 of the Building Regulations, detailed operational energy calculations have not yet been undertaken. It should be noted that as the design progresses, more detailed assessments will be undertaken, and this result may vary. Actual energy performance may be different to the estimations provided, depending on both detailed design and operational use of the Proposed Development. Unregulated energy use could vary when the Proposed Development is operational, but it is not possible to accurately predict this energy use at this stage.

Climate Change Resilience Assessment

11.13. The assessment if the impacts of climate change on the Proposed Development are based on a number of assumptions about the future effects of climate change. The climate change predictions used within the climate resillience assessment are based on the most recent UK Climate Projections published in 2018 (UKCP18) developed by the UK Climate Impacts Programme (UKCIP). These are based on the assumption of a high emissions scenario (worst case).

Relevant Legislation, Policy and Guidance

Legislation

Climate Change Act 2008

11.14. The Climate Change Act 2008 committed the UK to an 80% reduction in carbon emissions relative to the levels in 1990, to be achieved by 2050. In June 2019, secondary legislation was passed that extended that target to require that the UK reduce all greenhouse gas emissions to net zero by 2050 relative to 1990 levels. In April 2021, the Government confirmed its intention to ratify 'The Sixth Carbon Budget' which effectively requires a 78% reduction in UK territorial emissions between 1990 and 2035.

Policy

National Planning Policy

11.15. Section 14 of the National Planning Policy Framework 2024 (NPPF) specifically addresses the challenge of climate change. Paragraph 164 states that: 'New development should be planned for in ways that:

11.16. avoid increased vulnerability to the range of impacts airising from climate change. When new development is brought forward in areas which are vulnerable, care should be taken to ensure that risks can be managed through suitable adaptation measures, including through the planning of green infrastructure; and

11.17. can help to reduce greenhouse gas emissions, such as through its location, orientation and design. Any local requirements for the sustainability of buildings should reflect the Government's policy for national technical standards'.

Places For Everyone Joint Development Plan

11.18. The Places for Everyone Joint Development Plan (2024) is the document for Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Tameside, Trafford and Wigan. With respect to climate change and sustainability considerations, the following policies are included within the Places for Everyone Joint Development Plan.

Policy JP-S2: Carbon and Energy

11.19. This policy states that the aim of delivering a carbon neutral Greater Manchester no later than 2038, with a dramatic reduction in greenhouse gas emissions, will be supported through a range of measures including:

- Promoting the retrofitting of existing buildings with measures to improve energy efficiency and generae renewable and low carbon energy, heating and cooling;
- Promoting the use of life cycle cost and carbon assessment tools to ensure the long-term impacts from development can be captured;
- Taking a positive approach to renewable and low carbon energy schemes, particularly schemes that are led by, or meet the needs of local communities;
- Increasing the range of nature-based solutions including carbon sequestration through the restoration of peat-based habitats, woodland management, tree-planting and natural flood management techniques;
- There is an expectation that the new development will, unless it can be demonstrated that it is not practicable or financially viable;
- Be net zero carbon which applies:
- From adoption – to regulated operational carbon emissions;
- From 2028 – to all emissions ‘ in construction’.

11.20. From 2025 development should also calculate and minimise carbon emissions from unregulated emissions alongside regulated emissons. Development proposals should set out how this has been achieved in an energy statement in accordance with the energy hierarchy, which in order of importance seeks to:

- Minimise energy demand;

- Maximise energy efficiency;
- Use renewable energy;
- Use low carbon energy; and
- Utilise other energy sources.

11.21. From 2025 any residual carbon emissions that cannot be fully mitigated on-site should be offset, in agreement eith the relevant local planning authority through a financial contribution to a carbon offset fund. As an interim measure, development should be consistent with the 2022 Part L Building Regulations unless superseded by changes to building regulations and/or national or local planning policies.

11.22. Development will be expected to incorporate adequate electric vehicle charging points, in line with Part S of the Building Regulations, unless superseded by relevant Local Plan policies, to future proof for the likely long-term demand, taking account of the potential maximum energy demand for the site;

11.23. Where practicable, development will prioritise connection to a renewable energy/heating/cooling network in the first instance or a low carbon energy heating/heating/ cooling network that is adaptable to non-fossil fuels at a later date;

11.24. Residential developments will be expected to achieve energy demand reductions in terms of space heat demand; hot water energy demand and the delivery of on-site renewable energy generation.

11.25. For renewable energy generation priority should be given to PV installation where technically feasible, alternative technologies will be appropriate where the equivalent generation is evidenced.

11.26. Applications should include a detailed energy statement to demonstrate via site relevant evidence how the development has sought to maximise reductions in carbon emissions in line with relevant policy targets, including the minimisation of overheating risks and appropriate measures for post occupancy evaluation.

11.27. Whole life cycle emissions should be considered where possible. Districts may set out specific carbon emission reduction and energy demand targets within Local Plans.

Policy JP-S4: Flood Risk and the Water Environment

11.28. This policy states that Greater Manchester is located within a complex hydrological network that extends into surrounding districts and beyond. This means that individual areas cannot be viewed in isolation, as rainfall and activities in one place can have significant impacts on the water environment in other locations. Climate change is expected to significantly increase peak river flows and surface water run-off as a result of more intense rain events, potentially placing many more properties at risk in the future unless flood defences, drainage and run-off management are improved. A coordinated catchment-wide approach to all types of flood risk will be required to address these challenges and minimise potential harm to people and property, including actions upstream of Greater Manchester.

11.29. Sustainable Drainage System (SuDS) schemes can provide appropriate solutions to addressing both flood risk and water quality issues and are mandatory for major development unless clear evidence indicates that they would be inappropriate. Development proposals should achieve greenfield run-off rates where possible, depending on site conditions. Alternative surface water discharge rates can be set out in district local plans to reflect local circumstances and evidence. In addition to the general need to improve water quality, the Environment Agency has defined source protection zones for groundwater sources such as wells, boreholes, and springs used for public drinking water supply. The control of potentially contaminating activities is particularly important in these locations.

11.30. It is important that water is conserved and efficenctly used as much as possible to help build water resilience to periods of drought; avoid over abstraction; reduce carbon emissions from water treatment and disposal; and protect river and wetland habitats from degradation. All new homes have to meet mandatory national standards set out in Building Regulations (of 125 litres/person/day). Where there is a clear local need, the government's Housing Optional Technical Standards paragraph 013 and 014 set out that local authorities may also consider tighter water efficiency requirements for new homes (110 litres a day) to help manage water demand.

Policy JP-P1 Sustainable Places

11.31. This policy states that the aim to become one of the most liveable city regions in the world, consisting of a series of beautiful, healthy and varied places, each having key attributes that all development, wherever appropriate, should be consistent with. The list of attributes includes:

- Resilient, capable of dealing with major environmental events
- Adaptable, able to respond easily to varied and changing needs and technologies
- Durable, being built to last and using robust materials that reflect local character, weather well and are easily maintained.
- Resource-efficient with:
  - Low carbon footprint
  - Efficient use of land
  - Minimised use of new materials
  - High levels of recycling

Manchester Core Strategy

11.32. The Manchester Core Strategy (2012) is the Adopted Development Plan for Manchester City Council. With respect to climate change and sustainability considerations, the following policies are included within the Manchester Local Plan Core Strategy (2012). Relevant extracts are provided below.

Core Strategy Policy T1: Sustainable Transport

11.33. This policy seeks to deliver high quality integrated transport system to encourage a 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 which:

a. Improve choice by developing alternatives to car
b. Promote regeneration and economic vitality by relieving traffic congestion
c. Improve access to transport services and facilities
d. Improve pedestrian routes and the pedestrian environment
e. Improve and develop further Manchester's cycle network
f. Facilitate modes of transport that reduce carbon emissions

Policy EN4 - Reducing CO2 Emissions by Enabling Low and Zero Carbon Development

11.34. This policy requires development to 'follow the principle of the Energy Hierarchy, being designed:

g. to reduce the need for energy through design features that provide passive heating, natural lighting and cooling.
h. to reduce the need for energy through energy efficient features such as improved insulation and glazing
i. to meet residual energy requirements using low or zero carbon energy generating technologies'

11.35. It also states that:

j. 'Wherever possible new development and retrofit projects, including energy generation plants, must be located, and designed in a manner that allows advantage to be taken of opportunities for low and zero carbon energy supplies.
k. Where possible new development and retrofit projects will be used as a mechanism to help improve energy efficiency and provide low and zero carbon energy supplies to existing buildings.

l. Where appropriate new development and retrofit projects will be required to connect to and/or make contributions to low or zero carbon energy schemes and/or to incorporate provision to enable future connection to any existing / potential decentralised energy schemes.

m. The use of building materials with low embodied carbon in new development & refurbishment schemes.'

Policy EN5: Strategic Areas for low and zero carbon decentralised energy infrastructure

11.36. This policy sets a requirement for key developments to consider being part of or providing an anchor to a new local energy network.

11.37. Within specific strategic areas (including the Oxford Street corridor) new development, regeneration and retrofit projects, will be expected to take place in the context of more detailed proposals for decentralised low and zero carbon energy infrastructure in the form of energy proposals plans. The Council will work with all relevant stakeholders, which may include developers, landowners, residents, community groups, private sector partners, utilities companies, neighbouring authorities, and other public sector bodies, as appropriate, to bring forward such plans.

11.38. Where investment or development is being undertaken into or adjacent to a public building/asset or district heating network, full consideration shall be given to the potential role that these can have in providing an anchor load within a decentralised energy network or in creating opportunities for CO2 reduction funded by contributions.

Policy EN6: Target Framework for CO2 reductions from low or zero carbon energy supplies

11.39. This policy sets a requirement for residential developments of 10 or more units to achieve a minimum performance target as shown in the table below unless this can be shown not to be viable.

11.40. The policy states that 'This should be demonstrated through an energy statement, submitted as part of the Design and Access Statement. Such a statement will be expected to set out the projected regulated energy demand and associated CO2 emissions for all phases of the development'.

11.41. Guidance on what the energy statement should contain and how to decide which target applies to a development proposal is given in Appendix A of 'Manchester's Local Development Framework, Core Strategy Development Plan Document, Adopted 11th July 2012'.

Policy EN 8 Adaptation to Climate Change

11.42. This policy requires all new developments 'to be adaptable to climate change in terms of the design, layout, siting & function of both buildings & associated external spaces. In achieving developments which are adaptable to climate change developers should have regard to the following, this is not an exhaustive list:

n. Minimisation of flood risk by appropriate siting, drainage, and treatment of surface areas to ensure rainwater permeability

o. Reduction in urban heat island effect through the use of Green Infrastructure such as green roofs, green walls, increased tree cover and waterways

p. The need to control overheating of buildings through passive design

q. The opportunity to provide linked and diverse green space to enhance natural habitats which will assist species adaptation

11.43. Developers will be permitted to use green infrastructure elements such as green roofs, green walls, street trees and waterways to contribute to compliance with CO2 mitigation under Policy EN6, subject to sufficient evidence to quantify their contribution to compliance'.

Policy EN 14 Flood Risk

11.44. This policy states that 'In line with the risk-based sequential approach contained within PPS25, development should be directed away from sites at the greatest risk of flooding, and towards sites with little or no risk of flooding; this should take account of all sources of flooding identified in the Manchester-Salford-Trafford Strategic Flood Risk Assessment (SFRA).'

r. 'In addition to the requirements for site-specific Flood Risk Assessments (FRAs) set out in PPS25, an appropriate FRA will also be required for all development proposals, including changes of use, on sites greater than 0.5ha within C

s. itical Drainage Areas (CDAs) and Canal Hazard Zones identified in the SFRA.'

t. 'All new developments should minimise surface water run-off, including through Sustainable Drainage Systems (SUDS) and the appropriate use of Green Infrastructure.'

u. 'Developers should have regard to the surface water run-off rates in the SFRA User Guide. In CDAs, evidence to justify the surface water run-off approach / rates will be required.'

v. 'The City of Manchester contains many sections of rivers which are culverted or 'hidden'; where these are indicated in the SFRA beneath the proposed development site, further investigation will be required and the development proposal should take this into account; where feasible and appropriate development should seek to open u

w. culverted/hidden rivers to reduce the associated flood risk and danger of collapse, taking advantage of opportunities to enhance biodiversity and Green Infrastructure.'

Guidance

IEMA (2022) Assessing Greenhouse Gas Emissions and Evaluating their Significance (2nd Edition)

11.45. This document is the key guidance for assessing the impact of a project on climate change. It reflects the 2019 amendment to the UK's legally binding Climate Change Act 2008 in response to the Paris Agreement, setting a new and challenging target to reduce UK GHG emissions to net zero by 2050, accounting for residual emissions which are offset. The guidance confirms that all emissions contribute to climate change, however specifically in the EIA context it provides relative significance descriptions to assist assessments. It sets out levels of significance which are not solely based on whether a project emits GHG emissions alone, but how the project makes a relative contribution towards achieving a science-based 1.5°C aligned transition towards net zero.

IEMA (2020) EIA Guide to: Climate Change Resilience & Adaptation

11.46. This document provides guidance for considering the vulnerability of a project to climate change (climate change resilience). It provides a framework for the effective consideration of climate change resilience and adaptation in the EIA process.

RIBA (2021) RIBA 2030 Climate Challenge v2

11.47. The Royal Institute of British Architects (RIBA) have developed the RIBA 2030 Climate Challenge document which sets out voluntary performance targets which outline a challenging path to achieve the reductions needed so that the UK building stock can achieve net zero carbon by 2050. The voluntary operational energy and water use and embodied carbon performance targets that are set out in the 2030 Climate Challenge doucment have been developed by the RIBA consultation with experts across the industry. The targets consider the latest recommendations from the Green Construction Board and are aligned with other built environment professional bodies.

11.48. Within the RIBA 2030 Climate Challenge document, operational energy is measured in terms of energy efficiency rather than just GHG emissions and is expressed in KWh/m^2/year. Embodied GHG emissions (also referred to as Embodied Carbon) are expressed in terms of CO_2eq. It is important to note that the RIBA Embodied Carbon targets are based on the full life cycle embodied carbon emissions (covering stages A1-A5, B1-B5 and C1-C4 including carbon sequestration (biogenic carbon)).Figure X.1 shows these stages and how they apply to different types of assessments.

11.49. The RIBA 2030 Climate Challenge targets for residential buildings are shown in Error! Reference source not f

ound. below.

Table11.6 RIBA 2030 Climate Challenge CO_2eq targets for residential buildings

RIBA Sustainable Outcomes Metrics	Business as Usual	2025 Targets	2030 Targets
Operational Energy kWh/m^2/y	120kWh/m^2/y	<60kWh/m^2/y	<35kWh/m^2/y
Embodied Carbon (A1-A5, B1-B5 and C1-C4) kgCO_2e/m^2	1200kgCO_2e/m^2	<800kgCO_2e/m^2	<625 kgCO_2e/m^2

LETI (2020) Climate Emergency Design Guide

11.50. The Low Energy Transformation Initiative (LETI) is a voluntary network of built environment professionals, working together to put the UK and the planet on the path to a zero-carbon future. The LETI Climate Emergency Design Guide outlines how new buildings should be designed to ensure the UK's climate change targets are met. It covers five key areas: operational energy, embodied carbon, the future of heat, demand response and data disclosure. The Guide sets out requirements for four key building archetypes (small scale residential, medium/large scale residential, commercial offices, and schools).

11.51. The LETI targets for operational energy and upfront embodied carbon for residential buildings over 6 storeys are shown in Error! Reference source not found. below. It is important to note that the LETI Embodied Carbon t argets are based on the upfont embodied carbon emissions only (covering stages A1-A5).

Table10.7 LETI Climate Emergency Design Guide Targets

Metric	2020 Design Target	2030 Design Target
Operational Energy kWh/m^2/y	35kWh/m^2/y	35kWh/m^2/y
Upfront Embodied Carbon kgCO_2e/m^2 (A1-A5)	<500kgCO_2e/m^2	<300 kgCO_2e/m^2

UK Net Zero Carbon Buildings Standard Pilot Version

11.52. The Pilot version of a new UK New Net Zero Carbon Buildings Standard (UKNZCBS) was published in September 2024. This includes 'technical details on how a building should meet the standard, including what limits and targets it needs to meet, the technical evidence needed to demonstrate this and how it should be reported. In the future, projects will be able to verify that a project conforms to the standard.'

11.53. The UKNZCBS includes specific limits for each year from 2025 to 2050 for upfront carbon and operational energy. The UKNZCBS also uses energy intensity as a metric for operational energy (kWh/m^2GIA/yr) and CO_2eq for upfront carbon.

Assessment Methodology and Significance Criteria

Scenarios Tested

11.54. The baseline for the assessment is Scenario 1 (existing Site (as of September 2024)). The baseline is a scenario whereby the Proposed Development does not proceed, and the Site remains as it is. The Site is currently a vacant parcel of land and therefore it is assumed that there are no GHG emissions associated with the Site in the baseline scenario. It is proposed that Scenario 1 (Existing Baseline as the Site is today) is therefore used for this assessment to enable a clear indication of the climate change impacts of the Proposed Development.

11.55. The assessment considers Scenario 2 (Existing Baseline with Proposed Development).

11.56. Scenario 3 (Existing Baseline with cumulative developments and Proposed Development) and Scenario 4

(Existing site (Baseline) with committed developments) will not be assessed. Additionally, Scenario 5 (Existing site (Baseline) with Proposed Development and committed developments) will not be assessed. The assessment of cumulative effects in conjunction with other devlopments in the area presents a challenge from a climate change standpoint. All carbon emissions contribute to climate change and therefore all sources of these emissions result in cumulative effects, regardless of location.

11.57. It is unreasonable for the purposes of a planning application to quantify all sources of emissions from other third-party developments for the following reasons:

x. The emissions from other developments fall under Scope 3 which do not form part of the assessment under the methodology outl

y. ned.

z. Large technical data requirements from other developments which are not accessible.

aa. A significant interlinking scope of assessment that would exceed that expected of the planning application for any one development.

bb. It is not feasible to undertake a high-level chemical assessment to analyse likely synergistic impacts between different emissions from varying developments.

cc. Complicated, unpredictable chemical reactions driven by atmospheric, climatic, and behavioural factors beyond the applicant's control.

11.58. For the Climate Change Resilience assessment, no inter-project cumulative effects are anticipated on the basis that climate change adaptation effects and impacts are specific to the development. While climate change will impact other developments, it is not within the scope of this work to assess that.

The Study Area

11.59. The study area for the assessment of the impact on climate change is the boundary of the Proposed Development but also encompasses emissions arising outside of this boundary, including the embodied emissions associated with construction materials, and the emissions associated with the transportation of materials and workers to Site and removal of waste from Site.

11.60. The study area for the climate change resilience assessment is the Proposed Development itself.

Source of Effect

11.61. In accordance with the EIA regulations this chapter addresses:

dd. The impact of th

ee. Proposed Development on climate change, in line with IEMA (2022) Assessing Greenhouse Gas Emissions and Evaluating their Significance.

ff. The vulnerability of the Proposed Development to climate change (climate change resilience) in line with IEMA (2020) EIA Guide to: Climate Change Resilience & Adaptation

Data Sources

11.62. Given that the scheme is at an early stage of design there is insufficient detail to undertake a full Whole Life Carbon (WLC) assessment to accurately determine the GHG emissions associated with the project. However, this can be estimated using high level Life Cycle Assessment (LCA) modelling using estimated materials and assumptions in line with typical benchmarks, initial energy modelling by the MEP Consultant and use of predicted travel data from the transport assessment. In line with IEMA Guidance (2022) a reasonable worst-case approach will be undertaken.

11.63. The following information has been used to inform the assessment:

gg. Energy Statement, including calculations to demonstare energy performance against the Building Regulations Part L (BRUKL) undertaken by Futurserv

hh. Embodied carbon calculations by Element using One Click LCA software, as detailed in the Life Cycle Assessment Report.

ii. Transport Assessment by SLR.

Significance Criteria

Impact of the Proposed Development on Climate Change

11.64. IEMA guidance has been used as a basis for assessing the significance of both construction and operational impacts. This guidance states that: 'The Crux of significance'…'is not whether a project emits GHG emissions, nor even the magnitude of GHG emissions alone, but whether it contributes to reducing GHG emissions relative to a comparable baseline consistent with a trajectory towards net zero by 2050'.

11.65. Significance should therefore be measured against how the Proposed Development's whole life GHG emissions align with the UK's net zero carbon compatible trajectory.

Receptors

11.66. The receptor for assessment of the impact of the Proposed Development on climate change is the global climate. The receptor is considered to be of high sensitivity.

Magnitude

11.67. Magnitude is determined in accordance with 13.2 which is based on the IEMA (2022) Guide and references the RIBA 2030 Climate Challenge v2 (2021) and the UK Net Zero Carbon Buildings (UKNZCB) Pilot Standard (2024).

Table 11.1 Impact on climate change - determining magnitude

Magnitude of Impact	Criteria for assessing impact
Major Adverse	The project's GHG impacts are not mitigated or are only compliant with do-minimum standards set through regulation, and do not provide further reductions required by existing local and national policy for projects of this type. A project with major adverse effects is locking in emissions and does not make a meaningful contribution to the UK's trajectory towards net zero. For example, the project's GHG emissions are in line with the 'Business as Usual' thresholds set out within the RIBA 2030 Climate Challenge or are above the 2025 limits within the UKNZCB Standard.
Moderate Adverse	The project's GHG impacts are partially mitigated and may partially meet the applicable existing and emerging policy requirements but would not fully contribute to decarbonisation in line with local and national policy goals for projects of this type. A project with moderate adverse effects falls short of fully contributing to the UK's trajectory towards net zero. For example, the project's GHG emissions are in line with the '2025' targets set out within the RIBA 2030 Climate Challenge or the 2025 limits within the UKNZCB Standard.
Minor Adverse	The project's GHG impacts would be fully consistent with applicable existing and emerging policy requirements and good practice design standards for projects of this type. A project with minor adverse effects is fully in line with measures necessary to achieve the UK's trajectory towards net zero. For example, the project's GHG emissions are in line with the '2030' targets set out within the RIBA 2030 Climate Challeng or the 2030 limits within the UKNZCB Standard.
Negligible	The project's GHG impacts would be reduced through measures that go well beyond existing and emerging policy and design standards for projects of this type, such that radical decarbonisation or net zero is achieved well before 2050. A project with negligible effects provides GHG performance that is well 'ahead of the curve' for the trajectory towards net zero and has minimal residual emissions. For example, the project's GHG emissions are in line with the 2035 limits within the UKNZCB Standard.

Significance

11.68. The signficance of an environmental impact is determined by the interaction of magnitude and sensitivity, whereby the impacts can be positive or negative. The Impact Significance Matrix is set out in Table 11.3. Negligable and minor effects are considered not significant.

Table 11.2 Impact on climate change - significance matrix

	Sensitivity		
Magnitude	High	Moderate	Low
Major	Major Adverse/Beneficial	Major - Moderate Adverse -Beneficial	Moderate - Minor Adverse -Beneficial
Moderate	Major Adverse/Beneficial	Moderate Adverse – Beneficial	Minor Adverse/Beneficial
Minor	Minor Adverse/Beneficial	Minor Adverse/ Beneficial	Negligible

Negligible	Negligible	Negligible	Negligible

Climate Change Resilience Assessment

11.69. To assess the vulnerability of the Proposed Development to climate change, a climate change resilience assessment in line with the Environmental Impact Assessment Guide to: Climate Change Resilience & Adaptation (IEMA, 2020) has been undertaken using the following approach.

Receptors

11.70. Receptor groups will be identified, and their sensitivity will be determined based on the susceptibility of the receptor (e.g. ability to be affected by a change – low, medium or high) and the vulnerability of the receptor (i.e. potential exposure to a change – low, medium or high).

jj. Low susceptibility: receptor has the ability to withsta

kk. d/not be altered much by the projected changes to the existing/prevailing climatic factors (e.g. retain much of its original function and form).

ll. Moderate susceptibility: receptor has some limited ability to withstand/not be altered by the projected changes to the existing/prevailing climatic conditions.

mm. High susceptibility: receptor has no ability to withstand/not be substantially altered by the projected changes to the existing/prevailing climatic factors.

nn. Low vulnerability: Climatic factors have little influence on the receptors.

oo. Moderate vulnerability: receptor is dependent on some climatic factors but able to tolerate a range of conditions.

pp. High vulnerability: receptor is directly dependent on existing/prevailing climatic factors and reliant on these specific existing climate conditions continuing in future or only able to tolerate a very limited variation in climate conditions.

11.71. **Error! Reference source not found.** identifies how the sensitivity of receptors is determined.

Table 11.8 Climate Resilience - sensitivity of receptors

	1 (Low vulnerability)	2 (Moderate vulnerability)	3 (High vulnerability)
1 (Low susceptibility)	1 (Low sensitivity)	2 (Low sensitivity)	3 (Moderate sensitivity)
2 (Medium susceptibility)	2 (Low sensitivity)	4 (Moderate sensitivity)	6 (High sensitivity)
3 (High susceptibility)	3 (Moderate sensitivity)	6 (High sensitivity)	9 (High sensitivity)

Magnitude

11.72. Magnitude will be based on a combination of likelihood (the chance of the effect occurring over the lifespan of the Proposed Development if the risk is not mitigated) and consequence (which will reflect the geographical extent of the effect or the number of receptors affected, the complexity of the effect, degree of harm to those

affected and the duration, frequency and reversibility of effect).

qq. Low likelihood: The event may occur once or on limited occasions during the lifetime of the development.

rr. Moderate likelihood: The event may occur several times during the lifetime of the development.

ss. High likelihood: The event will occur on multiple occasions during the lifetime of the development.

tt. Low consequence: Minor disruption to business operations / no risk to building occupants / no damage to buildings / infrastructure.

uu. Moderate consequence: Some disruption to building operations / slight risk to building occupants / slight damage to buildings / infrastructure.

vv. High consequence: Major disruption to business operations / risk to building occupants / significant damage to buildings / infrastructure.

11.73. Magnitude will be determined in accordance with **Error! Reference source not found.**

Table 11.9 Climate Resilience - determining magnitude

	1 (Low consequence)	2 (Moderate consequence)	3 (High consequence)
1 (Low likelihood)	1 (Minor magnitude)	2 (Minor magnitude)	3 (Moderate magnitude)
2 (Moderate likelihood)	2 (Minor magnitude)	4 (Moderate magnitude)	6 (Major magnitude)
3 (High likelihood)	3 (Moderate magnitude)	6 (Major magnitude)	9 (Major magnitude)

Significance

11.74. The significance of an environmental impact is determined by the interaction of magnitude and sensitivity, whereby the impacts can be positive or negative. The impact Significance Matrix is set out in **Error! Reference source not found.**.

Table 11.10 Climate resilience - determining significance

Magnitude	High	Sensitivity Moderate	Low
Major	Major Adverse/Beneficial	Major - Moderate Adverse -Beneficial	Moderate - Minor Adverse -Beneficial
Moderate	Major Adverse/Beneficial	Moderate Adverse – Beneficial	Minor Adverse/Beneficial
Minor	Minor Adverse/Beneficial	Minor Adverse/Beneficial	Negligible
Negligible	Negligible	Negligible	Negligible

Baseline Conditions

Impact of the Proposed Development on climate change

11.75. In relation to the impact of the Proposed Development on climate change, i.e, CO_2eq emissions, the baseline is a scenario whereby the Proposed Development does not proceed, and the site remains as it is. The Site is currently a vacant parcel of land and therefore it is assumed that there are no GHG emissions associated with the Site baseline scenario. This will reflect a worse case scenario. It is proposed that Scenario 1 (Existing baseline as the Site is today) is therefore used for this assessment.

Climate Change Resilience

Current Climate

11.76. The existing baseline for the climate change resilience assessment is the current climate in the location of the Proposed Development. Historic climate data obtained from the Met Office website (accessed December 2024) recorded by the closest meteorological station to the Proposed Development (Woodford Station) for the 30-year climate periods of 1981-2010 and 1991-2020 is summarised in the **Error! Reference source not found.** and s hows an increase in the average annual maximum daily temperature.

Table 11.11 Historic Climate data for Woodford Station

Climate Period	1981-2010		1991-2020	
Climatic factor	Month	Figure	Month	Figure
Average annual maximum daily temperature (°C)	-	13.2°C	-	13.6°C
Warmest month on average (°C)	July	20.2°C	July	20.7°C
Coldest month on average (°C)	January	6.9°C	January	7.1°C
Mean annual rainfall levels (mm)	-	867.05mm	-	868.40mm
Wettest month on average (mm)	October	98.83mm	December	96.98mm
Driest month on average (mm)	February	51.46mm	March	52.53mm

11.77. The Met Office baseline climate averages for the NW England and N Wales District (Met Office website, accessed December 2024) identify gradual warming between 1961 and 2010. Information on mean maximum annual temperatures (°C) and average annual rainfall (mm) is summarised in **Error! Reference source not found.**.

Table 11.12 Historic Climate data for NW England and N Wales District

Climate Period	Mean maximum annual temperatures (°C)	Mean annual rainfall (mm)

1961-1990	11.75°C	1260.19mm
1971-2000	12.04°C	1275.09mm
1981-2010	12.35°C	1304.79mm
1991-2020	12.66°C	1337.93mm

11.78. The Met Office website (accessed December 2024) confirms that past severe weather events in the last 5 years have included record breaking heatwaves, severe flooding, severe winter weather with significant snowfalls, and storm and high wind events.

Future Climate

11.79. UK Climate Projections published in 2018 (UKCP18) have been developed by the UK Climate Impacts Programme (UKCIP) to provide projections for future climate scenarios and trends. **Error! Reference source not found.**below p rovides a summary of predications for summer and winter changes by the 2070s (Met Office, 2019).

Table 11.13 Future Climate estimates under a high emissions scenario (England)

Summer rainfall change	Winter precipitation change	Summer temperature change	Winter temperature change
57% drier to 3% wetter	2% drier to 33% wetter	1.1 °C warmer to 5.8 °C warmer	0.7 °C warmer to 4.2 °C warmer

Identification and Evaluation of Likely Significant Effects

Construction Phase

Impacts on Climate Change

11.80. Construction of the Proposed Development will result in CO_2eq emissions associated with construction transport (i.e. HGV movements and the transportation of the workforce) and emissions associated with the use of energy on site for construction activities.

11.81. Construction works will also result in carbon emissions associated with the embodied carbon within construction materials. Embodied carbon is the total greenhouse gas emissions generated to produce a built asset. This includes emissions caused by extraction, manufacture/processing, transportation and assembly of every product and element in an asset. It may also include the maintenance, replacement, deconstruction, disposal and end-of-life aspects of the materials and systems that make up the asset (UK Green Building Council, 2017).

11.82. Element have undertaken an Embodied Carbon Assessment for the Proposed Development. The modelling results are based on Stage 2 design information and assumed material quantities where necessary to provide a best estimate of the scheme's impact at this stage.

11.83. In line with IEMA Guidance, mitigation for reducing the embodied carbon emissions have already been incorporated into the design of the Proposed Development. This includes:

- Basing the design on the principles of adopting the most efficient structural design with minimal material usage as this typically results in the most cost effective and lowest embodied carbon solution.
- Based on the Embodied Carbon Life Cycle Assessment, the superstructure options appraisal demonstrated that replacing the 25% GGBS concrete columns with 40% GGBS concrete columns would

offer a carbon reduction. This option has been discounted at design stage, but further investigations will take place during technical design stage to explore this option. In addition, two substructure options replacing generic steel rebar with 96% recycled content rebar, and 30% GGBS with 50% GGBS will be investigated further at technical design following the embodied carbon results demonstrating a carbon reduction.

11.84. All available information was collected from the team to form the most accurate picture of the proposed scheme as possible, however it is acknowledged that some elements for the Proposed Development rely on more detailed information being developed by the team during the upcoming design stages. The headline results are reported in Error! Reference source not found..

Table 11.14 Embodied CO_2eq emissions

Embodied Carbon (Modules A-C, excluding B6 & B7; including sequestered carbon)	
Plot 9b, First St	**621** KgCO2e/m2

11.85. The report also sets out the embodied carbon impacts for the scheme across the study period's 60-year lifetime (Modules A-C, excluding B6 & B7; including sequestered carbon) for each building element. This demonstrates that the greatest contributor to the emissions is the superstructure elements, accounting for approximately 88% of all emissions.

11.86. The most contributing materials towards the embodied carbon total are concrete and steel, due to high energy production processes.

11.87. To put the above results into context the Proposed Development meets the RIBA 2030 Target for residential buildings (625kgCO_2eq/m^2). This demonstrates that the Proposed Development is in line with measures necessary to achieve the UK's trajectory towards net zero, and therefore equates to a Minor Adverse Effect.

Operational Phase

Impact on Climate Change

11.88. The operation of the Proposed Development will result in CO_2eq emissions associated with energy used within the buildings and CO_2eq emissions associated with the transport of people to and from the buildings.

Operational Energy

11.89. The operation of the Proposed Development will result in carbon emissions associated with energy usage for heating, cooling, ventilation, lighting, and electrical equipment, which will therefore result in an increase in emissions compared to the baseline scenario. There will also be carbon emissions associated with unregulated energy, e.g. plug-in equipment such as white goods and small power.

11.90. An Energy Statement has been prepared by Futurserv (2024). This sets out the embedded mitigation measures which are already included within the Proposed Development to maximise the energy efficiency of the Proposed Development in accordance with the Energy Hierarchy.

11.91. Measures incorporated into the design include:

ww. Passive design measures, including material specification designed to limit heat loss, air tightness target of 2.5 m3/hr/m2 @50Pa

xx. Active design measures to minimse energy consumption and CO_2 emissions, including:

Increased hot water generating efficiencies

Reduced Standing losses from pipes and cylinders

Efficient LED lighting with improved controls

Efficient and low energy motors in pumps and fans

Efficient heat recovery in relevant systems

Combined natural and mechanical ventilation systems

yy. Use of Low and Zero Carbon Technology, including

Air source heat pumps used for domestic hot water

Use of on site Photovoltaic (PV) panels to generate electricity

11.92. The measures listed above have been incorporated to minimise energy consumption and exceed the requirements of the Building Regulations Part L 2021 (adopted 2022).

11.93. Energy Use Intensity (EUI) is the benchmark used within the RIBA 2030 Climate Challenge. Given the stage of design, a detailed calculation of EUI has not been undertaken. Instead, the EUI has been estimated using BRUKL calculations which have been undertaken to demonstrate compliance with the Building Regulations Part L 2021.

11.94. The BRUKL can be used to establish an indicative EUI figure based on Part L methodology. The resultant summary table from the BRUKL certificate (**Error! Reference source not found.**) illustrates the predicted energy use for R egulated (Heating, Cooling, Auxiliary, Lighting & Hot Water) and Unregulated (equipment) energy.

Table 11.15 Energy Consumption by End Use, taken from the BRUKL document

Energy Consumption by End Use [kWh/m^2]

	Actual	Notional
Heating	10.59	9.69
Cooling	0.37	0.11
Auxiliary	2.67	2.38
Lighting	5.03	6.54
Hot water	6.46	6.04
Equipment*	14.31	14.31
TOTAL**	**25.12**	**24.75**

* Energy used by equipment does not count towards the total for consumption or calculating emissions.
** Total is net of any electrical energy displaced by CHP generators, if applicable.

11.95. The total predicted EUI for the Proposed Development is therefore 39.43 kWh/m2/yr (the regulated energy (25.12kWh/m2/yr), plus the unregulated energy (14.31 kWh/m^2/yr).

11.96. The EUI figure for the Proposed Development comfortably achieves the 2025 target for domestic buildings as set out within the RIBA 2030 Climate Challenge (60kWh/m^2/yr) but is sightly over the 2030 target (35 kWh/m2/yr). This therefore equates to a Moderate Adverse Effect.

Operational Transport

11.97. The Proposed Development is 'car-free' and no car parking spaces are proposed. All trips generated are for servicing, access or taxis. Furthermore, the Site occupies a highly sustainable location, accessible by a range of sustainable travel modes, and well-placed to facilitate access on foot to a wide variety of everyday facilities, amenities, employment locations, leisure destinations and transport hubs.

11.98. Given the location of the site within Manchester City Centre and the high levels of accessibility the Transport Assessment predicts that most trips to and from the Site by residents will be on foot. While there will be some operational CO_2eq emissions associated with taxis and deliveries, these are considered to be negligible.

11.99. Therefore, the operation of the Proposed Development will result in non-significant CO_2eq emissions associated with operational transport. Given the Proposed Development is 'car free' it is in line with a trajectory towards

net zero carbon emissions. It is therefore predicted that there will be a negligible impact on climate change in terms of operational transport.

Impact of Climate Change on Proposed Development

11.100. Given the relatiely short timescale for the construction phase and its temporary nature, it is not considered that there will be any significant effects associated with the construction phase in relation to the climate change resilience assessment. This assessment considers the operation of the completed development only.

11.101. Mitigation measures for reducing the potential impact of climate change on the development have been incorporated into the design. These are as follows:

zz. Private drainage system will be designed in accordance with current design guidance and standards and attenuation will be provided along with potential SUDS measures such as bio-retention.

aaa. The use of SUDS measures, with controlled release of surface water to the combined sewer network will help to mitigate any potential flood risk impact from the development on the public sewer system.

bbb. Finished site levels will be engineered to provide positive drainage where required and prevent ponding.

ccc. Gradients of the hardstanding areas, where possible, will be designed to fall away from buildings such that any overland flow resulting from extreme events would be channelled away from entrances.

ddd. Surface water drainage discharge will be restricted. The new development proposed site surface water drainage system will be designed to maintain surface water flows below ground for up to and including the 1 in 100-year return period as a minimum. Flows above this and up to 100 year plus 45% allowance for climat

eee. change will beretained safely within the site.

fff. Structural engineers will ensure design of buildings and roofs mitigated against the risk of high winds (in line with Eurocodes).

ggg. Intake and exhaust positions protected from direct wind impact and water ingress where possible

hhh. Overheating analysis completed, the project is designed to comply with Part O

iii. High insulation levels will mean heating load is low.

jjj. Designed in line with CIBSE guidance (-40C)

kkk. External fabric to be designed as a weathertight structure.

lll. Roof and external wall materials will have a design life of a minimum of 25 years.

mmm. Low water use sanitary fittings specified where appropriate to minimise water demand.

nnn. Pulsed output water meters to be installed on the water supply so that occupants can monitor their water usage

ooo. Structural engineers to ensure design of foundations is mitigated against the risk ground shrinkage

ppp. Roof and external wall materials will have a design life of a minimum of 25 years.

qqq. Roofs fully designed for snow loads and to avoid ponding (blue roofs to take account of rainfall) (in line with Eurocodes).

11.102. **Error! Reference source not found.** identifies the potential impacts associatd with climate change, the receptors a ffected (and the sensitivity of those receptors), the magnitude of the impact (likelihood*condequence of impact) and the overall significance (based on mitigation already incorporated).

Table 11.16 Climate Resilience Assessment

	Impact	Embedded Mitigation	Receptor	Likelihood	Consequence	Magnitude	Significance
Increased flooding	Rising Flood levels can cause inundation of basements and ground floor accommodation. Infrastructure could also be affected. The development site falls wholly within Flood Zone 1, with the temporary contractor compound loctaed in Flood Zone 2. The site is typically at very low (<0.1%) risk of surface water flooding. See the FRA (ROC 2024).	Private drainage system will be designed in accordance with current design guidance and standards and attenuation will be provided along with potential SUDS measures such as bio-retention. The use of SUDS measures, with controlled release of surface water to the combined sewer network will help to mitigate any potential flood risk impact from the development on the public sewer system. Finished site levels will be engineered to provide positive drainage where required and prevent ponding. Gradients of the hardstanding areas, where possible, will be designed to fall away from buildings such that any overland flow resulting from extreme events would be channelled away from entrances. Surface water drainage discharge will be restricted. The new development proposed site surface water drainage system will be designed to maintain surface water flows below ground for up to and including the 1 in 100-year return period as a minimum. Flows above this and up to 100 year plus 45% allowance for climate change will be retained safely within the site.	Buildings & infrastructure (Moderate sensitivity)	1	3	Moderate	Moderate
Increased likelihood of storms (including high winds)	High winds can result in a risk of structural damage to buildings and reduction of mechanical ventilation capacity.	Structural engineers will ensure design of buildings and roofs mitigated against the risk of high winds (in line with Eurocodes). Intake and exhaust positions protected from direct wind impact where possible.	Buildings and infrastructure (Moderate sensitivity)	1	2	Minor	Minor –Not Significant
	Risk to the safety of building occupants from doors slamming.	None	Building occupants (Moderate sensitivity)	2	3	Moderate	Moderate

	Impact	Embedded Mitigation	Receptor	Likelihood	Consequence	Magnitude	Significance
More extreme heat and cold events, and greater temperature variation	Extremes of temperature may result in building services being unable to maintain thermal comfort levels.	Overheating analysis completed, the project is designed to comply with Part O	Building occupants (Moderate sensitivity)	2	2	Moderate	Moderate
	Extreme cold events may lead to plant failure due to freezing or defrost cycles	High insulation levels will mean heating load is low. Designed in line with CIBSE guidance (-4^0C)	Buildings and infrastructure (Moderate sensitivity)	1	2	Minor	Minor –Not Significant
	Landscape planting may be affected.	None	Planting (Moderate sensitivity)	2	2	Moderate	Moderate
Wetter winters (including increased	Increased moisture and rain may cause damage to building fabric and services.	External fabric to be designed as a weathertight structure. Roof and external wall materials will have a design life of a minimum of 25 years. Intake and exhaust positions will be designed to protect from water ingress where possible.	Buildings and infrastructure (Moderate sensitivity)	1	2	Minor	Minor –Not Significant

	Impact	Embedded Mitigation	Receptor	Likelihood	Consequence	Magnitude	Significance
	Increased rate of run off risks system inundation leading to localised flooding. The development site falls wholly within Flood Zone 1, with the temporary contractor compound loctaed in Flood Zone 2. The site is typically at very low (<0.1%) risk of surface water flooding. See the FRA (ROC 2024).	Private drainage system will be designed in accordance with current design guidance and standards and attenuation will be provided along with potential SUDS measures such as bio-retention. The use of SUDS measures, with controlled release of surface water to the combined sewer network will help to mitigate any potential flood risk impact from the development on the public sewer system. Finished site levels will be engineered to provide positive drainage where required and prevent ponding. Gradients of the hardstanding areas, where possible, will be designed to fall away from buildings such that any overland flow resulting from extreme events would be channelled away from entrances. Surface water drainage discharge will be restricted. The new development proposed site surface water drainage system will be designed to maintain surface water flows below ground for up to and including the 1 in 100-year return period as a minimum. Flows above this and up to 100 year plus 45% allowance for climate change will beretained safely within the site.	Buildings & infrastructure (Moderate sensitivity)	1	3	Moderate	Moderate
More drought events (including reduced summer rainfall)	Reduced rainfall may decrease the amount of water available for development.	Low water use sanitary fittings specified where appropriate to minimise water demand. Pulsed output water meters to be installed on the water supply so that occupants can monitor their water usage.	Building occupants (Moderate sensitivity)	1	2	Minor	Minor-Not Significant
	Drying soils could result in structural damage to buildings. Soilscape England describes the soils as ‘slowly permeable seasonally wet acid loamy and clayey soils with impeded drainage’.	Structural engineers to ensure design of foundations is mitigated against the risk of ground shrinkage.	Buildings and infrastructure (Moderate sensitivity)	1	3	Moderate	Moderate

	Impact	Embedded Mitigation	Receptor	Likelihood	Consequence	Magnitude	Significance
	Landscape planting may be affected.	None	Planting (Moderate sensitivity)	2	2	Moderate	Moderate
Warmer summers and increased solar radiation	Increased temperatures within buildings may result in building services being unable to maintain thermal comfort levels.	Overheating analysis completed, the project is designed to comply with Part O	Building occupants (Moderate sensitivity)	2	2	Moderate	Moderate
	Solar radiation may reduce the durability of roof and external wall materials.	Roof and external wall materials will have a design life of a minimum of 25 years.	Buildings and infrastructure (Moderate sensitivity)	2	2	Moderate	Moderate
	Drying soils could result in structural damage to buildings. Soilscape England describes the soils as 'slowly permeable seasonally wet acid loamy and clayey soils with impeded drainage'.	Structural engineers to ensure design of foundations is mitigated against the risk of ground shrinkage.	Buildings and infrastructure (Moderate sensitivity)	1	3	Moderate	Moderate
	Landscape planting may be affected.	None	Planting (Moderate sensitivity)	2	2	Moderate	Moderate

	Impact	Embedded Mitigation	Receptor	Likelihood	Consequence	Magnitude	Significance
More precipitation e.g. rain and snow	Increased rate of run off risks system inundation leading to localised flooding. The development site falls wholly within Flood Zone 1, with the temporary contractor compound located in Flood Zone 2. The site is typically at very low (<0.1%) risk of surface water flooding. See the FRA (ROC 2024).	Private drainage system will be designed in accordance with current design guidance and standards and attenuation will be provided along with potential SUDS measures such as bio-retention. The use of SUDS measures, with controlled release of surface water to the combined sewer network will help to mitigate any potential flood risk impact from the development on the public sewer system. Finished site levels will be engineered to provide positive drainage where required and prevent ponding. Gradients of the hardstanding areas, where possible, will be designed to fall away from buildings such that any overland flow resulting from extreme events would be channelled away from entrances. Surface water drainage discharge will be restricted. The new development proposed site surface water drainage system will be designed to maintain surface water flows below ground for up to and including the 1 in 100-year return period as a minimum. Flows above this and up to 100 year plus 45% allowance for climate change will beretained safely within the site.	Buildings & infrastructure (Moderate sensitivity)	1	3	Moderate	Moderate
	Damage to building fabric and services	Roofs fully designed for snow loads and to avoid ponding (blue roofs to take account of rainfall) (in line with Eurocodes).	Buildings and infrastructure (Moderate sensitivity)	1	2	Minor	Minor –Not Significant
Subsidence or ground movement	Subsidence / ground movement could result in structural damage to buildings. Soilscape England describes the soils as ‘slowly permeable seasonally wet acid loamy and clayey soils with impeded drainage’.	Structural engineers to ensure design of foundations is mitigated against the risk ground shrinkage.	Buildings and infrastructure (Moderate sensitivity)	1	3	Moderate	Moderate

11.103. The Climate Change Resilience Assessment identifies that climate change is likely to result in some hazards that may impact upon the development, but that mitigation has been incorporated which will reduce the likelihood, and thus significance of these.

Cumulative Effects

11.104. Regarding Type 1 cumulative effects, there are a number of potential interactions between the future effects of climate change and other ES topics, for example, in relation to Flood Risk and Transport. Where necessary, reference has been made to the relevant chapter/ supporting documentation.

11.105. In relation to climate change resilience, no Type 2 cumulative effects are anticipated on the basis that climate change impacts are specific to the development and will not result in impacts to neighbouring developme

11.106.

In relation to the impact of the Proposed Development on climate change, cumulative effects have not been assessed. All CO_2eq emissions contribute to climate change and therefore it could be argued that all sources of these emissions result in cumulative effects. It is unreasonable for the purposes of a planning application to quantify all sources of emissions from other third-party developments for the following reasons:

rrr. The emissions from other developments fall under Scope 3[1], which do not form part of the assessment under the methodology outlined.

sss. Large technical data requirements from other developments which are not accessible.

ttt. A significant interlinking scope of assessment that would exceed that expected of planning application for any one development.

uuu. It is not feasible to undertake a high-level chemical assessment to analyse likely synergistic impacts between different emissions from varying developments.

vvv. Complicated, unpredictable chemical reactions driven by atmospheric, climatic, and behavioural factors beyond the applicant's control.

Mitigation Measures

Construction Phase

11.107. As part of the Stage 2 Embodied Carbon Assessment, mitigation measures for reducing the construction stage carbon emissions have been identified and embedded into the design. There are investigations to be undertaken at technical design to reduce embodied carbon emissions further. Therefore, no further mitigation is required because adequate mitigation measures are already in place.

Operational Phase

Operational Energy-Related Emissions

11.108. As part of the Energy Statement, mitigation measures for reducing the operational carbon emissions have already been identified and embedded into the design.

11.109. It is also recommended that a TM54: Operational Energy Performance assessment is conducted, in order to accurately assess the operational energy of the development, and to align with current best practice operational energy guidance and targets. This may lead to further opportunities to reduce the operational energy use, however, it is not known whet

11.110. er this will improve the EUI significantly to enable a change in the effect identified.

Operational Transport-Related Emissions

11.111. As part of the Transport Statement and Travel Plan, mitigation measures for reducing the operational carbon emissions have already been identified and embedded into the design

[1]Note- Scope 3 encompasses indirect carbon emissions

Climate Change Adaptation

11.112. Embedded mitigation measures have been incorporated into the design of the development to ensure it is climate change resilient.

11.113. Further mitigation to be included is as follows:

- Additional dynamic thermal modelling will be undertaken at the detailed design stage to assess the design for a projected climate change environment using predicted future weather files in line with TM59 requirements. Ventilation & heating plant selection will be based on projected future temperatures.
- Facility for cooling capacity increase to be included in infrastructure.
- Use of anti-door slam products to reduce impact of high winds
- Planting designed to thrive across extremes of temperature and precipitation events (native or climate resilient).

Residual Effects

Construction Phase

11.114. Initial modelling of embodied carbon emissions has been undertaken which shows a likely Minor Adverse effect on climate change, which is not significant.

Operational Phase

Impact of the Proposed Development on Climate Change

11.115. In line with best practice guidance, mitigation measures for reducing operational energy have already been incorproated into the design of the scheme, therefore residual effects are as per those previously identified. This is summaried in Error! Reference source not found..Error! Reference source not found.

Table 11.17. Summary of Significant Effects on Climate Change - Operational Phase

Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitgiation	Post Mitigation Residual Effect – Significance and Duration (Temporary/Permenant)
Operational energy related CO2eq emissions	Global Climate	Implementation of Energy Strategy to achieve the target Completion of a TM54 Operational Energy Performance Assessment	Building Design As Built energy modelling	Moderate Adverse Significant Permanent

Impact of Climate Change on the Proposed Development

11.116. In line with best practice guidance, several mitigation measures for minimising hazards that may impact upon the Proposed Development as a result of climate change have already been incorporated into the design. The additional mitigation measures proposed in Section 3.3 reduces some of the Moderate Adverse effects to Minor effects, and this is reflected in Error! Reference source not found..

*Table 11.*18 *Summary of Significant Effects of Climate Change on the Proposed Development - Operational Phase*

Potential Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (Temporary/Permenant)
Rising Flood Levels / increased rate of run-off causing inundation	Buildings and Infrastructure	Private drainage system will be designed in accordance with current design guidance and standards and attenuation will be provided along with potential SUDS measures such as bio-retention. The use of SUDS measures, with controlled release of surface water to the combined sewer network will help to mitigate any potential flood risk impact from the development on the public sewer system. Finished site levels will be engineered to provide positive drainage where required and prevent ponding. Gradients of the hardstanding areas, where possible, will be designed to fall away from buildings such that any overland flow resulting from extreme events would be channelled away from entrances. Surface water drainage discharge will be restricted. The new development proposed site surface water drainage system will be designed to maintain surface water flows below ground for up to and including the 1 in 100-year return period as a minimum. Flows above this and up to 100 year plus 45% allowance for climate	Building and site design	Moderate Adverse Permanent Signfiicant

Potential Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (Temporary/Permenant)
		change will beretained safely within the site.		
Risk to occupants' safety in public realm as a result of high winds	Building occupants	Use of anti-door slam products to reduce impact of high winds	Building detailed design	Minor Adverse Not Significant Permanent
Extremes of temperature may result in building services being unable to maintain thermal comfort levels.	Building occupants	Additional dynamic thermal modelling will be undertaken at the detailed design stage to assess the design for a projected climate change environment using predicted future weather files in line with TM59 requirements. Ventilation & heating plant selection will be based on projected future temperatures. Facility for cooling capacity increase to be included in infrastructure	Building detailed design	Minor Adverse Not Significant Permanent
Landscape planting may be affected.	Planting	Planting designed to thrive across extremes of temperature and precipitation events (native or climate resilient).	Site Design – planting strategy	Minor Adverse Not Significant Permanent
Subsidence / ground movement could result in structural damage to buildings..	Buildings and infrastructure	Structural engineers to ensure design of foundations is mitigated against the risk of ground shrinkage	Design of foundtations	Moderate Adverse Significant Permanent

Monitoring

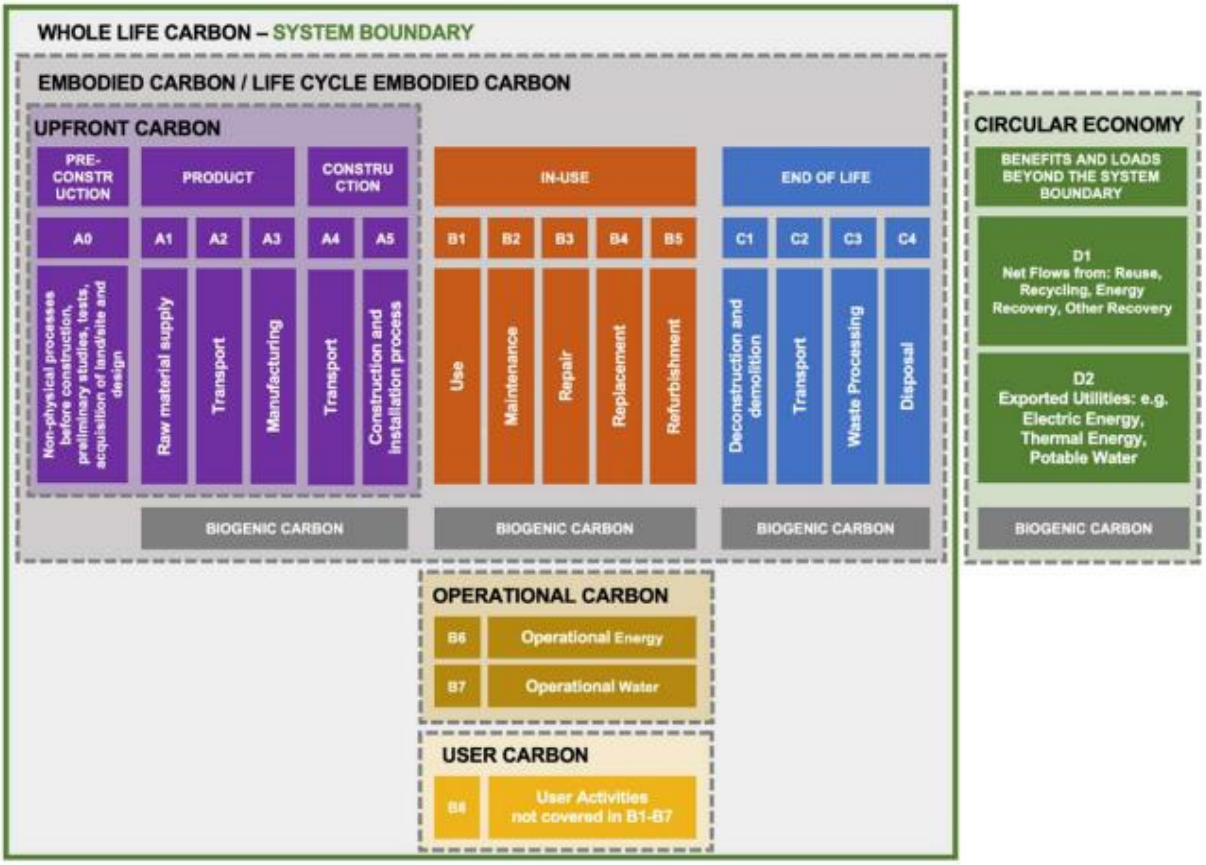
11.117. Monitoring of energy use during construction.

Reference List

11.118. This ES Chapter has been prepared in reference to the following:

- BRE (2023) BREEAM UK New Construction Guidance v6.1
- Element Sustainability (2024) First Street, Manchester, Life Cycle Assessment
- Element Sustainability (2024) First Street, Manchester, Mat 01 Life Cycle Assessment
- Element Sustainability (2024) First Street, Manchester, Circular Economy Statement
- Element Sustainability (2024) First Street, Manchester, CEnvironmental Standards Statement
- Futurserv (2024) First St Plot 9B, Energy Statement
- Futurserv (2024) First St Plot 9B, Ventilation Statement
- IEMA (2022) Assessing Greenhouse Gas Emissions and Evaluating their Significance (2nd Edition)
- IEMA (2020) EIA Guide to: Climate Change Resilience & Adaptation
- London Plan Guidance: Whole Life Carbon Assessments
- Low Energy Transformation Initiative (LETI) (2020) Climate Emergency Design Guide
- Manchester Core Strategy Core Strategy | Core Strategy | Manchester City Council
- The Met Office (2019) UK Climate Projections: Headline Findings ukcp18-headline-findings-2.pdf (metoffice.gov.uk)
- Met Office website (accessed December 2024) UK Climate Averages. https://www.metoffice.gov.uk/research/climate/maps-and-data/uk-climate-averages/
- Met Office website (accessed December 2024) Past Weather Events. https://www.metoffice.gov.uk/weather/learn-about/past-uk-weather-events
- Places for Everyone Joint Development Plan (2024) Microsoft Word - Post Adoption Places for Everyone Joint Development plan Plan.docx
- ROC Consulting (2024) Flood Risk Assessment and Outline Drainage Strategy
- Royal Institute of British Architects (RIBA) (2021) RIBA 2030 Climate Challenge Version 2.
- Royal Institution of Chartered Surveyors (RICS) (2024) Whole life carbon assessment for the built environment 2nd edition, Version 3
- SLR (2024) Plot 9b, First Street, Framework Travel Plan
- SLR (2024) Plot 9b, First Street, Transport Assessment
- UK Green Building Council (2017) Embodied Carbon: Developing a Client Brief
- UK Green Building Council (2019) Net Zero Carbon Buildings
- UK Government - Energy consumption in new domestic buildings 2015 – 2017 (England and Wales) December 2019
- UK Net Zero Carbon Buildings Standard: The Pilot Version of the UK Net Zero Carbon Buildings Standard Pilot Version | UK Net Zero Carbon Buildings Standard

Figure 11.1



Whole Life Carbon System Boundary

Not to Scale	Date: [19.12.24]

12. Human Health

Introduction

12.1. This Chapter of the ES has been prepared by Enfusion and assesses the likely impacts of the Proposed Development upon human health for the Site and surrounding area.

12.2. This Chapter is accompanied by the following appendices:

- N/A

12.3. The author of this Chapter has qualifications BSc, MSc, CEnv, FIEMA and over 25 years' experience in environmental assessment. She is a co-author of The EIA Handbook (third edition, 2019) Environmental Impact Assessment Handbook (cip-books.com) and has experience of delivering over 75 EIAs (various inputs - specialist, review, coordination).

Assumptions and Limitations

12.4. This Health Chapter considers the findings relevant to human health of each technical impact assessment scoped into the Environmental Statement – Townscape & Visual Impact (Chapter 6); Air Quality (Chapter 7); Noise & Vibration (Chapter 8); Daylight, Sunlight & Overshadowing (Chapter 9); Climate Change (Chapter 11); Wind Microclimate (Chapter 10); and Socioeconomics (Chapter 13) – and, as such, any key assumptions or limitations associated with each technical impact assessment are addressed within the individual chapters. The overall approach for collating, assessing, and reporting impacts on human health and well-being is considered to be appropriate and proportionate such that there are no limitations. The assessment, set out in this ES Chapter, is desk-based and with professional judgment using published information.

Relevant Legislation, Policy and Guidance

Legislation

12.5. N/A

Policy

National Planning Policy Framework (revised 2024)

12.6. The NPPF acknowledges the importance of considering health impacts during the planning process and covers many issues that are directly related to the determinants of health. The NPPF identifies the three overarching objectives – economic, social, and environmental – that are *interdependent and need to be pursued in mutually supportive ways* in order to achieve sustainable development (paragraph 8). The social objective should support *"strong, vibrant and healthy communities… by creating a high quality built environment, with accessible local services that reflect the community's needs and support its health, social and cultural well-being.*

12.7. Chapter 8 covers promoting healthy and safe communities, acknowledging that planning policies and decisions should aim to achieve healthy, inclusive, and safe places which:

a) promote social interaction, including opportunities for meetings between people who might not otherwise come into contact with each other – for example through mixed-use developments, strong neighbourhood centres, street layouts that allow for easy pedestrian and cycle connections within and between neighbourhoods, and active street frontages.
"b) are safe and accessible, so that crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesion – for example through the use of clear and legible pedestrian routes, and high quality public space, which encourage the active and continual use of public areas; and
"c) enable and support healthy lifestyles, especially where this would address identified local health and well-being needs – for example through the provision of safe and accessible green infrastructure, sports facilities,

local shops, access to healthier food, allotments and layouts that encourage walking and cycling." (paragraph 96).

12.8. Social, recreational, and cultural facilities and services should 'support the delivery of local strategies to improve health, social and cultural wellbeing for all sections of the community (paragraph 98). It is important that sufficient choice of school places is available to meet the needs of existing and new communities (paragraph 99). Public safety should be promoted and "take into account wider security and defence requirements" (paragraph 102).

12.9. "Access to a network of high quality open spaces and opportunities for sport and physical activity is important for the health and wellbeing of communities" (paragraph 103). Sustainable transport should be promoted and this "can help improve air quality and public health" (paragraph 110). "An effective use of land should be promoted in meeting the need for homes and other uses, while safeguarding and improving the environment and ensuring safe and healthy living conditions" (paragraph 124). "Developments should create places that are safe, inclusive, and accessible and which promote health and wellbeing…" (paragraph 135). "New development must be appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health…" (paragraph 198).

Public Health England (PHE, now OHID) Strategy (2020-2025)

12.10. This document sets out how PHE intends to protect and improve the public's health and reduce inequalities during 2020 to 2025. The Strategy recognises that the longer term, societal drivers of change represent the principal challenge facing the public's health. However, there are opportunities now, including "*place-based approaches"*. The ten priorities include *healthier diets, healthier weight*; *cleaner air;* and *better mental health"* with the aim to incorporate the reduction of health inequalities into each of the ten priorities. The purpose of PHE is to protect and improve the nation's health and reduce health inequalities. This is guided by aims – "*to keep people safe; to prevent poor health; to narrow the health gap; and the support a strong economy".*

Fair Society, Healthy Lives (Marmot Review 2010, and 2020)

12.11. The review sets out a framework for action under two policy goals: to create an enabling society that maximises individual and community potential; and to ensure social justice, health and sustainability are at the heart of all policies. There are six policy objectives:

- giving every child the best start in life
- enabling all children, young people and adults to maximize their capabilities and have control over their lives
- creating fair employment and good work for all
- ensuring a healthy standard of living for all
  creating and developing sustainable places and communities
- strengthening the role and impact of ill-health prevention

12.12. The Marmot Review 10 Years On found that over the last decade health inequalities have widened overall. The more deprived the area, the shorter the life expectancy. There is a housing crisis and a rise in homelessness; people have insufficient money to lead a healthy life; and there are more ignored communities with poor conditions and little reason for hope.

Sub-Regional Planning Policy

Greater Manchester Joint Development Plan (JDP) (adopted March 2024)

12.13. The Vision for Greater Manchester (GM) includes to make Greater Manchester as "*a place where people live healthy lives"*; and Strategic Objectives include No 10 "*Promote the health and wellbeing of communities"*:

- Ensure new development is properly served by health care services that meet the needs of communities
- Improve access to healthy food options for all communities

- Reduce the health impacts of air pollution through accessibility of sustainable travel such as public transport, cycling and walking
- Maximise the health benefits of access to the natural environment and green spaces;
- Coordinate with and support the delivery of local and Greater Manchester wide health strategies

12.14. The overall Strategy and many of the policies in the plan support improvements in health and wellbeing, and reductions in health inequalities, such as by "*promoting a successful economy; increasing supply of high quality and affordable homes; enabling people to adopt healthier lifestyles*; and *reducing risks to human health".* The JDP recognises that addressing health inequalities will require a diverse range of coordinated measures. The JDP supports improvements in health and wellbeing including through promoting a successful economy, enabling people to adopt healthier lifestyles, and reducing the risks to human health.

12.15. 12.15 Policy JP-P6 Health – To help tackle health inequality new development will be required, as far as practicable, to:

A. *Maximise its positive contribution to health and wellbeing, whilst avoiding any potential negative impacts of new development;*

B. Support healthy lifestyles, including through the use of active design principles making physical activity an easy, practical and attractive choice; and

C. Be supported by a Health Impact Assessment for all developments which require to be screened for an Environmental Impact Assessment…

12.16. The Policy supporting text advises that as well as being of great importance in its own right, "health also has a significant impact on the ability of people to enjoy the immense range of opportunities across Greater Manchester and to make a positive economic contribution". The text recognises that improvements in health require a range of coordinated measures, many of which are beyond the scope of the GMJDP. The JDP supports improvements in health and wellbeing, and reductions in health inequalities throughout its policies and proposals, such as by:

- Promoting a successful economy
- Increasing the supply of high quality and affordable homes
- Enabling people to adopt healthier lifestyles, including through development of a high-quality green infrastructure; encouraging provision of wide range of recreation and sports facilities; food growing opportunities; and increasing the proportion of trips made by walking and cycling
- Reducing the risks to human health, including flood risk; reducing air pollution; providing cooling and shading to combat high temperatures; promoting high levels of fire safety; and designing places to minimise opportunities for crime, terrorism, and anti-social behaviour

12.17. The policy supporting text does not suggest any particular kind of HIA but rather advises that HIAs "should aim to enhance the positive aspects of a proposal while avoiding or minimising any negative impacts, with particular emphasis on disadvantaged sections of communities that may be affected."

Local Planning Policy

Manchester City Council (MCC) Core Strategy (adopted 2012)

12.18. MCC's Core Strategy is the key document in Manchester's Local Development Plan. It is founded on a Vision to 2027 that includes "*an increased and sustainable healthy population…*". Policies relevant to health are as follows:

- Policy SP1 Spatial Principles includes requirement that development should make a positive contribution to neighbourhoods including "*making a positive contribution to the health, safety and wellbeing of residents*'

- Policy EC1 Employment and Economic Growth in Manchester requires development proposals to make the best possible use of a site in terms of efficient use of space and including application of best practice in security design.
- Policy EN4 seeks to reduce CO_2 emission and reduce fuel poverty by enabling low and zero carbon development.
- Policy EN8 Adaptation to Climate Change includes requirements to minimise flood risk and reduce urban overheating.
- Policy EN9 Green Infrastructure provides guidance on provision of new, and improvements to, the quality and accessibility of existing green infrastructure assets.
- Policies EN10 and EN11 safeguard and create new open space, sport and recreation facilities.
- Health is further protected through Policies EN14 Flood Risk, EN16 Air Quality, EN17 Water Quality, and EN18 Contaminated Land & Ground Stability
- Policy T1 Sustainable Transport requires "*delivery of a sustainable, high quality, integrated transport system to encourage modal shift away from car travel… and to prepare for carbon free modes of transport"*.
- Policy T2 will actively manage the pattern of development to ensure that there are accessible areas of opportunity and need.
- Policy T3 supports proposals that contribute to an economically and environmentally sustainable transport network through strategic integration of strategic transport projects. Progression towards sustainable transport will promote healthier living and well-being.
- Policy *DM1 Development Management requires that all development should have regard to specific issues including "Effects on amenity, including privacy, light, noise, vibration, air quality, odours, litter, vermin, birds, road safety and traffic generation*"; Accessibility: *buildings and neighbourhoods fully accessible to disabled people, access to new development by sustainable transport modes*"; "*Community safety & crime prevention*"; and "*Design for Health.*

Our Manchester Strategy, Forward to 2025

12.19. The Strategy sets out the future envisaged for the city and the priorities were reset following wide consultation during 2020. Communities want to see a renewed focus on the six themes, including "*Health – tackling physical and mental inequalities and ensuring fair access to integrated services"*.

Manchester's Building Back Fairer (Marmot) Framework (2022-2027)

12.20. The Framework sets out the interactivities between the eight identified themes and the four ways that community groups and trusted organisations need to be involved. The eight themes are:

- Communities & power
- Early years, children & young people
- Poverty, income & debt
- Work & employment
- Prevention of ill health & preventable deaths
- Homes & housing
- Places, transport & climate change
- Systematic & structural racism & discrimination

Other Relevant Policy & Strategy

Greater Manchester (GM) Population Health Plan (2017-21)

12.21. Sets out the approach by the GM Health & Social Care Partnerships to delivery of a radical upgrade in population health across the city region. This strategic framework has been developed with Plan Objectives, as follows:

- Person & community centred approaches
- Start well
- Live well
- Age well
- System reform

Manchester City Council Population Health Plan (2018-2027)

12.22. The plan focuses on getting results in five crucial aspects of life:

- The first 1,000 days of a child's life
- Work and its positive impact on health
- Making social connections and changes that matter
- An age-friendly Manchester
- Action on preventable early deaths

12.23. An 11-point plan covers key factors – including the impact of housing. The plan recognises that "Better housing can help to prevent physical illness and reduce stress, and good heating and insulation helps to keep people well in winter. A good physical environment makes us more active and helps us access the services we need. Good-quality air prevents chest conditions getting worse, and reducing long-term exposure to pollution has many positive health benefits". It also recognises the harm that social isolation can have on mental health and wellbeing.

Guidance

Public Health England (PHE) Spatial Planning for Health (2017)

12.24. This report provides evidence of links between spatial planning and health, focusing on five key built environment topics – neighbourhood design, housing, healthier food, natural and sustainable environment, and transport.

Public Health England (PHE) Health Impact Assessment in Spatial Planning (2020)

12.25. This document provides a guide for local authority public health and planning teams setting out process and practice with regard to the wider determinants of health and wellbeing for plan-making and the planning application process. It identifies eight categories of health and wellbeing outcomes in planning: reduce health inequalities; improve mental health and wellbeing; improve diet and weight; improve musculoskeletal health; improve respiratory health; improve cardiovascular health; protect environmental health; and provide access to health and care infrastructure and services. The guide is mostly associated with the plan-making and associated strategic environmental assessment processes. It does include an annex on integrating HIA in EIA and this does confirm the importance of a p*roportionate and justified approach*".

Institute of Environmental Management and Assessment (IEMA) Effective Scoping of Human Health in EIA; Determining Significance for Human Health in EIA (November 2022)

12.26. Provides a framework that supports a proportionate approach that can apply to all scales and sectors of EIA. It confirms that a wider determinants approach should be taken by EIA scoping. An EIA health chapter is required when other EIA technical topics have been scoped in to assess likely significant effects on human receptors, or

there is a likely significant change for the health of a group of individuals due to the proposed project and in a wider determinant of health not covered by other technical EIA topics.

Assessment Methodology and Significance Criteria

Scenarios Tested

- Scenario 1: Existing Baseline = Site as is today
- Scenario 2: Existing Baseline with Proposed Development; and
- cenario 3: Existing Baseline with cumulative developments and Proposed Development.

The Study Area

12.27. The geographical scope is determined by receptor groups that are likely to be significantly affected by the proposed development. The scope of the Human Health Chapter is in part dependent upon the study areas and potential receptors identified in the other technical assessments (air quality, noise, daylight/sunlight/overshadowing, wind microclimate, climate change and socio-economic). Thus, the study area comprises the Proposed Development Site with local surrounds in the City Centre and the wider study area of Manchester City and Greater Manchester – as applicable to each of the factors relevant to human health and wellbeing for the proposed project.

Source of Effect

12.28. Health Impact Assessment (HIA) and health in EIA are separate processes, and there is no standard methodology for assessing health in EIA. The coverage of health in EIA need not be so comprehensive as the HIA that is used to inform detailed project design, but guidance documents for good practice in HIA can inform EIA practice in relation to human health and well-being. It is important that health in EIA is proportionate, balanced, and relevant. The approach here is proportionate - based on consultation responses, professional experience, and assessment of impacts against relevant baseline information. This is a Human Health assessment as part of an EIA; it is not a HIA.

12.29. *Shaping Neighbourhoods: For Local Health and Global Sustainability* (2003, 2010 & 2021) sets out the complexities of planning for health due to the multiple determinants and the need for cross-sectoral understanding and collaboration. This guide established a health map demonstrating the linkages between the global ecosystem, the natural and built environments, the local economy with communities, people, and their lifestyles. It explains the likely interactions between different sectors and seeks a common language for spatial planning and public health practitioners.

12.30. The complexities of investigating health impacts are recognised by Public Health England (PHE) and the Wider Determinants of Health tool is an ongoing project that provides resources for categories of factors that affect health, as follows: built and natural environment; work and the labour market; vulnerability; income; crime; education.

12.31. The London Healthy Urban Development Unit (HUDU) '*Healthy Urban Planning Checklist*' (2017) provides a useful checklist that was developed for London but is applicable to development proposals in urban city centres elsewhere in the UK. The checklist aims to promote healthy urban planning by ensuring that the health and wellbeing implications of local plans and major planning applications are consistently taken into account, through providing a set of themes and planning issues that can be used to assess development proposals. It can be used to help screen possible health impacts for a health impact assessment. Changes in certain determinants caused by development projects may affect the health and wellbeing of existing and new residents. The checklist is divided into four themes – healthy housing; active travel; healthy environment; and vibrant neighbourhoods. This HUDU checklist recognises that health and wellbeing can be affected by multiple determinants as shown in Figure 14.1.

12.32. The HUDU has further developed the checklist into a rapid HIA tool (London HUDU, 2019) that uses existing evidence to quickly assess the impacts of a development plan or proposal and recommend measures to address any negative impacts and maximise benefits. The tool is based on eleven topics or broad determinants of health and wellbeing focused on the built environment and issues influenced by planning decisions.

12.33. For the purposes of this Human Health (HH) assessment, we have applied the HUDU checklist and eleven topics to the Proposed Development in order to help determine the scope of the assessment by identifying the relevant topics. Applicable criteria/questions for each of the scoped topics were considered at the assessment stage in order to assess potential health impacts and the need for any mitigation or enhancement. Existing information and evidence were used, and impact assessment undertaken using professional judgment.

12.34. Housing design and affordability are key factors – provision of good quality residential development is known to have positive effects on health and wellbeing. This HH considers the findings from the EIA chapter on Townscape & Visual Impact (TVIA).

12.35. Access to health and social care services and other social infrastructure is directly important for health. This health assessment considers the proximity, accessibility, and capacity (where possible) of health and medical centres and dentists in the vicinity of the Proposed Development. It considers the proximity and accessibility of gyms, leisure centres, sports/recreational and cultural facilities nearby since such activities are important contributors to health and wellbeing. Searches were made through web-based sources and using Google Maps to measure approximate distances by walking and/or public transport from the centre of the development area to the facility. The walkable zone was defined as a distance of about 2km from the site.

12.36. Access to open space and nature is a key factor. The proximity of open spaces and walking/cycling routes is investigated since access to open space and healthy modes of transport strongly contributes to healthier lifestyles and wellbeing. Does the proposal provide links between open and natural spaces and the public realm? Are the open spaces safe and accessible? Does the proposal set out how any new space will be managed and maintained?

12.37. 12.39 Air quality, noise and neighbourhood amenity are important factors for health and wellbeing. Summary findings from the technical studies for air quality and noise are considered and their implications for health and wellbeing incorporated into this HH chapter.

12.38. Accessibility and active travel is well established as a major factor in health and wellbeing. Summary findings from the transport & traffic assessment technical study are considered and their implications for health and wellbeing incorporated into this HIA. Effects were not considered to be significant enough for these topics to be scoped into the EIA. The Proposed Development is located in the Manchester City Centre and richly served by a range of sustainable transport modes.

12.39. Crime reduction and community safety is a key factor in health and wellbeing for communities and this HH considers those elements of the development proposals that contribute to safety.

12.40. Access to healthy food is another direct factor in health, such as accessibility to a range of retail and smaller food shops, including for affordability. Provision of allotments and encouragement of community gardens for food is not often within the scope or viability of proposed development projects.

12.41. Access to work and training is known to affect health and wellbeing. Whilst provision of training is beyond the scope of the Proposed Development, the location of the new homes close to a wide range of employment opportunities are considered within this HH chapter.

12.42. Social cohesion and inclusive design are key factors for health and wellbeing. This HH chapter considers the implications of the design and project proposals in this respect for the new communities; it also considers connectivity with the nearby existing residents and communities.

12.43. Minimising use of resources – does the proposal make best use of existing land? Does the proposal encourage recycling, including building materials? Does the proposal incorporate sustainable design and construction techniques?

12.44. Climate change is an increasingly vital factor in considering environmental sustainability and a healthy environment – and consequently, health and wellbeing for people and communities. Does the proposal ensure that buildings and public spaces are designed to respond to winter and summer temperatures? This is a concern for tall buildings and city centre locations - such risks were considered to be of likely significance and scoped into the supporting EIA. This HH considers the findings from the EIA chapters on climate change; daylight, sunlight & overshadowing; and wind microclimate. Risks associated with flooding and ground contamination were identified as not significant for the EIA and these findings are noted within this HH.

12.45. Overall, the HH chapter aims to consider impacts associated with the construction and the occupational phases.

It considers embedded mitigation provided through the design of the project – such as layout, together with specific mitigation for potential negative effects – such as the commitment to a Construction Environmental Management Plan (CEMP) to control and minimise any effects associated with nuisance noise and dust.

12.46. The HH chapter aims to identify any sensitive receptors, such as nearby schools and care homes. The complexities of investigating health impacts are appreciated, including the multifunctionalities and interconnectedness of factors. Therefore, the key findings are then considered within the four themes for healthy urban living - Healthy Housing; Active Travel; Healthy Environment; and Vibrant Neighbourhoods.

12.47. The baseline informing the assessment draws upon local health and wellbeing information and priorities, such as those set out in the Manchester Intelligence Hub, and as reported through Public Health England and the Office for National Statistics (ONS). The key baseline from relevant technical studies undertaken for the EIA, and other planning support studies, is considered, including risks to health/wellbeing such as from air quality, noise, climate change, daylight/sunlight/overshadowing, and the wind microclimate.

12.48. Further information on environmental sensitivity that might affect human health and wellbeing has been taken from Defra Magic Mapping. It has not been necessary for this assessment to undertake primary research or surveys and this desk-based approach using published information and professional judgment provides an appropriate level of detail to demonstrate that the requirements of The EIA Regulations – and Policy JP-P6 Health have been addressed.

Significance Criteria

12.49. The recent IEMA guidance (November 2022) suggests categories and wider determinants of health, and those relevant to the Proposed Development were identified, as follows:

Table 12.1 EIA Wider Determinants of Health

Category	Wider Determinants of Health
Health related behaviours	Physical activity; diet & nutrition
Social environment	Housing; relocation; open space, leisure & play; transport modes & access; community safety; community identity & resilience; social participation, interaction & support
Economic environment	Education & training; employment & income
Bio-physical environment	Climate change mitigation & adaptation; air quality ; land quality ; noise & vibration; radiation
Institutional & built environment	Health & social care facilities; built environment; wider societal infrastructure & resources

12.50. The guide also sets out a generic human health magnitude criteria and significance criteria, as follows:

Table 12.2 Human Health Magnitude Criteria

Category	Indicative Criteria (narrative based on professional judgment for magnitude change of population or sub-population
High	high exposure or scale; long-term duration; continuous frequency; severity predominantly related to mortality or changes in morbidity (physical or mental health) for very severe illness/ injury outcomes; majority of population affected; permanent change; substantial service quality implications
Medium	low exposure or medium scale; medium-term duration; frequent events; severity predominantly related to moderate changes in morbidity or major change in quality-of-life; large minority of population affected; gradual reversal; small service quality implications
Low	very low exposure or small scale; short-term duration; occasional events; severity predominantly related to minor change in morbidity or moderate change in quality-of-life; small minority of population affected; rapid reversal; slight service quality implications
Negligible	negligible exposure or scale; very short-term duration; one-off frequency; severity predominantly relates to a minor change in quality-of-life; very few people affected; immediate reversal once activity complete; no service quality implication

Table 12.3 Human Health Significance Matrix

		Sensitivity			
		High	Medium	Low	Very Low
	High	Major	Major/Moderate	Moderate/Minor	Minor/Negligible
	Medium	Major/Moderate	Moderate	Minor	Minor/Negligible
	Low	Moderate/Minor	Minor	Minor	Negligible
	Negligible	Minor /Negligible	Minor/Negligible	Negligible	Negligible

12.51. Therefore, a significant effect is reported in this assessment where, based on professional judgment, the Proposed Development is likely to contribute to a material change in health outcomes associated with the health issue being assessed and, in determining this, the following questions have been considered:

- Have significant effects been identified in other assessments undertaken as part of the EIA that are linked to human health (i.e. are environmental or health standards threatened)?
- Are vulnerable groups affected?
- Is the effect reversible or irreversible?
- Does the effect occur over the short (less than one year), medium (one to five years) or long (over five years) term?
- Is the effect permanent or temporary?
- Does it increase or decrease with time?
- Is the effect at an individual, community or population level?
- Are mitigating measures available and is it reasonable to require these?

12.52. Effects that are described as 'minor' or 'negligible' are determined to be 'Not Significant' and effects that are described as 'moderate' or 'major' are determined to be 'Significant'. This takes into account the sensitivities of receptors (high, moderate, low) and as set out previously in Table 2.3 in the EIA Methodology (Chapter 2). The criteria and categories of significance applied in this human health impact assessment are, as follows:

- Major Adverse/Beneficial – important considerations at local or district scale; if adverse, are potential concerns to the project and may become key factors in the decision-making process; changes due to the project have a substantial effect on ability to deliver current health policy and/or ability to narrow health inequalities; changes due to the project could result in a regulatory or statutory threshold being crossed
- Moderate Adverse/Beneficial – modest important local effects that, if adverse, may be key issues for decision-making; changes due to the project have an influential effect on ability to deliver current health policy and/or ability to narrow health inequalities; changes due to the project could result in a regulatory or statutory threshold being approached
- Minor Adverse/Beneficial – Slight, short, or highly localised effects that, if adverse, are unlikely to be important in the decision-making process; changes due to the project have a marginal effect on ability to deliver current health policy and/or ability to narrow health inequalities
- Negligible – no appreciable effects on health factors

12.53. Standardised sectoral thresholds and significance criteria have been used for each of the relevant technical factors that contribute to health and well-being, according to recognised guidance, standards, and assessment methods for townscape & visual impact; air quality; noise; daylight, sunlight, & overshadowing; wind microclimate; climate change; and socioeconomics. Then, the overall likely significant effects on human health have been determined in a qualitative way using professional judgment.

Baseline Conditions

12.54. The Proposed Development is located within the Deansgate Ward in Manchester City Centre. The Site is currently unoccupied, and it is bound by Medlock Street to the west and by other plots being redeveloped to the north and east. Another nearby area between Cambridge Street and River Street will be used during the temporary construction phase of the works.

12.55. Population & Life Expectancies: There are some 16,876 people living in Deansgate Ward according to the ONS Census population estimates (2022). The working age population is 16,412 with only 184 people aged 65+ and only 280 children under 16 years. The working age population of 97.3% is similar to the adjacent Piccadilly Ward with 95.9% and reflects the demographic of city centre living and working. The Deansgate ward has 50% of its total population between the ages of 18-24, reflecting its proximity to the City Centre and Universities and the predominance of students and young professionals. This is further supported by the fact that only 1.1% of the Deansgate ward population is 65+ years.

12.56. According to OHID (previously PHE) data (2016-2020), life expectancy at birth for Manchester is 75.6 (males) & 79.7 (females) compared with 79.5 (males) & 83.2 (females) averaged for England. Provisional estimates of life expectancy at birth show the impact of the Covid-19 pandemic. Data are not available for the Deansgate Ward but life expectancy at birth in the Piccadilly Ward for females is 87.7 (no data for males) which is the highest in the city.

12.57. The size of the fall in life expectancy in Manchester is more than that seen in England overall, widening inequalities in life expectancies between Manchester and the national average. According to PHE data, physically active adults (2022-23) are recorded at 65.0% for Manchester, lower than that averaged for England at 67.1%. Percentage of adults classified as overweight or obese are recorded at 63.3%, slightly lower than the 64.0% averaged for England. The winter mortality (2021-22) at 11.4% was slightly worse than the averaged value of 8.1% for England.

12.58. Health & Inequalities: The Manchester State of the City Report (2022) reports on progress with various matters including reducing health inequalities. It reports that people with higher levels of wellbeing have lower rates of illness, recover more quickly (and for longer), and generally have better physical and mental health. Individuals in Manchester have overall poorer scores on self-reported life satisfaction than England as a whole. In 2019/20, 5.4% of adults in Manchester had a low life-satisfaction score compared with 4.7% of adults across England as a whole – a difference of 0.7 percentage points. In 2022-23, the self-reported wellbeing was 7.2% for Manchester compared with 5.6% for England.

12.59. In 2021, 13.3% of respondents in Manchester said they had a long-term mental health problem compared with 11% of respondents across England as a whole. Infant deaths (deaths to children aged under one year of age) are an indicator of the general health of the entire population. They reflect the relationship between causes of infant mortality and other determinants of population health, such as economic, social, and environmental conditions. The infant mortality rate in Manchester has improved substantially in recent years. Between the periods 2001–03 and 2011–13, the rate fell by 87%.

12.60. Physical inactivity is the fourth-leading risk factor for global mortality. Data from the Sport England Active Lives Adult Survey for 2022/3 shows that the proportion of adults aged 19 and over in Manchester classed as 'inactive' has fallen slightly from 26.5% in 2019/20 to 25.7% in 2022-23. The proportion of adults across England as a whole classed as 'inactive' has changed over the same time period (from 27.1% in 2019/20 to 26.0% in 2022-23).

12.61. The Index of Multiple deprivation (IMD) is an overall relative measure of deprivation constructed by combining seven domains of deprivation – Income; Employment; Education; Skills & Training; Health & Disability; Crime; Barriers to Housing Services and Living Environment. According to MCC Intelligence Hub information using Ward profiles, the Deansgate Ward has a IMD score (2019) of 24.1 (the least deprived is in the range 15.5-31.1 with 48.4-62.7 indicating the most deprived) indicating that Deansgate is one of the least deprived Wards in the City. Overall, Manchester had a IMD (2019) of 40.0 which is worse than that for the north-west region at 28.1 and averaged for England at 21.7.

12.62. Health Services & Other Social Infrastructure: There is a range of services and community facilities within close proximity (20 minute walk, around a 2km radius) of the site. There are seven GP practices/medical centres within the local level of around 1.2 km of the Site, with an average of 2.071 residents per GP and higher than the

national target ratio of 1,800 patients per GP. As of January 2024, there are 2,294 patients per GP in England – an average that has increased by 7% since 2019 (Royal college of General Practitioners). As at July 2021, there were 85 GP practices in Manchester with large variation in the number of patients registered at the practices. This ranges from 1,820 for the smallest through to 23,096 for the largest practice with a citywide total of 679,284 patients registered at Manchester GP practices. According to the BMA, GP practices across England are experiencing significant and growing strain with declining GP numbers, rising demand, struggles to recruit and retain staff – with knock-on effects for patients.

12.63. Thus, there is a national and fast-changing situation relating to GP practices, capacities, services and meaningful ratios of GP to patients. The precise numbers of patients and capacities for new patients at GP practices in the vicinity of the Site are not known, although an initial web-based search indicated that some of the GPs appear to be taking on new patients. The Deansgate Ward populations comprise almost entirely of people aged 16-64 (97%) of which the vast majority are under the age of 40 (92% aged between 16-39). On the reasonable assumption that a more elderly patient profile is likely to generate higher demand for primary healthcare services, it is therefore more likely that practices operating locally can sustainably support higher patient to GP ratios.

12.64. There are seven dental practices within around 1.2 km radius of the Site. It is not known how many of these dental practices are taking on new patients nor how many of these will take NHS patients. Studies by the BBC and the British Dental Association (BDA) in 2022, found that 9 in 10 practices in England are reporting that they are unable to take on new adult patients on the NHS. The BDA continues to lobby for reform and fair funding for NHS dentistry, and as with GPs, this situation with dentists is national and appears to be somewhat changeable. Again, the likely demographics for working age residents in the Deansgate Ward indicate that the current dental practices may be able to accommodate demand from the increased number of residents.

12.65. Hospitals are located to the south-east and around 1.5 miles distance – with good sustainable transport possibilities. There are no care/retirement/nursing homes within the vicinity. There are no nursery schools located within the vicinity of the Site. There are 6 primary schools located within about 1.0 mile distance from the Site. Secondary schools are further away and accessible through good sustainable transport options. There are several community centres within 1 mile of the Site. With the Proposed Development for PBSA, the demand for nursery and school places is likely to be limited and therefore, such consideration for effects on health has not been progressed further.

12.66. The Site is located within the Manchester City Centre where there is a rich variety of cultural, health & wellbeing services and facilities available. This includes museums and art galleries, theatres and cinemas, cafes/bars and restaurants. There are some 15 gyms/sports centres within a 1 mile radius of the Site, including some with swimming pools.

12.67. **Crime:** The total reported street crimes for 2018 in the Deansgate Ward was 14,172, similar to adjacent Wards, and at the highest end of the range from 1,343 – 16,552 reported within Manchester.

12.68. **Employment & Economy**: Total number of people in employment within the Deansgate Ward was 102,000 (Intelligence Hub, 2022), the highest in the city with adjacent Piccadilly Ward at 85,000 reflecting the city centre employment focus. The resident population of the ward is 16,876, and the working population is 16,142. This indicates substantial net inward migration into the area for work of around 80,000.

12.69. **Housing:** Local housing need (JDP, 2024) is estimated at just over 175,000 homes over the period 2022-2039, with a prioritisation of delivering more homes within the city and town centres and using brownfield land. With 2.5 students to every bed in Manchester, the supply-demand balance continues to intensify. The demand for PBSA could be up to 11,320 bed spaces through until 2030.

12.70. **Open Space & Nature**: There a number of open/amenity spaces in proximity to the Site (less than 1 mile) including Hulme Park, All Saints Park, St Johns Gardens, Symphony Park, and Mayfield Park.

12.71. **Air Quality**: As with the majority of Manchester City Centre, the Site is located within the Greater Manchester Air Quality Management Area (AQMA). Local air quality at the Site is and will be affected by local traffic flows – the main source of air pollution in the surrounding Site locale is emissions from vehicles using the local road network. Passive monitoring data indicate that there have been exceedances of the NO_2 annual mean AQAL at monitoring sites close to the Site during all recent years

12.72. **Noise & Vibration**: The general noise environment at and around the Site is principally determined by road traffic

on Mancunian Way (A57M) and Medlock Street. There are no major sources of vibration in proximity to the Site.

12.73. **Flood Risk:** The site is within Flood Zone 1 and, therefore, at low risk of flooding. **Travel**: The Site is one of the most accessible in the city, being in Manchester City Centre with excellent access to rail, Metro, bus services and a wide network of pedestrian and cycling infrastructure.

12.74. **Townscape & Visual Impact**: The Site is located within the Deansgate area of the Manchester City Centre, approximately 0.9 mile (20 minute walk) from Piccadilly railway station. This area is currently undergoing significant urban regeneration and comprises several modern apartment and office buildings and construction sites. The Site is within the central heart of the First Street masterplan area which is not established and partially complete. The Site is not located in any designated Conservation Area and there are no nationally listed heritage assets on the Site, although there are a number of nearby listed assets.

12.75. **Climate Change**: Greenhouse gas (GHG) emissions occur constantly and widely as a result of human and natural activity. As the site is currently vacant, there are no significant GHG emissions associated with the site in the baseline.

12.76. **Daylight, Sunlight & Overshadowing**: The Site is currently undeveloped and is an open parcel of land located in the city centre and bounded by other plots that are being redeveloped. Generally, the Site and its surroundings are considered to be of high density massing.

12.77. **Wind Microclimate**: The microclimate of any development is the distinctive climate of a small-scale area. The weather variables in a microclimate, such as wind, may be different to the conditions prevailing over the area as a whole. The baseline studies identified that wind conditions throughout the existing site and surrounding areas satisfy the safety criteria for wind, and overall, existing wind conditions are suitable for existing uses.

Identification and Evaluation of Likely Significant Effects; Mitigation Measures

Construction Phase

12.78. **Employment & Economy**: It is estimated that construction expenditure could support 254 FTEs per annum across the construction period with temporary **Minor Beneficial** effects which is **Not Significant** in EIA terms. The Proposed Development would generate a short term net additional GVA of around £26m within Manchester which is **Negligible**. The construction phase is likely to support some apprenticeships with **Minor Beneficial** effects which is **Not Significant** in EIA terms.

12.79. **Local Services & Facilities**: It is considered that construction work will not result in a noticeable additional demand for community services and facilities – **Negligible**.

12.80. **Townscape & Visual Impact**: During the construction phase, sources of townscape and visual effects include site set up and compound, boundary fencing, site clearance, groundworks, access, and contractor parking, plant and equipment. Measures to control construction impacts will be incorporated into a Construction Environmental Management Plan (CEMP).

12.81. **Air Quality**: The construction phase risks for effects of dust soiling and on human health are mitigated through measures set out in the CEMP such that effects are reduced to **Negligible** and in the short-term.

12.82. **Noise & Vibration**: The technical studies identified six potentially sensitive receptors to noise ands vibration – 5 residential locations in the vicinity and one office location (Plot 9a) on River Street. The potential for adverse construction noise will be mitigated through the CEMP with noise control and including solid screening around the Site, such that residual effects will be **Negligible to Minor Adverse** which is **Not Significant**. Construction vibration levels would not be sufficient to cause structural damage to buildings around the Site.

12.83. **Daylight, Sunlight & Overshadowing**: During the construction phase, the daylight and sunlight effects will gradually change from the baseline condition to those impacts (where present) with the Proposed Development in place. **Wind**: During the construction phase effects are **Negligible**. **Climate Change**: Initial modelling of embodied carbon emissions has been undertaken which shows a likely **Minor Adverse** effect on climate change, which is **Not Significant.**

Operational Phase

12.84. **Housing:** The Proposed Development includes provision of 861 student bed spaces through PBSA thus

contributing to addressing the supply-demand imbalances and improving targeted housing within the internationally significant Oxford Road Corridor of Manchester – **Major Beneficial**.

12.85. **Employment & Economy**: The Proposed Development has the potential to support about 10 net additional FTEs which is **Negligible**. Additional local spend is also estimated to be **Negligible**.

12.86. **Healthcare Facilities**: There appears to be a national and fast-changing situation relating to GP provision – staffing, capacities, services - and meaningful ratios of GPs and other health professionals to patients; also, for dentists and particularly provision of NHS dentists. Needs and demands are changing. There are a variety of healthcare services and facilities within good accessibility of the Site. Given the demographic profile of the existing local resident population, it is likely that residents living at the Proposed Development and nearby baseline developments will generate a generally lower level of demand for primary healthcare services. It is anticipated that many new students occupying the Proposed Development will remain registered with their home GPs. Effects are considered to be **Negligible.** It is noted that the New Jackson Medical Centre is now open with The Docs and the Vallance Medical offering NHS and private GP services and taking new patients in the area. It is located in the Elizabeth Tower in the southern end of Deansgate within 10 minute walk to the west of the Site.

12.87. **Crime:** There is likely to be less risk of crime since there will be new occupied buildings with security measures rather than a vacant site**. Open Space, Recreation & Amenity**: An uplift in resident population will increase demand and usage of nearby open space and recreational facilities. However, the Proposed Development is located in the city centre with rich and diverse recreational and cultural services and facilities, and including at the universities such that effects are likely to be **Not Significant**.

12.88. **Townscape & Visual Impact**: The proposals will bring about a change of land use from a currently vacant site to one which will have a clear urban use in line with the First St masterplan – but with a relatively small change to the surrounding townscape character areas. Movement around the Proposed Development will be enhanced with the opening up of routes between plots and the creation of public open space areas and tree planting to the streetscape with beneficial effects. The proposals will create activity at ground level, and incorporate opportunities to animate the streetscene with tree planting and high quality public realm space.

12.89. The Proposed Development will have a **Negligible** effect over the nearby city Conservation Areas and effects on heritage will be Neutral. Effects on Character Areas and the Townscape will be Slight Beneficial which is Not Significant. The studies investigated 15 viewpoints and found a range of effects with **Neutral** effects for 10 views, **Slight/Moderate-Moderate/Major beneficial** for 4 views, and **Slight-Moderate Adverse** for one view, which is **Not Significant**.

12.90. **Air Quality**: Detailed assessment of operational phase impacts has been scoped out of the ES. An Emissions Mitigation Assessment has been undertaken and it is also noted that measures included in the associated Travel Plan will aid improvement in air quality – overall **Negligible** effects.

12.91. **Noise & Vibration**: The impact of noise due to changes in road traffic flows is expected to be **Negligible**. Noise limit requirements for building services plant will be met with establish guidance such that the predicted noise effects would be **Negligible**. Sound insulation of the building facades to achieve internal noise criteria will provide embedded mitigation measures to reduce potential noise effects on the living rooms and bedrooms of the proposed apartments.

12.92. **Climate Change**: The operation of the Proposed Development will result in CO_2eq emissions associated with energy used within the buildings and CO_2eq emissions associated with the transport of people to and from the buildings. Mitigation measures have been incorporated into the design to minimise energy consumption and exceed the requirements of the Building Regulations Part L 2021 (adopted 2022). These include possible **Minor Adverse or Moderate Adverse** effects on building occupants, users of the public realm and the public realm and buildings themselves. Measures have been and will be incorporated into the design of the Proposed Development to minimise these effects. The Moderate Adverse effect relates to the potential for climate change to result in increased risk of flooding to the site, and subsidence/ground movement which could result in structural damage to buildings. The site and building will be carefully designed to reduce these risks. The operation of the car-free Proposed Development will result in non-significant CO_2eq emissions associated with operational transport. All trips generated are for servicing, access or taxis. Furthermore, the Site occupies a highly sustainable location - therefore predicted that there will be a **Negligible** impact on climate change for traffic emissions.

12.93. **Daylight, Sunlight & Overshadowing**: The impacts of the Proposed Development on the daylight and sunlight amenity of developments at Plot 10b and Plot 11 First Street were assessed. The impact on daylight amenity of Plot 10B was found to be **Minor Adverse** and therefore **Not Significant**. The impact on daylight amenity of the neighbouring building at Plot 11 was found to be no more than **Minor Adverse** and therefore **Not Significant**; the impact on sunlight amenity was found to be **Negligible** and **Not Significant.**

12.94. **Wind**: With the introduction of the Proposed Development within existing surrounds, the safety criteria are substantially met throughout the study area. Exceedances occur along Hulme Street at 5 locations and indicate potential major adverse effects before mitigation. As regards comfort, throughfares within the Site remain suitable for intended uses and wind conditions within the surrounding area are substantially suitable for intended uses. Mitigation measures and residual effects are considered within the cumulative effects assessment, as follows.

Cumulative Effects

12.95. **Housing & Employment/Economy**: Analysis of the cumulative developments indicates that they could potentially deliver 5,950 student bedspaces; 5,900 new homes; 110,000 sqm office accommodation; 2,500 sqm retail; and 8,000 sqm of leisure and community facilities – with **Minor-Moderate Beneficial** effects for employment & economy during the construction phase. During the operational phase, **Minor – Moderate Beneficial** effects for employment and local spend. With an overall approximate population increase of 23,500, it is assumed that each development will contribute to mitigating effects on healthcare capacities such that overall, cumulative effects will be **Negligible**.

12.96. Daylight and Sunlight amenity cumulative effects were found to be **Major Adverse** as a result of the massing of Plot 10A. Overall, the impact on the daylight amenity Plot 11 in the Cumulative Condition is Minor Adverse, and on sunlight amenity of Plot 11 First Street is Moderate Adverse and therefore Significant.

12.101 **Wind**: With the introduction of the Proposed Development within cumulative surrounds, the safety criteria are substantially met throughout the study area, but with some exceedances along Hulme & Newcastle Street, along Medlock Street, and south of Plot 9a. Generally, wind conditions ae substantially suitable for their intended uses but with some exceedances. Mitigation measures, including provision of canopies, wind baffles, hedges, fins, and recessing of the main entrance, were testing using wind tunnel. With implementation of mitigation measures, the safety criteria are met throughout the majority of the study area, with the exception of the central reservation on Medlock Street which is not a pedestrian or cyclist thoroghfare, and effects are **Negligible**.

12.102 With mitigation measures, comfort criteria are met and Site thoroughfares, the main entrance and the elevated terrace are suitable for their intended uses with **Negligible** effects. A Minor Adverse effect was found for the secondary entrance of the Proposed Development and this is Not Significant. Within the surrounding area, wind conditions are substantially suitable for their intended uses; there are some exceedances that are Minor Adverse effects and **Not Significant**, with one location (waiting area nearby to Plot 11) found to have a **Moderate Adverse** effect, which is Significant but marginally below the required wind speed threshold.

Residual Effects

12.97. Post-mitigation residual effects are summarised in the tables 12.5-12.6, as follows:

Table 12.5 – Summary of Receptors, Likely Significant Effects, Mitigation Measures, and Residual Effects during the construction phase.

Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (i.e., Temporary/Permanent)
Construction Phase				
Socioeconomics: Employment	Workers & local economy	N/A	N/A	Minor Beneficial Not Significant

Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (i.e., Temporary/Permanent)
TVIA	Local residents	Screening	CEMP	Slight – Moderate
Air Quality	Dust Soiling & Workers' Health	Dust and emissions control	CEMP	Negligible
Noise	Local Residents	Solid screening, noise control	CEMP	Negligible
Wind	Passers by & workers	N/A	N/A	Negligible
Climate Change - embodied carbon	Global climate	N/A	N/A	Minor Adverse Not Significant

Table 12.6 – Summary of Receptors, Likely Significant Effects, Mitigation Measures, and Residual Effects during the operational phase

Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (i.e., Temporary/Permanent)
Operational Phase				
Socioeconomics: Employment	Workers & local economy	N/A	N/A	Minor Beneficial Not Significant
Socioeconomics: Healthcare	Residents	N/A	N/A	Negligible
Open Space & Amenity	Residents & visitors	N/A	N/A	Negligible
Housing – student accommodation	Residents	N/A	N/A	Major Beneficial
Townscape Character	Residents & visitors	N/A	N/A	Slight Beneficial Not Significant
Townscape Heritage	Residents & Visitors	N/A	N/A	Neutral
Views (15 viewpoints)	Residents & visitors	N/A	N/A	Neutral for 10 views Slight/Moderate-Moderate/Major beneficial for 4 views, and Slight-Moderate Adverse – Not Significant for 1 view
Noise – building services plant & road traffic	Residents & visitors	N/A	N/A	Negligible
Climate Change – traffic emissions	Global climate	N/A	N/A	Negligible
Climate Change – flood risk	Buildings & infrastructure	SuDS & design	Building & site design	Moderate Adverse
Climate Change – subsidence	Buildings & infrastructure	Design	Building & site design	Moderate Adverse
Climate Change – extreme Wind & temperatures	Residents & visitors	Design	Building & site design	Moderate Adverse
Daylight & Sunlight Amenity	Residents Plot 10B	N/A	N/A	Not Significant

Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (i.e., Temporary/Permanent)
Daylight & Sunlight Amenity	Residents Plot 11	N/A	N/A	Not Significant
Wind – safety & comfort	Residents, visitors	Canopies, fins, baffles, hedges, recessed main entrance	Submitted as part of Proposed Development	Negligible – Minor Adverse Not Significant (1 location at waiting area near Plot 11 Moderate Adverse)

References

National Planning Policy Framework (revised 2024) https://www.gov.uk/government/publications/national-planning-policy-framework--2

PHE Strategy (2020 – 2025) https://www.gov.uk/government/publications/phe-strategy-2020-to-2025

Fair Society, Healthy Lives (Marmot Review 2010, and 2020) https://www.instituteofhealthequity.org/resources-reports/marmot-review-10-years-on

Greater Manchester Joint Development Plan (adopted March 2024)
https://www.greatermanchester-ca.gov.uk/what-we-do/planning-and-housing/places-for-everyone

Manchester City Council (MCC) Core Strategy (adopted 2012)
https://www.manchester.gov.uk/info/200074/planning/6573/core_strategy_2012-2027

Our Manchester Strategy, Forward to 2025
https://www.manchester.gov.uk/info/100004/the_council_and_democracy/8148/our_manchester_strategy_%E2%80%93_forward_to_2025

Manchester's Building Back Fairer (Marmot) Framework (2022-2027)
https://www.instituteofhealthequity.org/resources-reports/build-back-fairer-in-greater-manchester-health-equity-and-dignified-lives-briefing-note

Public Health England (PHE) Spatial Planning for Health (2017) https://www.gov.uk/government/publications/spatial-planning-for-health-evidence-review

Public Health England (PHE) Health Impact Assessment in Spatial Planning (2020)
https://www.gov.uk/government/publications/health-impact-assessment-in-spatial-planning

Greater Manchester (GM) Population Health Plan (2017-21)
https://gmintegratedcare.org.uk/wp-content/uploads/2022/06/population-health-plan-2017-2021.pdf
Manchester City Council Population Health Plan (2018-2027)
https://www.manchester.gov.uk/downloads/download/6926/manchester_population_health_plan_2018-2027_-_summary_version

Manchester Intelligence Hub
https://www.manchester.gov.uk/info/200088/statistics_and_intelligence/7611/intelligence_hub

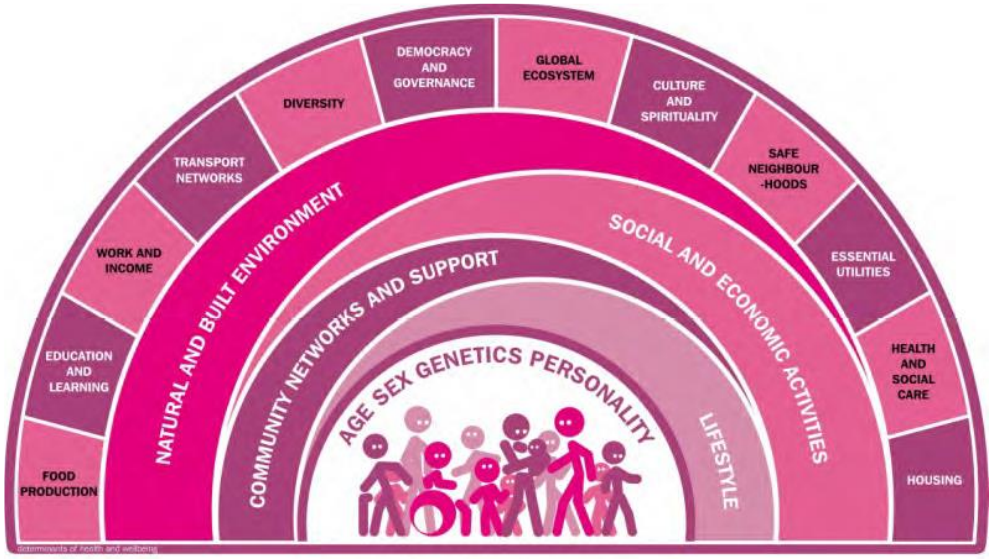
and as reported through Public Health England
https://fingertips.phe.org.uk/profile/health-profiles/area-search-results/E08000003?place_name=Manchester&search_type=parent-area

and the Office for National Statistics (ONS) https://www.ons.gov.uk/

Sport England https://activelives.sportengland.org/

Defra Magic Mapping https://magic.defra.gov.uk/MagicMap.aspx

Figure 12.1



The Determinants of Health and Wellbeing (London HUDU, developed from Barton & Grant 2007)

Not to Scale	Date: October 2024

13. Socio-Economic

Introduction

13.1. This Chapter of the ES has been prepared by AMION Consulting and assesses the likely significant socio-economic effects arising as a result of the Proposed Development, in the construction and operational phases.

13.2. This Chapter is accompanied by the following appendices:

- Appendix 13.1 - Cumulative Schemes

13.3. The authors of this Chapter are Peter Alford and Charlie Bircham. Peter Alford has postgraduate Masters degrees (with distinction) in Civic Design from the University of Liverpool and in Commercial Property Development from Liverpool John Moores University. Peter heads AMION's Land and Property Economics service and has a primary focus on land, property development and planning-related issues. Peter has more than 15 years of consultancy experience in economic analysis, policy and strategy development and business planning exercises. He has managed economic appraisal projects for a range of public and private sector organisations including government departments, local authorities, combined authorities, property developers and house builders. Charlie Bircham has a Masters degree in Real Estate Development and an honours degree in Real Estate from Manchester University and Northumbria University. Respectively. Charlie has 7 years of experience advising on socioeconomic matters and has prepared approximately 10 socio-economic ES Chapters. AMION Consulting is a UK economics consultancy specialising in economic development and regeneration. AMION works with public sector and private sector clients to make the case for growth and investment.

Assumptions and Limitations

13.4. The assessment is based on the latest available and most comprehensive socioeconomic data sources published by central and local government. As with any dataset, some data may be older than the true baseline (i.e. 2024). This is an unavoidable limitation that is not likely to affect the conclusions of the assessment.

Relevant Legislation, Policy and Guidance

Legislation

13.5. There is no specific statutory guidance for the assessment of socio-economic effects within the Town and County Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations).

13.6. The UK planning and strategic policies relating to the assessment of socio-economic effects are outlined below.

Policy

National Planning Policy

National Planning Policy Framework

13.7. The most recent iteration of the NPPF retains a presumption in favour of sustainable development and three overarching objectives to be delivered through the preparation and implementation of plans and policies in the Framework:

- An economic role – building a strong, responsive and competitive economy.
- A social role – supporting strong, vibrant and healthy communities by ensuring the provision of homes and accessible services.
- An environmental objective – including an enhancement of the built environment.

13.8. The Proposed Development aligns with the core objectives outlined within the Framework. The Proposed Development will support the social objective by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering well-designed, and sustainable

places that reflect current and future needs and support communities' health, social and cultural wellbeing. The Purpose-Built Student Accommodation scheme will also indirectly contribute to the delivery of key economic objectives, by helping to build a strong, responsive and competitive economy, by ensuring that sufficient land of the right type is available in the right places and at the right time to support growth, innovation and improved productivity. Furthermore, the NPPF emphasises the need for local authorities to plan effectively for housing, including:

- Adequate supply of housing to meet the needs of students, particularly in areas close to universities and colleges; and
- A diverse range of options, including PBSA.

Other National Policy

Levelling Up

13.9. Despite the recent change in the UK Government, the addressing of inequalities at a national level remains a strategic policy priority. Therefore, the Levelling Up White Paper remains of relevance, in how it outlines a clear framework that identifies and provides a plan of action to act upon the drivers of spatial disparity across the UK. The proposed development aligns with the following key objectives:

- Physical capital – housing delivery as part of a local market offer that responds to demand for new student accommodation within the local community.
- Human capital—supporting the skills, health, and experience of key groups within the local community, reflecting Manchester's role as a key centre of learning, with around 124,000 students enrolled at universities in the sub-region.
- Social capital – strengthening local communities by promoting the delivery of housing that responds to the needs of key groups.

13.10. The White Paper underpins the Levelling-up and Regeneration Act 2023.

Brownfield Development

Recent Government policy, including the NPPF, has outlined the ambition to prioritise the redevelopment of brownfield land, defined as land which is or was occupied by a permanent structure. To increase the rate of development on underused brownfield land, several major funding schemes and policy mechanisms have been introduced over recent years. The proposed development represents an opportunity to deliver over 850 PBSA bedspaces upon a brownfield site.

Sub-Regional Policy

Northern Powerhouse

13.11. The Northern Powerhouse relates to the boosting of the economy across the North through investment in skills, innovation, transport and culture, with the ambition of giving key Northern cities the power and resources needed to reach their huge untapped potential. The proposed PBSA scheme is well positioned to contribute to this vision, which is structured around key principles including business environment, ideas, infrastructure, people and places. In particular, the scheme closely aligns with the prioritisation of places by improving Manchester's ability to attract and retain talent through its Higher Education Institutions and will support the establishment of a skilled and mobile labour market.

Greater Manchester Local Enterprise Partnership (LEP) Economic Vision Document

13.12. In spite of the effective abolition of Local Enterprise Partnerships in 2023, the economic vision document of the Greater Manchester LEP remains of relevance in identifying a number of key themes and strategic priorities across the area of interest for the Proposed Development. At the heart of this vision is the ambition to establish a vibrant and growing ecosystem across Manchester characterised by an integrated pipeline for talent, skills and progression, good employment and desirable places where people thrive. The PBSA scheme set to be delivered by the Proposed Development would support these ambitions by unlocking a brownfield site within a highly accessible location in the heart of the City and providing over 850 bedspaces to accommodate Manchester's thriving student population, which reinforces the status of Manchester as a key centre of learning within the

UK.

Greater Manchester Strategy

13.13. The Strategy outlines an ambition for Greater Manchester to become greener, fairer, more prosperous and driven by opportunities in all localities across the conurbation. The proposed development will support the creation of a vibrant and resilient neighbourhood with high-quality housing and employment prospects and a highly skilled and talented workforce. The scheme is also well-positioned to support the need for additional PBSA accommodation in the Manchester city centre, which will facilitate the ongoing research and academic excellence provided by the area's five universities.

Greater Manchester Housing Strategy

The Strategy, though set to expire in 2024, sets strategic actions at a city region level to ensure that safe, decent and affordable housing is available for all residents, which fits the needs and aspirations of current and future citizens. The document specifically references Manchester's significant student population and the interaction between the student accommodation market and the traditional Private Rented Sector. To support the inclusivity of the city region, the strategy outlines the intent to achieve a mix of values and tenures and the right balance of different types and sizes of homes. The proposed development is well-positioned to support the continued diversification of accommodation provision across the city region and also has the potential to alleviate some of the student population's reliance on the Private Rented Sector.

Local Policy

Policy

Manchester Core Strategy – Places for Everyone

13.14. Manchester's Core Strategy, considered alongside the Places for Everyone (PfE) Joint Development Plan, sets out the long-term strategic policies for Manchester's future development and underpins the framework that planning applications will be assessed against. A key theme across these strategic documents is the need to deliver an appropriate mix of dwelling types and sizes, including housing provision for specific groups such as students. This emphasis on student accommodation is particularly relevant as the city's student population is identified as a key strength that can support the unlocking of future economic growth. The proposed development, through the delivery of a high-quality and high-density PBSA scheme within close proximity to the Oxford Road Corridor, is well-positioned to diversify the housing provision within a localised area of high housing demand. The scheme is also set to be delivered in full compliance with Policy H12, which relates to the delivery of PBSA schemes.

Manchester City Council's Student Strategy Implementation Plan

13.15. Published around the same time as the Manchester Core Strategy, the Student Strategy Implementation Plan[2] identifies a number of key issues associated with the large student population that need to be addressed and acknowledges the need to provide better accommodation for students in appropriate locations. Whilst at the time of publication, PBSA was regarded to be in oversupply, rapidly rising undergraduate and postgraduate student numbers and other factors within the Private Rented Sectors have imposed severe restrictions on the availability of student-friendly accommodation in the city centre . This trend has placed additional pressure on the mainstream letting market and has also affected MCC's Council Tax revenue stream. These longer-term shifts in the demand and supply of PBSA within Manchester city centre support the strategic rationale justifying the delivery of the proposed development.

Our Manchester Strategy – Forward to 2025

13.16. The Our Manchester Strategy details a series of goals that will put Manchester in the top flight of world cities in the near future, including the need to deliver 32,000 homes by 2025 within diverse and inclusive neighbourhoods. The proposed development cuts across a number of key themes and priorities identified within the strategy, including the development of a highly skilled and talented population and the creation of liveable, resilient and cohesive neighbourhoods across the city.

[2] Manchester City Council – Student Strategy Implementation Plan

Corridor Manchester – Strategic Vision to 2025

13.17. The Strategic Vision document outlines the ambition for the corridor to become a cosmopolitan hub and world-class innovation district […] contributing to the economic and social dynamism of one of Europe's leading cities. Underpinned by a thematic focus on economy, place, and people, the document identifies the need to strengthen the area further as a place to live, visit, and work for students and knowledge workers from across the world. The proposed scheme has the potential to directly support this further development of the area through the delivery of a high-quality PBSA scheme within the corridor. In addition, the First Street mixed-use site is specifically identified as a major investment location with the potential to impact significantly on the local economy and support the growing city population.

Manchester Economic Strategy - Investing in Success

13.18. The Economic Strategy recognises the vital role of students in Manchester's economy. It aims to enhance their skills and employability through collaboration between educational institutions and local businesses, promoting internships and job placements. By addressing housing and transport needs, the strategy seeks to create an environment that attracts and retains students, contributing to the city's innovation and cultural vitality. This focus aligns with Manchester's goal of inclusive growth, ensuring all residents benefit from regional economic opportunities.

Guidance

13.19. Specific guidance is referred to throughout the Chapter where appropriate.

Assessment Methodology and Significance Criteria

Scenarios Tested

13.20. In line with the standard approach (as set out in ES Volume 1: Chapter 2) this chapter of the ES will assess the following scenarios:

- Scenario 1: Existing Baseline – committed baseline schemes
- Scenario 2: Existing Baseline – committed baseline schemes with Proposed Development; and
- Scenario 3: Existing Baseline with cumulative developments and Proposed Development.

13.21. Each scenario is addressed within the 'Identification and Evaluation of Likely Significant Effects' section.

Technical Scope

13.22. The scope of the assessment of socio-economic impacts has been undertaken using the following methodology:

- A review of the strategic policy context to provide an outline of the relevant national and sub-national/local social and economic objectives of the area.
- Identification of the impact area, in relation to each potential socio-economic impact, for the assessment of the Proposed Development.
- A desktop review of publicly available information on current socio-economic and labour market conditions in the study area to establish the baseline using accepted Government sources, such as the Census and Office for National Statistics (ONS) data, including the baseline indicator groups and assembled data outlined above.
- Assessment of likely significant socio-economic effects of the Proposed Development during the Construction and Operational Phases based on the sensitivity value of the receptor and magnitude of effect.
- Recommendation of mitigation measures where necessary.
- Assessment of significance of residual effects assuming that the mitigation measures are implemented.
- Identification of likely significant additive / cumulative effects regarding other consented schemes in the local area.

- Consideration of synergistic effects including the in-combination / interaction of socio-economic effects with other ES topic areas.

13.23. Qualitative and quantitative assessments have been undertaken having regard to assessment methodologies from published guidance, including:

- The broad framework for place based assessment outlined in appraisal guidance published by former Department for Levelling Up, Housing and Communities (DLUHC);
- ONS Construction Statistics for Great Britain (2022);
- Annual Business Survey;
- Department for Business, Innovation and Skills (BIS) Occasional Paper No.1; and
- Professional judgement.

13.24. Key to understanding the socio-economic effects of the Proposed Development will be determining its net additional impact or 'additionality'. This is the extent to which activity takes place at all, on a larger scale, earlier or within a specific designated area or target group as a result of the intervention.

13.25. To assess the additionality of the Proposed Development, the following factors have been considered:

- Leakage – the proportion of outputs that benefit those outside of the area of impact.
- Displacement – the proportion of outputs accounted for by reduced outputs elsewhere around the area of impact. Displacement may occur in both the factor and product markets.
- Multiplier effects – further economic activity associated with additional local income and local supplier purchases.
- Deadweight – outputs which would have occurred without the Proposed Development. This is referred to as the reference case.

The above approach to assessing the additional impact of a project is consistent with overarching principles outlined in central Government guidance for physical development projects, including appraisal guidance published by the former DLUHC (2023).

The Study Area

13.26. The anticipated effects of the Proposed Development are set out in Table 13.1 below.

- Local impact area (LIA) - the definition of the LIA varies depending on the effect being assessed, these are set out within Table 13.1;
- District - Manchester City Council (MCC) is identified as the Local Planning Authority and administrative area in which the Proposed Development is located; and
- Regional - North West is considered when assessing temporary construction employment effects.

Table 13.1: Study areas

Effect	Study area	The rationale for the study area
Temporary employment generation during the construction phase (direct, indirect, and induced effects)	Regional (North West)	Construction labour is likely to be drawn from across the wider North West region.
Employment generation during the operational phase (direct, indirect, and induced effects)	District Level Manchester City Council	Employment/economic growth targets are set out in the Manchester Economic/Core Strategy.
Additional Local Spend	District Level Manchester City Council	New students within Manchester would be expected to generate additional spending power in Manchester.

Effect	Study area	The rationale for the study area
Demand for Primary Healthcare	Local Level (2 km from the site) 2.0km	Based on the expected commute area for residents from the Chartered Institute of Highways and Transport.
Demand for student accommodation	District Level Manchester City Council	Strategic objectives for the supply and management (planning) of PBSA is managed at by the local authority

Source of Effect

13.27. Socio-economic effects are likely during both the construction and operational phases of the Proposed Development. Table 13.2 describes the likely socio-economic effects from the Proposed Development and their relevant receptors.

Table 13.2: Likely Effects and Relevant Receptors

Effect	Description	Receptor
Temporary employment generation during the construction phase (direct, indirect, and induced effects)	The construction of the Proposed Development will create temporary construction employment.	Individuals seeking construction-related employment
Short-term economic output	Construction expenditure will create additional economic output over the construction period.	The local economy
Training and apprenticeship opportunities.	Construction projects support training and apprenticeship opportunities for residents.	Individuals seeking employment
Employment generation during the operational phase (direct, indirect, and induced effects) and economic output impacts	The operation of the Proposed Development will generate direct on-site employment, as well as support further off-site employment through indirect and induced effects.	Individuals seeking employment The local economy
Additional Local Spend	The additional expenditure from students will support employment creation and economic outputs	Individuals seeking employment The local economy
Demand for Primary Healthcare	The increase in student accommodation has the potential to affect local healthcare provision, such as GPs and Dentists.	Primary healthcare facilities
Demand for student accommodation	An increase in the supply of student accommodation can affect the local demand-supply balance and contribute towards delivering local strategic objectives.	Local student population.

Significance Criteria

13.28. There are no recognised significance criteria for socioeconomic effects. Professional judgement will be used based on the identified needs of the local area, planning policy objectives and the magnitude of potential impacts in line with the significance criteria set out in Chapter 2: EIA Approach. Mitigation measures will be identified as required along with any residual effects.

- The significance takes into consideration the following variables:
- The sensitivity of the receptor – i.e. their value and susceptibility to change;
- The magnitude of effect experienced by the receptor – i.e. the degree of alteration from the baseline;
- The scale at which any effect will be felt – i.e. site level, at the immediate setting of the site, at the scale of the study area;
- The duration of any effect (short-term, long-term etc);
- The socio-economic effect of the development itself; and
- The changes that will occur over time with the development in place.

Receptors and Receptor Sensitivity

13.29. The sensitivity of each receptor, outlined in Table 13.3, is evaluated as being high, moderate or low.

Table 13.3: Sensitivity of receptor

Sensitivity	Receptor
High	The receptor/resource has little ability to absorb change without fundamentally altering its present character or is of international or national importance.
Moderate	The receptor/resource has a moderate capacity to absorb change without significantly altering its present character or is of high importance.
Low	The receptor/resource is tolerant of change without detriment to its character and is of low or no local importance.

Magnitude of Impact

13.30. The magnitude of impact experienced by each receptor is determined by considering the change from baseline conditions, both before and (if required) after mitigation. The criteria used for the assessment of the magnitude of socio-economic impacts (both beneficial and adverse) are outlined in Table 13.4.

Table 13.4: Magnitude of impact

Magnitude of Impact	Criteria for assessing impact
Major	Total loss or major/substantial alteration to key element/features of the baseline (pre-development) conditions such that the post-development character/composition/attributes will be fundamentally changed.
Moderate	Loss or alteration to one or more key elements/features of the baseline conditions such that post-development character/composition/attributes of the baseline will be materially changed.
Minor	A minor shift away from baseline conditions. Change arising from the loss/alteration will be discernible/detectable but not material. The

Magnitude of Impact	Criteria for assessing impact
	underlying character/composition/attributes of the baseline condition will be similar to the pre-development circumstances/situation.
Negligible	Very little change from baseline conditions. Change is barely distinguishable, approximating to a 'no change' situation.

13.31. The magnitude of change is considered alongside the sensitivity of the receptor and the significance of the impact is thus identified. Table 13.5 sets out the resulting impact matrix.

Table 13.5: Significance Matrix

Magnitude	Sensitivity		
	High	Moderate	Low
Major	Major Adverse/Beneficial	Major - Moderate Adverse/Beneficial	Moderate-Minor Adverse/Beneficial
Moderate	Major - Moderate Adverse/Beneficial	Moderate -Minor Adverse/Beneficial	Minor Adverse/Beneficial
Minor	Moderate - Minor Adverse/Beneficial	Minor Adverse/Beneficial	Minor-Negligible
Negligible	Negligible	Negligible	Negligible

Baseline Conditions

13.32. This section describes the baseline conditions with respect of socio-economic, including committed (baseline) developments.

Current Site

13.33. The Application Site sits within the Oxford Road Corridor, a designated Enterprise Zone (EZ) since 2016. The Strategic Spatial Framework 2020) recognises the need to ensure that the land available is utilised to its full potential by increasing density, improving quality and ensuring appropriate uses for both student accommodation and employment activities that will lever the significant knowledge-based activities of Manchester's institutions.

13.34. At a site level, the First Street Strategic Regeneration Framework (SRF) (2015) demonstrates how the area (including the Application Site) provides a unique development opportunity in the City Centre to support a broad range of developments. Whilst the First Street area has begun to be developed over the past 2 decades, there remain opportunities for development, on brownfield land in the city centre.

13.35. The site is assumed to have negligible current socio-economic use. The Site is identified for redevelopment within the SRF, with mixed commercial uses in line with the SRF being a priority as well as increased site density.

Population

13.36. According to the Office of National Statistics (ONS), Manchester has a population of 579,900 as of 2023. Within Manchester, the Deansgate ward accounts for 2.9% of the total population at 16,875. A breakdown of the population by broad age category is shown in Tables 13.6 and 13.7 below. As demonstrated below, Deansgate has a significant population of working-age people at 97.3%. In addition, the Deansgate ward has 50% of its total population between the ages of 18-24 (the average for Manchester as a whole was 16%), reflecting its proximity to the City Centre and Universities and the predominance of students and young professionals. This is further

supported by the fact that only 1.1% of the Deansgate ward population is of 'retirement age'.

Table 13.6: Population by broad age category

Age Range	Deansgate ward	Manchester	North West
Aged 0-15	280	115,462	1,419,622
Aged 16-64	16,412	410,314	4,748,253
Aged 65+	184	54,141	1,432,251
Total	16,876	579,917	7,600,126

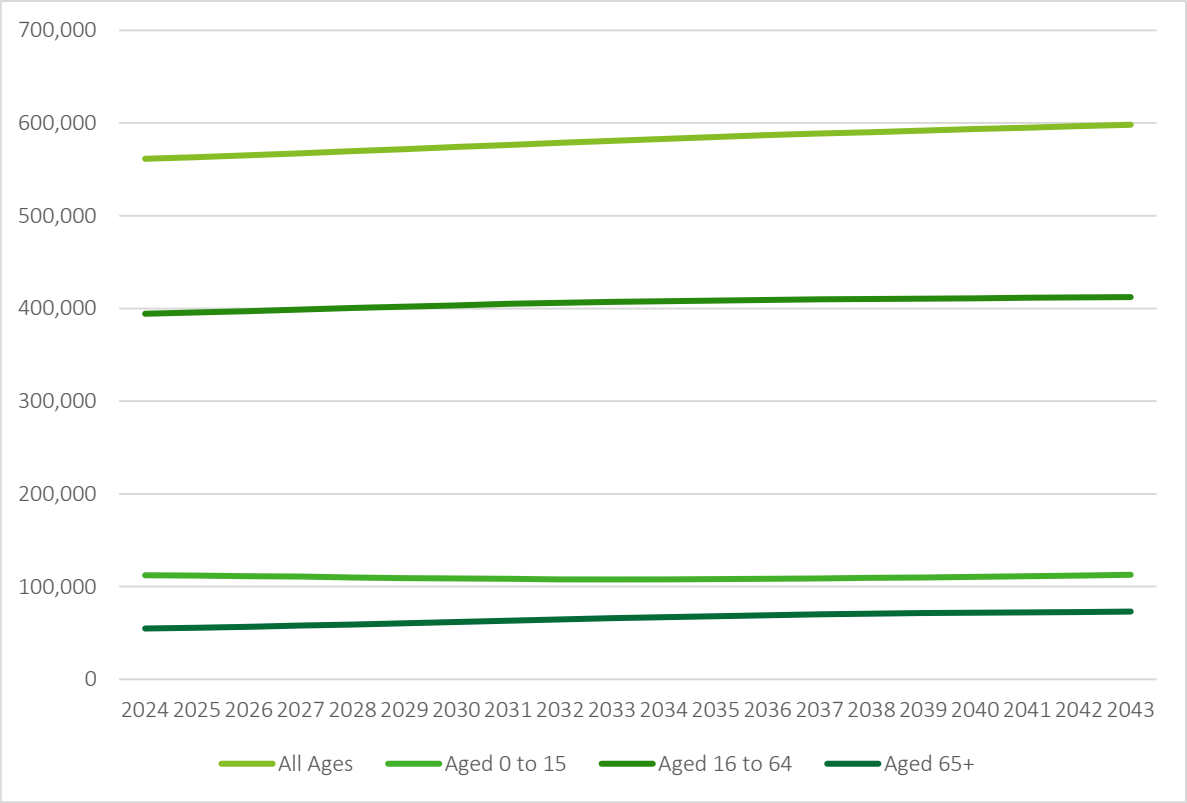
Table 13.7: Population by broad age category (%)

Age Range	Deansgate ward	Manchester	North West
Aged 0-15	1.7%	19.9%	18.7%
Aged 16-64	97.3%	70.8%	62.5%
Aged 65+	1.1%	9.3%	8.8%
Total	100.0%	100.0%	100.0%

Source: ONS Population Estimates, 2023; ONS Small-area based Population Estimates, 2022

13.37. Population projections, often referred to as sub-national population projections (SNPP), are produced every two or three years at the local authority level, with the most recent release based on 2020 data. Figure 13.1 shows the population projections for Manchester for the period 2024 to 2043. The overall population is expected to grow from 549,900 to 598,149, which represents a 6.5% increase over the period.

Figure 13.1: Population projections for Manchester by broad age category (2024-2043) (number)



Source: ONS Population Projections - local authority based on single year of age (2020)

Employment

13.38. Data from the ONS shows that economic activity in the Deansgate ward is 51.3%, well below the averages for Manchester at 74.5% and the North West 76.7%[3] . The low economic activity rate is due to the number of students, which account for 34.0% of the resident population. Full-time employment rates are 49.2%, well below the 71.4% rate across Manchester. The Annual Survey of Hours and Earnings provides details of wages at the local authority and regional levels, either by place of residence or place of work. The resident-based statistics for Manchester show gross weekly average earnings (full-time and part-time)[4] of £634.80 in Manchester, which is below the North West (£649.00). However, when considering the workplace-based statistics[5], Manchester (£706.70) is higher than the North West (£646.30). This reflects the role of Manchester city centre as a major economic and employment centre which experiences high levels of in-commuting, including for higher-paid activities.

13.39. In 2022, the total number of people working in the Deansgate ward was 98,945[6]. The resident population of the ward is 16,876, and the working population is 16,142. This indicates substantial net inward commuting into the area for work. Given its strategically important city centre location and excellent public transport links, the Proposed Development will help to increase the conditions for sustainable economic growth in Manchester.

13.40. Table 13.8 shows sectors of local importance, the professional, scientific & technical sectors (28.0%) have a significantly higher proportion of employment than seen across the Manchester (13.8%) and North West (9.4%) levels. In addition, the business administration & support services accommodation & food services and information & communication sectors account for more employment than seen across the comparator areas.

13.41. Conversely, several sectors within Deansgate are not as established as the comparator areas. For example, Education (4.5%) and Health (1.5%).

[3] Nomis ward profile (2021);ONS Annual Population Survey (2024
[4] ONS Annual Survey of Hours and Earnings (ASHE) 2023, Weekly mean pay – Gross (£) – For all employee jobs – resident analysis
[5] ONS Annual Survey of Hours and Earnings (AHSE) 2023, Weekly mean pay – Gross (£) – For all employee jobs – workplace analysis
[6] Business Register and Employment Survey, (2022)

Table 13.8: Employment by Industry

Industry	Deansgate ward	Manchester	North West
Agriculture, forestry & fishing	0.0%	0.0%	0.4%
Mining, quarrying & utilities	0.8%	0.4%	1.1%
Manufacturing	0.4%	2.8%	8.9%
Construction	1.0%	2.1%	5.1%
Motor trades	0.0%	0.5%	1.6%
Wholesale	1.0%	3.1%	4.4%
Retail	3.5%	7.0%	8.7%
Transport & storage (inc postal)	1.0%	6.1%	4.7%
Accommodation & food services	11.0%	8.7%	7.9%
Information & communication	10.0%	5.6%	3.4%
Financial & Insurance	7.0%	4.2%	2.4%
Property	2.2%	2.8%	1.6%
Professional, scientific & technical	28.0%	13.8%	9.4%
Business administration & support services	19.05	11.7%	8.3%
Public administration & defence	3.05	5.4%	4.9%
Education	4.5%	9.4%	8.0%
Health	1.5%	12.4%	15.1%
Arts, entertainment, recreation & other services	5.0%	3.8%	4.0%
Total	100%	100%	100%

Source: BRES, 2022

13.42. A review of the committed baseline schemes indicates that these would generate a large number of on-site employment through a combination of commercial uses. Through the application of high-level assumptions around these[7], it is estimated that committed baseline schemes could generate in the order of 1,900 FTE net additional jobs within Manchester. This constitutes approximately 0.4% of the district-level employment in 2022.

Unemployment

13.43. Analysis of ONS Claimant Count and Population Estimates shows a current (August 2024) unemployment at 0.9% across the Deansgate ward. This is lower than the levels seen across all comparator areas, with Manchester

[7] HCA Employment Densities Guide, 4th Edition (2015)

(7.3%) and the North West (4.8%).

Occupations and qualifications

13.44. Analysis of ONS Local Labour Force data shows that the largest proportion of workers in the Deansgate ward is in professional occupations (39.4%), followed by associate professional and technical occupations (20.6%) and managers, directors and senior officials (12.7%), compared to Manchester (39.5%, 16.0% and 5.6% respectively). When considering lower-order occupations (SOC 7-9), Deansgate (13.9%) has a lower proportion than Manchester (21.7%) and the North West (21.2%).

13.45. A high proportion of Deansgate residents (60.2%) have Level 4 qualifications (degree) or above, like that of the rest of Manchester at 60.3% (44.4%) for the North West). In addition, Deansgate has a lower proportion (3.3%) of the population with no recognised qualifications, compared to Manchester (4.6%), and the North West (6.7%).

Student Accommodation

13.46. Having been first adopted in 2012, Manchester's Core Strategy is now recommended to be considered alongside the 'Places for Everyone (PfE) Joint Development Plan Document for Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Tameside, Trafford and Wigan 2022 to 2039', which was adopted in March 2024. At the time of the Core Strategy's initial adoption, it was projected that over 3,300 new homes were needed in Manchester each year through until 2027[8]. The Core Strategy also outlined a series of key criteria relevant to the delivery of PBSA schemes, including the need for proximity to universities and local amenities and the requirement that schemes contribute to the wider regeneration potential of strategic areas of priority, including the Oxford Road corridor.

13.47. It is noted that when the Core Strategy and related Student Strategy Implementation Plan were first published, PBSA was identified to be oversupplied in Manchester. However, recent increases in student numbers and more generalised issues within the Private Rental Sector have reversed this trend and placed a renewed emphasis on the need to deliver high-quality and high-density PBSA schemes within proximity to Manchester's leading universities and key strategic areas. Policy H12 of the Core Strategy relates to PBSA and sets out the criteria to be used to guide planning applications for student accommodation and to manage the appropriate delivery of PBSA. The policy aims to ensure that housing has been developed in the city centre and prevents an oversupply of PBSA. MCC has worked with partners to manage the controlled delivery of a limited but sustainable supply of new PBSA, in line with both the university's and local economic growth aspirations.

13.48. An analysis of HESA data from 2021/22[9] suggests that there were 2.5 students to every bed in Manchester as the supply-demand imbalance continues to intensify. Furthermore, a 2023 report by MCC explicitly acknowledges this shortfall and projects that demand for PBSA could be up to 11,320-bed spaces through until 2030, equating to a per annum requirement for the delivery of approximately 1,600 new bed spaces[10]. It is noted, that Council Officers anticipate that a supply of 750 new beds per annum to be sufficient. Additionally, the report identifies several factors contributing to the decline in the quality of PBSA in Manchester. It emphasises the challenges posed by an ageing PBSA market, coupled with a lack of supply and competition. This environment has resulted in insufficient incentives for the refurbishment of existing facilities, thereby limiting enhancements in quality, amenities, and communal spaces.

13.49. For the 2023/24 academic year, Manchester's Purpose-Built Student Accommodation (PBSA) sector remains under significant demand pressure, continuing trends seen previously. Across the city, PBSA availability remains tight due to growing student numbers, while new beds are being added at a slower rate. Currently, there are approximately 27,000[11] PBSA beds, including both university and private-sector options, a figure that hasn't yet kept pace with the increasing demand in the Greater Manchester area.

13.50. Based upon this more recent data and projected PBSA requirements, the delivery of significant bed spaces through this PBSA scheme provides a clear opportunity to support the addressing of existing supply-demand imbalances and to improve the provision of targeted housing within the Oxford Road Corridor of Manchester.

[8] Manchester's Local Development Framework: Core Strategy Development Plan Document (2012)
[9] Higher Education Statistics Agency (2021/22)
[10] MCC Report for Resolution – Purpose Built Student Accommodation in Manchester (2023)
[11] MCC Report for Resolution (2020) states 24,000 in 2020/21 – with latest evidence suggesting an increase on this figure

13.51. A review of the committed baseline schemes indicates that the total numbers of student bedspaces that are to be provided is 1,950. This represents 7.2% of the total amount of PBSA bedspaces available to Manchester students for the 2023/24 academic year. It also represents just over 122% of the projected annual supply requirement indicated by MCC to keep pace with demand.

Healthcare Provision

13.52. The Proposed Development is located within the Deansgate ward where there are 7 General Practitioner (GP) practices, with a total of 95,287 registered patients and 46 GPs. This equates to an average patient list size of 2,071 patients per GP. This average list size for the CCG is above the average target list size across England, as assessed by the Royal College of General Practitioners, which is 1,800 to 2,000. As the CCG has not stated a specific target level of provision, 1,800 to 2,000 patients per GP will be taken as the appropriate benchmark for primary healthcare within the district, though it should be noted that service levels will naturally differ between, rural and urban areas across the country.

13.53. The Chartered Institute of Highways and Transport (CIHT) analysis shows that the typical trip to the GP is 2km. Therefore, a 2km radius around the site has been used as the local catchment to assess impacts on primary healthcare.

Table 13.9: GP Surgeries within 2km of the Proposed Development

Number of GP Surgeries	Total number of registered patients	GPs	Patients per GP	Accepting new patients (%)
7	95,287	46	2,071	100%

Source: NHS Choices

13.54. There are 7 dental practices located within 1.2m of the Proposed Development. Table 13.6 shows that 0 are accepting new NHS patients. The availability of NHS dentists is a current concern nationwide due to skills shortages and will require investment in training and funding to resolve. The Government has recently put in place new policy measures[12] to address this. NHS Manchester[13] CCG has 61 dentists per 100,000 population compared with only 49 for the North West[14].

Table 13.10: Dental Surgeries within 2km of the Proposed Development

Number of Dental Surgeries	Number accepting new NHS patients (%)[15]	Number not accepting new NHS patients
7	0%	100%

Source: NHS Choices

Identification and Evaluation of Likely Significant Effects

Construction Phase

Temporary Construction Employment

13.55. To deliver the Proposed Development, it is expected there will be construction expenditure over an approximately 3-year construction programme from 2025 up to 2028. Therefore, this effect is considered a short to medium-term temporary effect during this phase.

13.56. Based upon the expected level of construction expenditure, the number of total gross jobs supported during the enabling, demolition and construction phase is estimated. The analysis draws upon data from the ONS

[12] Faster, simpler and fairer: our plan to recover and reform NHS dentistry (February 2024)
[13] CCG Entity Code – 14L
[14] NHS (2024) NHS Dental Statistics 2022-2023 - Workforce
[15] All Dental Surgeries accepting new patients when availability allows

Construction Statistics for Great Britain (2022), which provides turnover estimates for the construction sector and total employees. To derive a cost-per-job, the construction sector turnover (in 2023 prices) is divided by the total number of persons employed in the construction sector.

13.57. In total, it is estimated that construction expenditure could support 763 person-years of temporary construction employment, equating to 254 FTEs per annum across the construction period.

13.58. In determining the net additional jobs generated through the construction phase, each of the additionality factors (leakage, displacement and multiplier effects) has been assessed. There is no deadweight in the construction phase as there is no existing construction employment on-site. Overall, it is estimated that the redevelopment proposals would create 191 net additional construction jobs at the Manchester level

13.59. The construction sector across the North West currently supports around 179,000 FTE jobs. The estimated annual construction jobs supported during the period of work could therefore be expected to represent less than 1% of all regional employment in the construction sector. Given the small percentage, construction activity is not expected to stimulate a noticeable change in the baseline conditions at the regional level, and as such, the magnitude of the impact is assessed to be Negligible.

13.60. The assessment of the sensitivity of the receptor is moderate, this would create a direct, temporary and short-term effect at the North West level.

Table 13.11: Temporary Construction Employment - Scenario Assessment

Scenario	Comment	Magnitude of effect	Significance of effect
Scenario 1 (Existing baseline)	Considering the scale of development across the 14 committed baseline schemes identified, it is reasonable to assume that this will lead to an increased demand for construction labour at the regional level (North West). This increase in activity is assessed to represent a minor magnitude of change.	Minor	Minor Beneficial (Not Significant), direct (D), temporary (T) and short-term (ST)
Scenario 2 (Scenario 1 + Proposed Development)	Alongside the proposed development, the increased demand for temporary construction employment is assessed as representing a minor magnitude of change.	Minor	Minor Beneficial (Not Significant), D, T, ST
Scenario 3 (Scenario 2 + cumulative developments)	See the section on cumulative impacts	N/A	N/A

Short-term increase in economic output

13.61. The GVA impact per annum generated through the Construction Phase has been derived from the anticipated construction-related expenditure. Reference has been made to the ONS Annual Business Survey and input-output supply and use tables for the UK, which suggest that £1 of construction-related expenditure generates approximately £0.39 of GVA. An allowance has been made for deadweight, displacement, and multiplier effects in line with the analysis of employment impact above. However, as GVA is a workplace-based measure, no adjustment has been made for leakage.

13.62. Overall, as set out in Table 10.6 it is estimated that the Proposed Development would generate a net additional GVA of around £26.08 million. This is considered to be of a Negligible magnitude (not significant) at the regional level.

Table 13.12: Net additional GVA - Scenario Assessment

Scenario	Comment	Magnitude of effect	Significance of effect

Scenario 1 (Existing Baseline)	Whilst unable to quantify the increase in economic output as a result of the construction phases of the committed baseline developments. Construction expenditure will increase the economic output of the sector at the regional level. This increase in activity is assessed to represent a minor magnitude of change.	Minor	Minor Beneficial (Not Significant), D, T, ST
Scenario 2 (Scenario 1 + Proposed Development)	Alongside the proposed development, the increased construction-related economic output is assessed as representing a minor magnitude of change.	Minor	Minor Beneficial (Not Significant), D, T, ST
Scenario 3 (Scenario 2 + cumulative developments)	See the section on cumulative impacts	N/A	N/A

Training and Apprenticeship Opportunities

13.63. During the Construction Phase, the Applicant is expected to engage with organisations such as MCC to coordinate and support local training and apprenticeship opportunities.

13.64. The Applicant will produce a Local Labour Agreement, which will be entered into with MCC. This will set out how the Applicant will work with the Local Apprenticeship providers to initiate and sustain various apprenticeships throughout the duration of the Project. Evidence from previous schemes suggests that between 6-10 apprenticeship starts could be supported per annum, ultimately leading to skilled full-time roles.

13.65. In Manchester, there were 150 apprenticeship starts in the construction, planning and built environment sectors in 2023/24. Assuming a worst-case scenario of 6 apprenticeships in the construction phase of the Proposed Development, this equates to 4% of all starts.

13.66. In this context, the impact of the Proposed Development during the Construction Phase regarding training and apprenticeship opportunities is of a Minor Beneficial (not significant) magnitude.

Table 13.13: Training and Apprenticeship Opportunities - Scenario Assessment

Scenario	Comment	Magnitude of effect	Significance of effect
Scenario 1 (Existing Baseline)	Whilst unable to quantify the number of apprenticeships starting with the committed baseline schemes, it is reasonable to assume that across Manchester, the construction sector will support additional training and apprenticeship opportunities. This increase in activity is assessed to represent a minor magnitude of change.	Minor	Minor Beneficial (Not Significant), D, T, ST
Scenario 2 (Scenario 1 + Proposed Development)	Alongside the Proposed Development, the increased demand for training and apprenticeship opportunities is assessed as representing a minor magnitude of change.	Minor	Minor Beneficial (Not Significant), D, T, ST
Scenario 3 (Scenario 2 + cumulative developments)	See the section on cumulative impacts	N/A	N/A

Effects on Local Services and Facilities

13.67. Construction employment effects will be temporary in nature and a proportion of the jobs are expected to be taken up by existing residents, resulting in limited change in demand for services. For those workers living outside of the local authority area, it is anticipated that the majority will commute to Manchester, including from the Greater Manchester and wider north west region, rather than relocate with their families. It is therefore unlikely that the Construction Phase will result in noticeable additional demand for community services and facilities including GP surgeries and Dental practices. Overall, the magnitude is considered to be a Negligible (not significant) magnitude.

Table 13.14: Effect on Local Services and Facilities - Scenario Assessment

Scenario	Comment	Magnitude of effect	Significance of effect
Scenario 1 (Existing Baseline)	Due to the transient nature of construction employment, it is assessed that employees in the construction phase will either be already registered with a GP and Dentist in the study area or remain at their home GP/Dentist.	Negligible	Negligible (Not Significant), D, T, ST
Scenario 2 (Scenario 1 + Proposed Development)	The Proposed Development is unlikely to increase the demand for primary healthcare during construction, this has been assessed to be negligible.	Negligible	Negligible (Not Significant), D, T, ST
Scenario 3 (Scenario 2 + cumulative developments)	See the section on cumulative impacts	N/A	N/A

Operational Phase

Operational employment

13.68. It is anticipated that the Proposed Development will bring forward 861 new purpose-built student bedrooms. In addition, there is expected to be a significant level of ancillary/amenity floorspace within the development, however, this has been excluded from the assessment due to the limited socio-economic benefit it would bring.

13.69. Operational employment supported by the student accommodation element of the Proposed Development has been provided by VITA Student as part of their Operational Management Plan.

13.70. Further to the direct employment associated with the PBSA, the Development will have indirect/induced 'multiplier' effects through supply chain spending, procurement and employee spending.

13.71. The Proposed Development has the potential to support 25 gross FTE jobs once fully operational. Once additionality factors have been applied to the gross employment, the Proposed Development is likely to generate 10 net additional FTE jobs in Manchester.

13.72. The GVA impact of on-site employment is estimated at £0.96m per annum. These represent significantly less than 0.1% of the employment levels (and associated GVA) at the local economy (Manchester) level. The magnitude of change is therefore assessed to be Negligible at the District level.

13.73. With the sensitivity of the receptor identified as moderate, this would give rise to a direct, long term and Minor Beneficial (Not Significant) effect at the district level.

Table 13.15: Operational employment and economic output (On-site) - Scenario Assessment

Scenario	Comment	Magnitude of effect	Significance of effect
Scenario 1 (Existing site with committed baseline developments)	An estimated 1,800 net additional jobs could be supported by baseline schemes, representing an increase of 0.4% of jobs across the district. This represents a minor magnitude of change.	Minor	Minor Beneficial Not Significant) at the district level over the long term.
Scenario 2 (Scenario 1 plus proposed development)	The levels of employment generation supported by the Proposed Development are negligible in the context of the level that could be generated by the baseline developments.	Minor	Minor Beneficial (Not Significant) at the district level over the long term.
Scenario 3 (Scenario 2 + cumulative developments)	See the section on cumulative impacts	N/A	N/A

Additional local spend

13.74. The development will create 861 purpose-built student accommodation bedrooms. This is in high demand within Manchester[16]. Based on the University of Manchester's estimated living costs for undergraduate students[17] suggests a gross annual spending of £2.79m[18] per year. Once additionality factors have been applied, the net additional local expenditure is £1.57m per annum, which has the potential to support 18 FTE net jobs within the local economy, within the relevant sectors[19] and GVA per year of £0.74m.

13.75. These effects represent significantly less than 0.1% of the employment levels (and associated GVA) at the local economy (Manchester) level. The magnitude of change is therefore assessed to be Negligible at the District level.

Table 13.16: Additional local spending employment effects (Off-site) - Scenario Assessment

Scenario	Comment	Magnitude of effect	Significance of effect
Scenario 1 (Existing site with committed baseline developments)	The cumulative baseline assessment would result in the delivery of 4,600 new homes and 1,089 student bedspaces that would generate additional local expenditure and in turn support employment within the district. In total, the committed baseline schemes could support a net additional local expenditure of £32.5m per annum, supporting in the order of 372 net additional FTE jobs.	Minor	Minor Beneficial (Not Significant) at the district level over the long term.

[16] Cushman & Wakefield (2022) Student Needs Assessment Manchester
[17] https://www.manchester.ac.uk/study/student-life/experience/cost-of-living/
[18] Excludes cost of accommodation
[19] Retail, accommodation and food services, arts, entertainment and recreation and other service sectors

Scenario 2 (Scenario 1 plus proposed development)	Alongside the committed baseline schemes, the Proposed Development will deliver a further 861 new student bed spaces, this would increase the total net additional expenditure to approximately £34m per annum, and a further 18 jobs supported taking the total to 390.	Minor	Minor Beneficial (Not Significant) at the district level over the long term.
Scenario 3 (Scenario 2 + cumulative developments)	See the section on cumulative impacts	N/A	N/A

Effect on existing healthcare capacity

13.76. The Proposed Development is expected to yield 861 student residents in the area. When assessing the worst-case scenario, it is assumed that all these students would be additional (not registered with GPs in the LIA). This would increase the number of registered patients per GP in the practices identified within the baseline study from 2,071 to 2,091 (+0.9%). However, it is anticipated that many new students occupying the Proposed Development will remain registered with their home GPs.

13.77. Considering the large student population, there is the provision of student-specific healthcare at Manchester universities. Specifically, the University of Manchester and Manchester Metropolitan University play a role in coordinating the provision of primary healthcare services for students. For instance, UoM launched a new GP service on campus for the 2022/23 year that allows students to register as patients and access a range of non-emergency services by appointment. These include examinations, medication prescriptions, vaccinations, and referrals to other medical specialists. The service runs in partnership with The Robert Darbishire Practice, located 1.5 miles from the proposed development. This practice is currently operating at a ratio of c.2,060 patients to FTE GP, above the benchmark of 1,800 patients per FTE GP. UoM also provides, through its Occupational Health Service, a confidential service to ensure the health of students (and staff) by assessing and advising on fitness for work, training and study, to ensure that health issues are effectively managed. Given the availability of services through the University, the increase in university students requiring the services of GPs would be limited. MMU is yet to provide a dedicated GP service to its students; however, it provides a range of other health services through its Mental Health and Wellbeing service.

13.78. Considering this, the magnitude of the effect is assessed as Minor. Moderate receptor sensitivity would mean a direct long-term and Minor Adverse (Not Significant) effect at the local level.

13.79. The existing dental provision cannot support additional patients. This is a national issue, with Government policy objectives in place to increase the capacity of NHS dentists. At the local level, this has low receptor sensitivity, which would mean a direct long-term and Negligible (Not Significant) effect at the local level.

Table 13.17: Effect on Existing Healthcare Capacity - Scenario Assessment

Scenario	Comment	Magnitude of effect	Significance of effect
Scenario 1 (Existing site with committed baseline developments)	Committed baseline schemes will deliver approximately 4,600 homes which, if assuming a rough population yield of 1.5 persons per home (considered reasonable given city centre location) could yield an increased population of c.6,900. Combined with committed baseline student bedspaces this could yield a population increase of approximately 8,000. Assuming that none of these residents/students are already registered at	Minor	Minor Adverse (Not Significant), D, LT

Scenario	Comment	Magnitude of effect	Significance of effect
	practices within the LIA, this would lead to an increase in the number of registered patients per FTE GP from 2,071 to 2,245 (+8.4%). Given the scale of the population increases it has been assumed that the committed baseline schemes that will yield an increase in residents will be required to mitigate the impacts through planning contributions (Section 106) negotiated by Manchester City Council, who work with NHS England and other healthcare providers to assess the impact of new development on healthcare provision. For this assessment, it is assumed that the committed baseline developments will offset their impact on primary healthcare by delivering new NHS floorspace or planning contributions. The magnitude of the effect is therefore considered to be negligible.		
Scenario 2 (Scenario 1 plus proposed development)	Alongside committed baseline schemes, the Proposed Development could lead to a population increase of approximately 8,850. Assuming that none of these residents/students are already registered at practices within the LIA, this would lead to an increase in the number of registered patients per FTE GP from 2,071 to 2,264 (+9.3%). As alluded to in scenario 1, it has been assumed that committed baseline development will mitigate their impacts in relation to primary healthcare facilities. Within this context, the Proposed Development has been assessed in isolation and therefore is deemed to have a Negligible impact.	Minor	Minor Adverse(Not Significant), D, LT
Scenario 3 (Scenario 2 + cumulative developments)	See the section on cumulative impacts	N/A	N/A

Demand for student accommodation

13.80. An additional 861 bedspaces represent 3.2% of the reported supply of 26,800 bedspaces in the study area and nearly 54% of MCC's projected annual supply (1,600 per annum up to 2030)/(2% Annual growth rate of 11,320) requirement to keep pace with demand for student accommodation in Manchester.

13.81. The MCC Report for Resolution references the overall quality of PBSA stock as being poor compared to other university cities. In this context, the addition of new, high-quality PBSA in a city centre location represents an important contribution to addressing this need. Therefore, in making a judgement on both quantity and quality considerations, it is assessed that an additional 861 bedspaces constitute a moderate magnitude of impact.

13.82. This would contribute a direct, long term and major beneficial (significant) effect at the district level.

13.83. The effect of the assessment presented above on all scenarios is highlighted in Table 13.19 below:

Table 13.19: Student Accommodation Supply – Scenario Assessment

Scenario	Comment	Magnitude of effect	Significance of effect
Scenario 1 (Existing site with committed baseline developments)	Committed baseline schemes will provide 7.3% of the total amount of PBSA bedspaces available to Manchester students for the 2022/23 academic year. It also represents just over 68% of the projected annual supply requirement indicated by MCC (2% Annual growth rate of 11,320) to keep pace with demand.	Moderate	Major Beneficial (Significant), D, LT
Scenario 2 (Scenario 1 plus proposed development)	Alongside committed baseline schemes, the Proposed Development will provide 1,950 bedspaces, constituting 7.2% of the total amount of PBSA available to Manchester students for the 2023/24 academic year. It also represents just over 122% of the projected annual supply requirement indicated by MCC (2% Annual growth rate of 11,320) to keep pace with demand. This therefore constitutes a major magnitude of change.	Major	Major Beneficial (Significant), D, LT
Scenario 3 (Scenario 2 + cumulative developments)	See the section on cumulative impacts	N/A	N/A

Cumulative Effects

13.84. All of the cumulative developments identified have the potential to interact with the Proposed Development.

13.85. Analysis of the cumulative developments shows that collectively they could potentially deliver:

- 5,950 student bedspaces;
- 5,900 new homes;
- 110,000 sqm of office accommodation;
- 2,500 sqm of retail or food and beverage accommodation; and

8,000 sqm of leisure and community facilities.

13.86. The assessment of cumulative effects adopts a similar approach to the main assessment presented above. Given the breadth of cumulative developments identified it is considered that a proportionate approach is to adopt a consistent approach to assessment across different socio-economic effects. The assessment is necessarily approximate to provide a sense of the scale of impact relative to the baseline position alongside the Proposed Development. Table 13.20 considers the cumulative effects of the Proposed Development alongside committed baseline and cumulative developments, plus mitigation (Scenario 3).

Table 13.20: Assessment of cumulative impacts (Scenario 3)

Effect	Comment	Magnitude of effect	Significance of effect
Temporary construction employment	Each cumulative scheme would be expected to generate temporary short-term construction employment and an associated increase in economic output during their construction phases. A detailed assessment of each scheme has not been undertaken due to limited information. Given the unknown construction periods, different peak employment points and uncertainty over constriction starts. Furthermore, the fluctuations in the intensity of labour demand on construction sites can enable contractors to move around between sites, lowering the cumulative peak of the required construction workforce. Conversely, they could all peak simultaneously, however, this is unlikely given the indicative supply pipelines. It is not possible to model at this stage. Due to the size and mobility of the construction labour market, it is not anticipated that the cumulative schemes will have any significant impact on socio-economic factors. The quantitative impact is likely to be Moderate Beneficial and significant	Moderate	Moderate Beneficial (Significant), D, T, ST
Short-term increase in economic output	Whilst unable to quantify the increase in economic output as a result of the construction phases of the committed baseline developments. Construction expenditure will increase the economic output of the sector at the regional level. This increase in activity is assessed to represent a moderate magnitude of change.	Moderate	Moderate Beneficial (Not Significant), D, T, ST
Training and apprenticeship opportunities	Whilst unable to quantify the number of apprenticeships starting with the committed baseline schemes, it is reasonable to assume that across Manchester, the construction sector will support additional training and apprenticeship opportunities. This increase in activity is assessed to represent a minor magnitude of change.	Minor	Minor Beneficial (Not Significant), D, T, ST
Effect on local services and	Due to the transient nature of construction employment, it is assessed that employees in the construction phase will either be already registered	Minor	Minor Beneficial (Not Significant),

Effect	Comment	Magnitude of effect	Significance of effect
facilities	with a GP and Dentist in the study area or remain at their home GP/Dentist.		D, T, ST
Employment generation during the operational phase (direct, indirect, and induced effects)	An estimated 6,400 net additional jobs that could be generated by committed baseline and cumulative developments represent 1.5% of the total employment at the district level. This represents a minor magnitude of change.	Moderate	Moderate Beneficial (Not Significant), D, P, LT
Additional Local Spend	An estimated 6,400 net additional jobs that could be generated by committed baseline and cumulative developments represent 1.5% of the total employment at the district level. This represents a minor magnitude of change.	Minor	Minor Beneficial (Not Significant), D, P, LT
Demand for Primary Healthcare	Alongside committed baseline schemes, the cumulative developments could lead to a population increase of approximately 23,500. Assuming that none of these residents/students are already registered at practices within the LIA, this would lead to an increase in the number of registered patients per FTE GP from 2,071 to 2,586 (25%) Given the scale of the population increases it has been assumed that the committed baseline schemes that will yield an increase in residents will be required to mitigate the impacts through planning contributions (Section 106) negotiated by Manchester City Council, who work with NHS England and other healthcare providers to assess the impact of new development on healthcare provision. For this assessment, it is assumed that the committed baseline developments will offset their impact on primary healthcare, through either delivering new NHS floorspace or through planning contributions. The magnitude of the effect is therefore considered to be negligible.	Minor	Minor Adverse (Not Significant), D, P, LT
Demand for Student Accommodation	Alongside committed baseline schemes, the cumulative developments will provide c. 7,900 PBSA bedspaces, constituting 30% of the total amount of PBSA bedspaces available to Manchester students for the 2023/24 academic year. It also represents around 5 years of supply according to the projected annual supply requirement indicated by MCC (1,600 per annum) to keep pace with demand. This therefore constitutes a major magnitude of change.	Major	Major Beneficial (Significant) D, P, LT

Mitigation Measures

Construction Phase

13.87. No significant adverse effects have been identified during the construction phase assessment of the Proposed Development

Operational Phase

13.88. No significant adverse effects have been identified during the operational phase of the Proposed Development.

Residual Effects

Construction Phase

13.89. No mitigation measures have been recommended and as such, the Residual Effect and Significance remain the same as the initial assessment.

Table 13.21: Residual Effects - Construction Phase (Scenario 2)

Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (Temporary/Permanent)
Temporary construction employment	Individuals seeking employment	N/A	N/A	Minor Beneficial (Not Significant), D, T, ST
Short-term increase in economic output	The local economy	N/A	N/A	Minor Beneficial (Not Significant), D, T, ST
Training and apprenticeship opportunities	Individuals seeking employment	N/A	N/A	Minor Beneficial (Not Significant), D, T, ST
Effect on local services and facilities	Primary healthcare facilities	N/A	N/A	Negligible (Not Significant), D, T, ST

Operational Phase

13.90. No mitigation measures have been recommended and as such, the Residual Effect and Significance remain the same as the initial assessment.

Table 13.22: Residual Effects - Operational Phase (Scenario 2)

Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (Temporary/Permanent)
Employment generation during the operational phase (direct, indirect, and induced effects)	Individuals seeking employment The local	N/A	N/A	Minor Beneficial (Not Significant) at the district level over the long term.

	economy			
Additional Local Spend	Individuals seeking employment The local economy	N/A	N/A	Minor Beneficial (Not Significant) at the district level over the long term.
Demand for Primary Healthcare	Primary healthcare facilities	N/A	N/A	Negligible (Not Significant) at the district level over the long term.
Demand for Student Accommodation	Local Student Population	N/A	N/A	Major Beneficial (Significant) at the district level over the long term.

Monitoring

13.91. No significant adverse effects have been identified and no ongoing monitoring is proposed.

Reference List

13.92. This ES Chapter has been prepared in reference to the following:

- Homes and Communities Agency's (HCA's) Employment Densities Guide, 3rd Edition (2015);
- ONS Construction Statistics for Great Britain (2022);
- The Department for Levelling Up, Housing and Communities (DLUHC) Appraisal Guide;
- Department for Business, Innovation and Skills (BIS) Occasional Paper No.1;
- Professional judgement;
- Annual Population Survey;
- ONS Business Register and Employment Survey;
- Annual Business Survey;
- NHS Choices;
- Faster, simpler and fairer: our plan to recover and reform NHS dentistry (February 2024) sets out the government's commitment to improving dentistry across the country;
- Unite-AR23-Web-Ready-PDF.pdf (unitegroup.com);
- Living costs at The University of Manchester;
- Experian Regional Data Forecasts - June 2024;
- NHS (2024) NHS Dental Statistics 2022-2023 - Workforce Statistics;
- Manchester's Local Development Framework: Core Strategy Development Plan Document (2012);

- Places for Everyone (PfE) Joint Development Plan Document for Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Tameside, Trafford and Wigan 2022 to 2039 (2024);
- Higher Education Statistics Agency (2021/22); and
- MCC Report for Resolution - Purpose Built Student Accommodation in Manchester (2023)

14. Summary of Residual Impacts

Introduction

14.1. This chapter summarises the residual effects that are set out in each individual relevant chapter.

Townscape and visual impact

Construction Phase

Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (Temporary/Permanent)
Negligible	City Centre townscape character areas TCA7	none	N/A	Negligible Temporary
Minor-Negligible adverse	Central Arc (TCA8)	none	N/A	Minor-Negligible adverse - Temporary
Minor-Negligible adverse	Oxford Road Corridor	none	N/A	Minor-Negligible adverse - Temporary
Minor adverse	First St Masterplan Area	none	N/A	Minor adverse -Temporary
Negligible	Urban Grain	none	N/A	Negligible -Temporary
Negligible	Land Use	none	N/A	Negligible -Temporary
Minor adverse	Building Heights	none	N/A	Minor adverse -Temporary
Negligible	Connections and Open Space	none	N/A	Negligible -Temporary
Minor adverse	Heritage Townscapes Conservation Areas Listed Buildings	none	N/A	Minor adverse -Temporary
Minor/Moderate - Moderate/Major neutral	View 1 Highway and Pedestrian receptors	none	N/A	Minor/Moderate - Moderate/Major neutral Temporary
Minor-Moderate neutral	View 2 Highway, Pedestrian, Residential	none	N/A	Minor-Moderate neutral Temporary
Minor-Moderate neutral	View 3 Highway, Pedestrian, Residential	none	N/A	Minor-Moderate neutral Temporary
Minor/Moderate-Moderate/Major neutral	View 4 Highway, Pedestrian, Residential	none	N/A	Minor/Moderate-Moderate/Major neutral Temporary
Minor/Moderate-Moderate/Major neutral	View 5 Highway, Pedestrian, Residential	none	N/A	Minor/Moderate-Moderate/Major neutral Temporary
Minor-Moderate neutral	View 6 Highway, Pedestrian, Residential	none	N/A	Minor-Moderate neutral Temporary
Moderate/Major neutral	View 7 Pedestrian, Recreation	none	N/A	Moderate/Major neutral Temporary

Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (Temporary/Permanent)
Minor/Moderate-Moderate/Major neutral	View 8 Highway, Pedestrian, Residential	none	N/A	Minor/Moderate-Moderate/Major neutral Temporary
Minor/Moderate-Moderate/Major neutral	View 9 Highway, Pedestrian, Residential	none	N/A	Minor/Moderate-Moderate/Major neutral Temporary
Minor/Moderate-Minor neutral	View 10 Local Centre, Public Highway, Office	none	N/A	Minor/Moderate-Minor neutral Temporary
Minor/Moderate/Major neutral	View 11 Public Highway	none	N/A	Minor/Moderate/Major neutral Temporary
Minor-Moderate adverse	View 12 Residential, Highway, Pedestrians	none	N/A	Minor-Moderate adverse Temporary
Minor-Moderate neutral	View 13 Residential, Highway, Pedestrians	none	N/A	Minor-Moderate neutral Temporary
Minor/Moderate -Minor neutral	View 14 Residential, Highway, Pedestrians	none	N/A	Minor/Moderate-Minor neutral Temporary
Minor/Moderate -Minor neutral	View 15 Highway, Commercial	none	N/A	Minor/Moderate-Minor neutral Temporary
Minor neutral	View 16 Highway	none	N/A	Minor neutral Temporary

Operational Phase

Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (Temporary/Permanent)
Minor beneficial	City Centre townscape character areas TCA7	none	N/A	Minor beneficial
Minor beneficial	Central Arc (TCA8)	none	N/A	Minor beneficial
Minor beneficial	Oxford Road Corridor	none	N/A	Minor beneficial
Minor-Moderate beneficial	First St Masterplan Area	none	N/A	Minor-Moderate beneficial
Minor beneficial	Urban Grain	none	N/A	Minor beneficial
Minor beneficial	Land Use	none	N/A	Minor beneficial
Minor-Moderate adverse with beneficial elements	Building Heights	none	N/A	Minor-Moderate adverse with beneficial elements
Minor beneficial	Connections and Open Space	none	N/A	Minor beneficial
Minor-Moderate neutral	Heritage Townscapes Conservation Areas	none	N/A	Minor-Moderate neutral

Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (Temporary/Permanent)
	Listed Buildings			
Minor/Moderate - Moderate/Major beneficial	View 1 Highway and Pedestrian receptors	none	N/A	Minor/Moderate - Moderate/Major beneficial
Minor-Moderate neutral	View 2 Highway, Pedestrian, Residential	none	N/A	Minor-Moderate neutral
Minor-Moderate neutral	View 3 Highway, Pedestrian, Residential	none	N/A	Minor-Moderate neutral
Minor/Moderate-Moderate/Major beneficial	View 4 Highway, Pedestrian, Residential	none	N/A	Minor/Moderate-Moderate/Major neutral beneficial
Minor/Moderate-Moderate/Major beneficial	View 5 Highway, Pedestrian, Residential	none	N/A	Minor/Moderate-Moderate/Major beneficial
Minor-Moderate neutral	View 6 Highway, Pedestrian, Residential	none	N/A	Minor-Moderate neutral
Moderate/Major neutral	View 7 Pedestrian, Recreation	none	N/A	Moderate/Major neutral
Minor/Moderate-Moderate/Major beneficial	View 8 Highway, Pedestrian, Residential	none	N/A	Minor/Moderate-Moderate/Major beneficial
Minor/Moderate-Moderate/Major neutral	View 9 Highway, Pedestrian, Residential	none	N/A	Minor/Moderate-Moderate/Major neutral
Minor/Moderate-Minor neutral	View 10, Public Highway, Office	none	N/A	Minor/Moderate-Minor neutral
Minor/Moderate/Major neutral	View 11 Public Highway	none	N/A	Minor/Moderate/Major neutral
Minor-Moderate adverse	View 12 Residential, Highway, Pedestrians	none	N/A	Minor-Moderate adverse
Minor-Moderate neutral/beneficial	View 13 Residential, Highway, Pedestrians	none	N/A	Minor-Moderate neutral/beneficial
Minor/Moderate -Minor neutral	View 14 Residential, Highway, Pedestrians	none	N/A	Minor/Moderate-Minor neutral
Minor/Moderate -Minor neutral	View 15 Highway, Commercial	none	N/A	Minor/Moderate-Minor neutral
Minor neutral	View 16	none	N/A	Minor neutral

Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (Temporary/Permanent)
	Highway			

Air Quality

Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (Temporary/Permanent)
High	Construction Phase - Dust Soiling	The mitigation measures identified in Section 8.84 and detailed in Technical Appendix 7.1 (Appendix C) would ensure that the residual effects of nuisance dust soiling and PM_{10} health effects from all activities within the construction stage would have a negligible effect.	Measures implemented during construction phase via best practice measures	Negligible (Not significant) Temporary and Short-Term
High	Construction Phase - Human Health			Negligible (Not significant) Temporary and Short-Term

Noise and Vibration

Likely Significant Effect	Receptor(s)	Mitigation Measure	Residual Effect
Construction Phase			
Negligible to moderate adverse construction noise	Local residents	Para. 8.96 & 8.97: Solid screening around Site. Communication with City Council and local residents. Application of 'Best Practicable Means' with regard to noise control	Negligible to minor adverse construction noise effects
Operational Phase			
Negligible building services plant noise effects	Residential properties	Para. 8.92: Adherence to environmental noise limits for plant	Negligible building services plant noise effects
Increase in road traffic noise on local roads	Residential properties	-	Negligible

Daylight / Sunlight / Overshadowing

Construction Phase

14.2. Since the potential daylight and sunlight effects relating to construction works will gradually increase to the potential effects identified for the completed Proposed Development, the interim construction effects have not been assessed quantitatively as it is considered that the completed Proposed Development represents the

worst-case assessment in terms of likely daylight and sunlight.

14.3. During the construction phase, the daylight and sunlight effects will gradually change from the baseline condition to those impacts (where present) with the Proposed Development in place, which is described below in the operational phase.

Operational Phase

14.4. On the basis that no mitigation measures are proposed, the Residual Effects of the Proposed Development on the Daylight and Sunlight amenity of the neighbouring sensitive receptors remain as per the Operational Phase effects identified earlier in this chapter, and summarised in the table below:

Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (Temporary/Permanent)
Daylight				
Minor Adverse Impact on daylight amenity	Plot 10B First Street	None Proposed	None Proposed	Not Significant and Permanent
Minor Adverse Impact on daylight Amenity	Plot 11 First Street	None Proposed	None Proposed	Not Significant and Permanent
Sunlight				
Minor Adverse Impact on sunlight Amenity	Plot 10B First Street	None Proposed	None Proposed	Not Significant and Permanent
Negligible Impact on sunlight amenity	Plot 11 First Street	None Proposed	None Proposed	Not Significant and Permanent

Wind Microclimate

Construction Phase

14.5. There is generally a negligible effect of the Development during construction and that effect is not significant.

Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (Temporary/Permanent)
Negligible effects	All	None	N/A	Negligible effects

Operational Phase

Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (Temporary/Permanent)
Exceedance of safety criteria	Within Hulme Street and Newcastle Street	Wind baffles, 1.8 metres wide, 3 metres tall, 50% solid	Secured via mitigations built into the approved plans and via Planning Condition requiring that final wind mitigation measures	Negligible, permanent

Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (Temporary/Permanent)
		Fins, 0.5 metres wide, 1.8 metres tall Hedges, 2 metres wide, up to 1.2 metres tall Hedges, 0.5 metres wide, up to 1.2 metres tall 4 × 4-metre-tall evergreen trees	to be submitted and approved prior to development commencing and implemented prior to occupation of the Proposed Development.	
Exceedance of safety criteria	Along Medlock Street adjacent to Site	Canopy, 2.5 metres wide, placed 4 metres above ground, 75% solid Canopy, 2 metres wide, placed 4 metres above ground, 75% solid Wind baffles, 1.8 metres wide, 3 metres tall, 50% solid Hedges, 0.5 metres tall, 1 metre wide, placed on a planter, 0.5 metres tall, 1 metre wide	Secured via mitigations built into the approved plans and via Planning Condition requiring that final wind mitigation measures to be submitted and approved prior to development commencing and implemented prior to occupation of the Proposed Development.	Negligible, permanent
Exceedance of safety criteria	South of Plot 9A	Canopy, 2.5 metres wide, placed 4 metres above ground, 75% solid Canopy, 2 metres wide, placed 4 metres above ground, 75% solid	Secured via mitigations built into the approved plans and via Planning Condition requiring that final wind mitigation measures to be submitted and approved prior to development commencing and implemented prior to occupation of the	Negligible, permanent

Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (Temporary/Permanent)
		Wind baffles, 1.8 metres wide, 3 metres tall, 50% solid Hedges, 0.5 metres tall, 1 metre wide, placed on a planter, 0.5 metres tall, 1 metre wide	Proposed Development.	
Exceedance of safety criteria	Medlock Street central reservation	Canopy, 2.5 metres wide, placed 4 metres above ground, 75% solid Canopy, 2 metres wide, placed 4 metres above ground, 75% solid Wind baffles, 1.8 metres wide, 3 metres tall, 50% solid Hedges, 0.5 metres tall, 1 metre wide, placed on a planter, 0.5 metres tall, 1 metre wide	Secured via mitigations built into the approved plans and via Planning Condition requiring that final wind mitigation measures to be submitted and approved prior to development commencing and implemented prior to occupation of the Proposed Development.	Negligible, permanent
Exceedance of comfort criteria	Main entrance to Proposed Development	Recessed main entrance	Secured via mitigations built into the approved plans and via Planning Condition requiring that final wind mitigation measures to be submitted and approved prior to development commencing and implemented prior to occupation of the Proposed Development.	Negligible, permanent

Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (Temporary/Permanent)
Exceedance of comfort criteria	Secondary entrances to the southwest and northwest of the Proposed Development	Canopy, 2.5 metres wide, placed 4 metres above ground, 75% solid Canopy, 2 metres wide, placed 4 metres above ground, 75% solid Wind baffles, 1.8 metres wide, 3 metres tall, 50% solid Hedges, 0.5 metres tall, 1 metre wide, placed on a planter, 0.5 metres tall, 1 metre wide	Secured via mitigations built into the approved plans and via Planning Condition requiring that final wind mitigation measures to be submitted and approved prior to development commencing and implemented prior to occupation of the Proposed Development.	Minor adverse, permanent
Exceedance of comfort criteria	Thoroughfares along Medlock Street	Canopy, 2.5 metres wide, placed 4 metres above ground, 75% solid Canopy, 2 metres wide, placed 4 metres above ground, 75% solid Wind baffles, 1.8 metres wide, 3 metres tall, 50% solid Hedges, 0.5 metres tall, 1 metre wide, placed on a planter, 0.5 metres tall, 1 metre wide	Secured via mitigations built into the approved plans and via Planning Condition requiring that final wind mitigation measures to be submitted and approved prior to development commencing and implemented prior to occupation of the Proposed Development.	Minor adverse, permanent
Exceedance of comfort criteria	Thoroughfares / cycleways within Newcastle Street & Hulme Street	Wind baffles, 1.8 metres wide, 3 metres tall, 50% solid	Secured via mitigations built into the approved plans and via Planning	Minor adverse, permanent

Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (Temporary/Permanent)
		Fins, 0.5 metres wide, 1.8 metres tall Hedges, 2 metres wide, up to 1.2 metres tall Hedges, 0.5 metres wide, up to 1.2 metres tall 4 × 4-metre-tall evergreen trees	Condition requiring that final wind mitigation measures to be submitted and approved prior to development commencing and implemented prior to occupation of the Proposed Development.	
Exceedance of comfort criteria	Secondary entrances to Plot 9A	Canopy, 2.5 metres wide, placed 4 metres above ground, 75% solid Canopy, 2 metres wide, placed 4 metres above ground, 75% solid Wind baffles, 1.8 metres wide, 3 metres tall, 50% solid Hedges, 0.5 metres tall, 1 metre wide, placed on a planter, 0.5 metres tall, 1 metre wide	Secured via mitigations built into the approved plans and via Planning Condition requiring that final wind mitigation measures to be submitted and approved prior to development commencing and implemented prior to occupation of the Proposed Development.	Minor adverse, permanent
Exceedance of comfort criteria	Waiting area nearby to Plot 11	Wind baffles, 1.8 metres wide, 3 metres tall, 50% solid Fins, 0.5 metres wide, 1.8 metres tall Hedges, 0.5 metres wide, up to 1.2 metres tall	Secured via mitigations built into the approved plans and via Planning Condition requiring that final wind mitigation measures to be submitted and approved prior to development commencing and implemented prior to occupation of the	Moderate adverse, permanent

Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (Temporary/Permanent)
			Proposed Development.	

Climate Change

Construction Phase

14.6. Initial modelling of embodied carbon emissions has been undertaken which shows a likely Minor Adverse effect on climate change, which is not significant.

Operational Phase

Impact of the Proposed Development on Climate Change

14.7. In line with best practice guidance, mitigation measures for reducing operational energy have already been incorporated into the design of the scheme, therefore residual effects are as per those previously identified. This is summaried in Error! Reference source not found..Error! Reference source not found.

Table 19. Summary of Significant Effects on Climate Change - Operational Phase

Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitgiation	Post Mitigation Residual Effect – Significance and Duration (Temporary/Permenant)
Operational energy related CO2eq emissions	Global Climate	Implementation of Energy Strategy to achieve the target Completion of a TM54 Operational Energy Performance Assessment	Building Design As Built energy modelling	Moderate Adverse Significant Permanent

Human Health

Table 12.5 – Summary of Receptors, Likely Significant Effects, Mitigation Measures, and Residual Effects during the construction phase.

Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (i.e., Temporary/Permanent)
Construction Phase				
Socioeconomics: Employment	Workers & local economy	N/A	N/A	Minor Beneficial Not Significant
TVIA	Local residents	Screening	CEMP	Slight – Moderate
Air Quality	Dust Soiling & Workers' Health	Dust and emissions control	CEMP	Negligible
Noise	Local Residents	Solid screening, noise control	CEMP	Negligible
Wind	Passers by & workers	N/A	N/A	Negligible

Table 12.6 – Summary of Receptors, Likely Significant Effects, Mitigation Measures, and Residual Effects during the operational phase

Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (i.e., Temporary/Permanent)
Operational Phase				
Socioeconomics: Employment	Workers & local economy	N/A	N/A	Minor Beneficial Not Significant
Socioeconomics: Healthcare	Residents	N/A	N/A	Negligible
Open Space & Amenity	Residents & visitors	N/A	N/A	Negligible
Housing – student accommodation	Residents	N/A	N/A	Major Beneficial
Townscape Character	Residents & visitors	N/A	N/A	Slight Beneficial Not Significant
Townscape Heritage	Residents & Visitors	N/A	N/A	Neutral
Views (15 viewpoints)	Residents & visitors	N/A	N/A	Neutral for 10 views Slight/Moderate-Moderate/Major beneficial for 4 views, and Minor-Moderate Adverse – Not Significant
Noise – building services plant & road traffic	Residents & visitors	N/A	N/A	Negligible
Climate Change				
Daylight & Sunlight Amenity	Residents Plot 10B	N/A	N/A	Not Significant
Daylight & Sunlight Amenity	Residents Plot 11	N/A	N/A	Not Significant
Wind – safety & comfort	Residents, visitors	Canopies, fins, baffles, hedges, recessed main entrance	Submitted as part of Proposed Development	Negligible – Minor Adverse Not Significant (1 location at waiting area near Plot 11 Moderate Adverse)

Socio-Economic

Construction Phase

No mitigation measures have been recommended and as such, the Residual Effect and Significance remain the same as the initial assessment.

Table 13.21: Residual Effects - Construction Phase (Scenario 2)

Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (Temporary/Permanent)
Temporary construction employment	Individuals seeking employment	N/A	N/A	Minor Beneficial (Not Significant), D, T, ST

Short-term increase in economic output	The local economy	N/A	N/A	Minor Beneficial (Not Significant), D, T, ST
Training and apprenticeship opportunities	Individuals seeking employment	N/A	N/A	Minor Beneficial (Not Significant), D, T, ST
Effect on local services and facilities	Primary healthcare facilities	N/A	N/A	Negligible (Not Significant), D, T, ST

Operational Phase

14.8. No mitigation measures have been recommended and as such, the Residual Effect and Significance remain the same as the initial assessment.

Table 13.22: Residual Effects - Operational Phase (Scenario 2)

Likely Significant Effect	Receptor(s)	Mitigation Measure	Means of Implementation of Mitigation	Post Mitigation Residual Effect – Significance and Duration (Temporary/Permanent)
Employment generation during the operational phase (direct, indirect, and induced effects)	Individuals seeking employment The local economy	N/A	N/A	Minor Beneficial (Not Significant) at the district level over the long term.
Additional Local Spend	Individuals seeking employment The local economy	N/A	N/A	Minor Beneficial (Not Significant) at the district level over the long term.
Demand for Primary Healthcare	Primary healthcare facilities	N/A	N/A	Negligible (Not Significant) at the district level over the long term.
Demand for Student Accommodation	Local Student Population	N/A	N/A	Major Beneficial (Significant) at the district level over the long term.

15. Type 1 Cumulative Effects

15.1. This section gives consideration to 'Type 1' cumulative effects.

15.2. The assessment is informed by the results of the technical assessments as set out in Chapter 6 - 13 of the ES. It is based on professional opinion and experience of Deloitte in capacity as the EIA coordinator.

15.3. Type 1 cumulative effects are also known as 'inter-project' effects, which are the combined effects arising from the Proposed Development upon a set of defined sensitive receptors.

15.4. Type 2 cumulative effects are considered within the ES technical chapters. The technical chapters also had regard to the potential for Type 1 cumulative effects, however for robustness the results of a standalone assessment of these is provided below.

Legislation, Policy and Guidance

Legislation

15.5. There is no legislation outlining how cumulative effects should be assessed or determined as significant. However, there is a requirement in Part 1, Schedule 4 of the EIA Regulations to consider cumulative effects. Cumulative is not defined in the EIA Directive or Regulations however a dictionary definition is 'increasing by one addition after another'.

15.6. The EIA Regulations require 'a description of the likely significant effects', including cumulative effects.

15.7. In the context of this assessment, 'cumulative effects' refers to the interactions between different likely residual effects resulting from the Proposed Development (Type 1). Both positive and negative effects are considered across the construction and operational phases.

Policy

15.8. As this chapter considers the cumulative effects of the technical areas within the ES, all relevant policy has already been reviewed within the individual technical chapters.

Guidance

15.9. A number of guidance documents which relate to assessing cumulative effects have been used to inform the assessment and include:

15.10. European Commission (EC) Environment DG (May 1999), 'Study on the Assessment of Indirect and Cumulative Impacts as well as Impact Interaction', Hyder Consulting; and

15.11. Institute of Environmental Management and Assessment (1992), Guidelines for the Environmental Assessment of Road Traffic.

15.12. The EC guidelines 'are not intended to be formal or prescriptive, but are designed to assist EIA practitioners in developing an approach which is appropriate to a project'.

15.13. Paragraph 24 of the National Planning Practice Guidance (NPPG) (Reference ID: 4-024-20170728) outlines the consideration to be given to cumulative effects in the context of EIA:

"Each application (or request for a screening opinion) should be considered on its own merits. There are occasions, however, when other existing or approved development may be relevant in determining whether significant effects are likely as a consequence of a Proposed Development. The local planning authorities should always have regard to the possible cumulative effects arising from any existing or approved development."

Assessment Methodology and Significance Criteria

Methodology

15.14. This assessment is primarily concerned with where there is a likelihood of significant Type 1 cumulative effects occurring, in accordance with EIA practice and the NPPG guidance.

15.15. The assessment is based on experience and professional judgement, drawing upon relevant guidance set out above and the residual environmental effects identified within the results of the EIA technical assessments. The assessment has been undertaken by suitably qualified and experienced EIA practitioners.

15.16. The assessment has primarily focused on sensitive receptors identified within close proximity to the Site (e.g. local residents and businesses located in close proximity to the Site), likely cumulative effects, and their capacity to accommodate changes that will occur as a result of the combined residual environmental effects.

15.17. Relevant guidance has been reviewed, and an approach has been developed which uses the residual environmental effects identified within the ES. An exercise which tabulates the residual effects against receptors or receptor groups has then been carried out in order to identify the potential for Type 1 cumulative effects.

15.18. Negligible or neutral residual effects have been excluded from the assessment as, by their nature, they are considered to be imperceptible. Therefore, only minor, moderate or major effects have been given consideration during the assessment.

15.19. For the purposes of the assessment, receptor groups have been identified as those surrounding the Site and those identified within the individual technical assessments.

Significance Criteria

15.20. The following terms have been used to define the significance of the effects identified:

- Major effect: where the Proposed Development could be expected to have a very significant effect (either positive or negative) cumulatively;
- Moderate effect: where the Proposed Development could be expected to have a noticeable effect (either positive or negative) cumulatively;
- Minor effect: where the Proposed Development could be expected to result in a small, barely noticeable effect (either positive or negative) cumulatively; and
- Negligible: where no discernible effect is expected as a result of the Proposed Development cumulatively.

15.21. The significance level attributed to each effect has been assessed based on the magnitude of change due to the combination of residual effects and the sensitivity of the affected receptor/receiving environment to change, as outlined in Chapter 2 of the ES. Magnitude of change is assessed on a scale of major, moderate, minor and negligible and the sensitivity of the affected receptor/receiving environment is assessed on a scale of high, medium, low and negligible.

Limitations and Assumptions

15.22. Due to the reliance on qualitative data and subjective opinion, there are limitations related to the range and depth in which the cumulative effects have been investigated. It must be realised that analysing the cumulative effects of developments is often speculative and cannot be predicted as clearly as individual effects such as the effects upon traffic of a development, which relies heavily upon quantitative data to inform the assessment.

15.23. As a result, a number of assumptions have been made throughout in terms of the outcome of the accumulation of effects and based upon professional judgement. This section and the assessment process of identifying the likely significant Type 1 cumulative effects have, however, provided a reasoned consideration of and insight into the potentially significant Type 1 cumulative effects of the Proposed Development.

Identification of Likely Significant Type 1 Cumulative Effects

Construction Phase

15.24. Based on the methodology detailed above, Table 19.1 presents the results of the review of the potential for interactions of individual effects during the construction phase of development. The potential effect interactions are then discussed further.

Table 15.1; Type 1 Cumulative Effects Construction Phase

Sensitive Receptor Group	Construction Phase Residual Effects	Likely Significant Cumulative Effects
Humans	Noise and vibration: Construction noise for existing local residents and proposed future local residents. Construction traffic noise on local roads for existing local residents and proposed future local residents. Construction vibration to existing local residents. Air Quality: Construction Phase - Dust Soiling and other air quality effects associated with the construction phase. Socio-economic – positive change in employment during the construction stage to increase expendable income.	Minor adverse (Not significant) Temporary and Short-Term
Neighbouring Residential Properties	Noise and Vibration: Potential damage to neighbouring buildings as a result of vibration. Potential noise intrusion during construction works.	Negligible
The Economy	Socio-Economic: Job creation and supply chain leading to increase in tax revenues and GVA	Minor beneficial
Views, Visual Setting Townscape	TVIA: Temporary adverse effects on visual setting during the construction period from identified viewpoints.	Minor-moderate adverse on selected views
The climate	Climate change: Embodied CO2eq emissions affecting contributions to the carbon budgets	Minor adverse

15.25. Table 19.1 shows that there is unlikely to be in-combination operational phase Type 1 cumulative effects to arise. This is due to the extensive technical assessments throughout the design process and the identified mitigation in-built into the design.

Operational Phase

15.26. Based on the methodology detailed above, Table 19.2 presents the results of the review of the potential for interactions of individual effects during the operational phase of development. The potential effect interactions are then discussed further.

Table 15.2: Type 1 Cumulative Effects – Operational Phase

Sensitive Receptor Group	Operational Phase Residual Effects	Likely Significant Cumulative Effects
Humans	Wind: Exceedance of safety criteria on central reservation of Medlock Street in area which is neither a thoroughfare or crossing point for pedestrians or cyclists; minor exceedance of comfort criteria at one location on Hulme Street. Townscape and built heritage: well-being through the enjoyment of townscape and heritage assets.	Minor- moderate effects some adverse some, some neutral, some beneficial.
The economy	Socio-economic: addressing demand for PBSA in Manchester city centre, reducing pressure on residential accommodation in the city.	Moderate beneficial
Views, Visual Setting, Heritage and Townscape	TVIA: Visual impact on identified viewpoints following the construction of the development. Built Heritage: Visual impact on heritage assets identified	Neutral for 9 views Slight/Moderate-Moderate/Major beneficial for 3 views, and Minor-Moderate Adverse – Not Significant

15.27. Table 19.2 shows that there is unlikely to be in-combination operational phase Type 1 cumulative effects to arise. This is due to the extensive technical assessments throughout the design process and the identified mitigation in-built into the design.

Mitigation Measures

15.28. Where relevant, the individual residual effects which contribute to the potential cumulation have been considered within the ES and mitigated where necessary and feasible.

15.29. No mitigation is proposed for the identified Type 1 cumulative effects.

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