



FUSION MANCHESTER DEVCO LTD

DEANS GATE SOUTH

ENVIRONMENTAL STATEMENT

JANUARY 2021

DATE ISSUED: **JANUARY 2021**
JOB NUMBER: **GM11393**
REPORT NUMBER: **002**
STATUS: **FINAL**

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ENVIRONMENTAL STATEMENT

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1 INTRODUCTION

- 1.1.1 This Environmental Statement (ES) has been prepared on behalf of Fusion Manchester DevCo Ltd (the Applicant) and is intended to support a full planning application for the development of a student accommodation building (hereafter referred to as the 'Proposed Development') on Deansgate in Manchester City Centre. The relevant planning authority is Manchester City Council (MCC).
- 1.1.2 The Site is centred at National Grid Reference SJ 83292 97438 and comprises land at the junction of Chester Road / Bridgewater Viaduct (A56) and Deansgate, as illustrated on the Site Location Plan included at Appendix 1.1. The land included within the application redline boundary, to which the planning application relates, is hereafter referred to as 'the Site'.
- 1.1.3 The Site is approximately 0.06ha in size and comprises a roughly triangular area of previously developed land. The Site was cleared in the early 2000s and currently consists of areas of hardstanding and low quality vegetation.
- 1.1.4 The Proposed Development is illustrated on the plans included at Appendix 1.2.
- 1.1.5 This ES reports the findings of an Environmental Impact Assessment (EIA) that has been undertaken in accordance with the criteria set out in the Town and Country Planning (Environmental Impact Assessment) Regulations 2017/571 (the 'EIA Regulations') in respect of the Proposed Development.



2 APPROACH AND SCOPE

2.1 Introduction

2.1.1 Wardell Armstrong LLP is committed to delivery of effective practice in EIA coordination. As a registrant of the Institute of Environmental Management and Assessment's (IEMA) EIA Quality Mark, Wardell Armstrong's EIA practice is independently reviewed in accordance with best practice.

2.1.2 This ES has been prepared with regards to the requirements of the EIA Regulations, which apply to the Proposed Development, as set out below.

2.2 Planning Policy

2.2.1 The main policy documents of relevance to this ES include the National Planning Policy Framework (NPPF) (2019) together with MCC's current development plan.

2.2.2 Policies relevant to the issues contained in this ES are summarised below, with further details set out within each of the discrete technical chapters. Further details of the relevant planning policies (to this application) are provided within the accompanying Planning Statement.

National Planning Policy Framework

2.2.3 The NPPF was originally published in March 2012 and replaced all Planning Policy Statements (PPS) and Planning Policy Guidance Notes (PPG). The current version comprises the February 2019 NPPF. The National Planning Practice Guidance (NPPG) website was published in March 2014 in order to assist local authorities with interpreting and applying the NPPF, locally. The NPPG should be read in conjunction with the 2019 NPPF.

2.2.4 Each technical chapter within this ES details the relevant aspects of the NPPF and NPPG in relation to the Proposed Development and topic area under consideration.

Local Planning Policy

2.2.5 MCC's current Development Plan consists of:

- Core Strategy 2012 – 2027;
- Extant Unitary Development Policies; and
- Greater Manchester Joint Waste (2012) and Mineral (2013) Development Plan Documents.



2.2.6 Each technical chapter within this ES details the relevant local planning policies in relation to the Proposed Development and topic area under consideration.

2.3 Requirement for an EIA

2.3.1 Prior to planning consent being granted, there is a statutory requirement under the EIA Regulations to undertake an EIA and prepare an ES for any development that is likely to result in a significant adverse effect upon the environment.

2.3.2 Schedule 1 of the EIA Regulations lists all development types for which an EIA is mandatory. Schedule 2 of the EIA Regulations lists all development types for which EIA is not mandatory, but which may be appropriate depending on the scale and nature of the proposed project, and the sensitivity of the site and its surroundings.

2.3.3 The Proposed Development falls under Schedule 2, Section 10(b) Urban Development Projects, the threshold criteria for which is a development that has an overall development footprint >5 ha, includes >150 dwellings or includes >1 ha of non-residential urban development. Although the Site is less than 1ha in size, it is considered that the Proposed Development exceeds 150 dwellings, as 534 student beds across 272 units are proposed.

2.3.4 Due to the size and scale of the proposals and following a review of the environmental effects considered within planning applications submitted for similar developments in the surrounding area, it is considered that an EIA is required.

2.3.5 An EIA has therefore been undertaken in accordance the EIA Regulations and reported within this ES.

2.4 Scope of the EIA

2.4.1 Schedule 4 of the EIA Regulations sets out specific requirements for the content of an ES. Whilst every ES should provide a full and factual description of the effect(s) of a given development, Schedule 4 places an emphasis upon identifying 'likely significant effects'. Other effects that are not significant or of little significance need only a brief reference within the ES in order to indicate that their potential significance has been considered.

2.4.2 Schedule 4 states that an ES should provide a detailed description of the development, and an outline of the reasonable alternatives considered by the Applicant. The outline of alternatives should include an indication of the main reasons for the choices made, taking into account the environmental effects.



2.4.3 Schedule 4 also states that a non-technical summary of the ES should be provided. To this end, this ES is accompanied by a separate stand-alone NTS produced using non-technical language.

2.4.4 In accordance with Schedule 4, likely significant effects of the development on the environment should be considered, in particular effects on: population, human health, biodiversity (e.g. fauna and flora), land, soil, water, air, climate, material assets, cultural heritage, landscape and the interrelationship between the above factors.

Scoping Process

2.4.5 The scope of this ES has been agreed in consultation with MCC and other statutory consultees.

2.4.6 An initial study of the potential environmental effects of the Proposed Development was undertaken and presented within a Scoping Report (Appendix 2.1). This included consideration of the existing environmental baseline, identification of sensitive receptors and consideration of potential mitigation measures which could be embedded within the design of the scheme.

2.4.7 The Scoping Report was submitted to MCC alongside a formal request for a Scoping Opinion on 2nd October 2020. MCC's Scoping Opinion was received on 18th November 2020 (Appendix 2.2).

2.4.8 In accordance with the Scoping Report and MCC's Scoping Opinion, Table 2.1 below sets out the topics considered within this ES, and the authors of each technical chapter of this ES.

Table 2.1: Scope of the EIA		
ES Chapter No.	Topic	Author
6	Noise	Apex Acoustics
7	Air Quality	Ensafe
8	Townscape & Visual	Bidwells
9	Built Heritage	Bidwells
10	Daylight & Sunlight	GIA
11	Wind Microclimate	Wardell Armstrong LLP
12	Socio-Economics	Cushman & Wakefield

2.4.9 In accordance with the EIA Regulations the EIA has been undertaken, and the ES prepared, by 'competent experts'. The qualifications and experience of the team involved in the preparation of this ES is set out within the Statement of Expertise, included at the end of this ES.



Topics Outside the Scope of the EIA

2.4.10 Specific chapters have not been included for the following topics, as it is considered that these will be addressed sufficiently elsewhere within the ES or planning application, and/or the Proposed Development is unlikely to result in significant environmental effects relevant to these topics.

Biodiversity

2.4.11 A Preliminary Ecological Appraisal (PEA) of the Site was undertaken in August 2020, including a desk study and an extended Phase 1 habitat survey. The PEA identified the following ecological features may be subject to adverse effects in the absence of mitigation:

- Bats; and
- Nesting Birds.

2.4.12 The PEA identified a number of potential roosting features (PRFs) on the boundary wall of the Site and suitable foraging habitat nearby. There are also recent records of common pipistrelle *Pipistrellus pipistrellus* and pipistrelle species *Pipistrellus sp* roosts and other field records within 2km of the Site. A bat survey was subsequently undertaken at the Site, including a desk study, preliminary roost assessment and bats presence/absence survey.

2.4.13 No bats were recorded emerging from the PRFs during the dusk emergence survey. Low levels of common pipistrelle activity were recorded during the survey. As no roosts were identified, the demolition works proposed on Site are unlikely to result in any impacts to bats and no mitigation is required.

2.4.14 Adverse impacts to nesting birds will be avoided by ensuring vegetation clearance is not undertaken during the nesting season. If this is not possible nests will be identified and protected until the nesting attempt is complete.

2.4.15 Integral bat boxes will be included within the Proposed Development where possible to enhance roosting opportunities for bats on site.

2.4.16 With the above avoidance and mitigation proposals in place, the Proposed Development can be delivered in conformity with planning policy and legislation relating to nature conservation.



2.4.17 In conclusion, it is not considered likely that the proposal will result in significant adverse effects on biodiversity and as such this topic has been scoped out of further consideration within the EIA.

2.4.18 The PEA and bat survey have been submitted as standalone reports with the planning application.

Land Contamination

2.4.19 In support of the previous planning applications for the Site (see Chapter 3), a Phase 1 (Desk Study) Investigation of the Site was undertaken in November 2015 and an intrusive Ground Investigation of the Site was undertaken in February 2017. These investigations identified potential sources of ground contamination as a result of the site's historic use as a petrol filling station. However, it was concluded that this contamination is not particularly complex or unusual and land contamination matters could be adequately controlled via appropriate planning conditions.

2.4.20 It is considered that, as for the previous planning application, land contamination matters could be adequately controlled via appropriate planning conditions.

2.4.21 In conclusion, it is not considered likely that the proposal will result in significant adverse effects in relation to ground or contamination matters and as such this topic has been scoped out of further consideration within the EIA.

Water Resources

2.4.22 As set out above, it is considered that contamination risks can be adequately controlled via appropriate planning conditions. In addition, a Construction Environmental Management Plan will be produced and adhered to in order to ensure pollution prevention and control measures are implemented as necessary during the construction of the Proposed Development. As such it is not considered that the Proposed Development will result in a significant adverse impact on water quality.

2.4.23 The Site is not at high risk of flooding, however a Flood Risk Assessment has been undertaken to inform the drainage design for the Proposed Development and ensure flood risk within the Site or surrounding area is managed appropriately.

2.4.24 In conclusion, it is not considered likely that the proposal will result in significant adverse effects in relation to water resources and as such this topic has been scoped out of further consideration within the EIA.



Climate

- 2.4.25 The EIA Regulations state that an EIA should consider potential climate related effects. It is considered that these comprise the impact of the Proposed Development on the climate (i.e. greenhouse gas (GHG) emissions) and the impact of climate change on the Proposed Development.
- 2.4.26 As for any development, the Proposed Development will result in GHG emissions and these are unavoidable. It is considered that the GHG emissions of the Proposed Development will not be significantly different from other proposals of a similar nature and scale, and may be lower as the Proposed Development has been designed to achieve a BREEAM Excellent rating. The scheme will be constructed, at a minimum, in accordance with relevant regulations, with betterment of Building Regulations being achieved where possible. The current energy strategy allows for the installation of a PV array on the roof of the building and low energy LEDS throughout the accommodation. Where possible, improvements will be made to facades to increase insulation and reduce heat loss.
- 2.4.27 In addition, the scheme is located in a sustainable location in Manchester City Centre and will be a zero-car development, reducing the level of operational GHG emissions in comparison to an equivalent scheme that includes parking provision.
- 2.4.28 The Proposed Development could potentially be affected by the impact of climate change, including increased risk of extreme weather events and flooding. However, resilience to extreme weather events has been incorporated within the design process, and the Proposed Development will be constructed in accordance with relevant regulations and guidance. In addition, a Flood Risk Assessment has been undertaken which considers the risk of potential extreme flood events as a result of climate change.
- 2.4.29 In conclusion, it is not considered that the Proposed Development is likely to result in significant adverse effects on climate, and it is considered that the risk of the Proposed Development being significantly affected by climate change is being considered sufficiently elsewhere within the ES.

Archaeology

- 2.4.30 In support of the previous planning application at the Site an Archaeological Desk Based Assessment (DBA) was undertaken in October 2015. This concluded that there is low potential for any buried remains of archaeological interest to survive in-situ, due to the extensive disturbance to below-ground levels caused during the previous



development at the Site. The DBA concluded that further archaeological investigation of the Site would not be required.

- 2.4.31 Based on the conclusions of the previous DBA, and the extensive disturbance cause to the Site through its previous development, it is not considered likely that the proposals will result in significant adverse effects on any buried archaeology and as such the topic has been scoped out of further consideration within the EIA.

Waste

- 2.4.32 A Waste Management Strategy has been produced (please refer to the Design and Access Statement for further information) setting out details for refuse storage and management, confirming that the proposals will be in line with MCC standards. The Applicant is working towards a zero-waste environment as part of the transition to a sustainable economy, including use of the “waste hierarchy” (waste prevention, re-use, recycling, recovery and finally disposal as a last option) as a guide to sustainable waste management. It is proposed that the building Waste Store will contain a 20sqm allowance for recycling to encourage better waste management by the occupants.
- 2.4.33 It is not considered likely that the proposals will result in significant adverse effects on the environment as a result of waste and as such the topic has been scoped out of further consideration within the EIA.

Transport

- 2.4.34 The proposals represent zero car development in a highly sustainable location, where a range of amenities are accessible within a short travel distance by non-car modes. There is consequently no requirement for students residing at the proposed facility to operate a car at the daily level. Moreover, it shall be a term of the lease that any resident shall not operate a vehicle within 3-kilometres of the site or else risk their lease being terminated. This is a widely used requirement in the industry and one which the Applicant would accept as a condition of any planning permission being granted.
- 2.4.35 In view of the absence of car parking opportunities, the Proposed Development would have only very limited traffic impact potential comprising only very infrequent maintenance visits by van and weekly refuse collections undertaken by private contract. The associated traffic effects of the development would therefore not be so great as to constitute a material impact, let alone a potentially significant environmental impact.



2.4.36 A Transport Statement and Framework Travel Plan have been produced in support of the planning application. These reports identify the non-car travel credentials afforded by the Site's location (informed by a bespoke accessibility model), ways in which the proposal would be compliant with current policy, and requisite management measures, including the refuse collection and student drop-off / collection strategies.

2.4.37 In conclusion, it is not considered likely that the proposals will result in significant adverse transport related effects on the environment and as such the topic has been scoped out of further consideration within the EIA.

Risks of Major Accidents and/or Disasters

2.4.38 The 2017 Regulations state that an EIA should consider the vulnerability of the development to risks of major accidents and/or disasters, relevant to the project concerned.

2.4.39 'Risk' can be defined as 'the likelihood of an impact occurring, combined with effect or consequence(s) of the impact on a receptor, if it does occur'; a 'Major Accident' can be defined as 'events that threaten immediate or delayed serious damage to human health, welfare and/or the environment'; and a 'Disaster' can be defined as 'naturally occurring extreme weather events (e.g. storm, flood, temperature) or ground-related hazard events (e.g. subsidence, landslide, earthquake) with the potential to cause an event or situation. Disaster and natural disaster are often used interchangeably.

2.4.40 Owing to the nature of the Proposed Development, it is considered that the likelihood of it resulting in/causing an event to occur that threatens (either immediate or delayed) serious damage to human health, welfare and/or the environment is low. The vulnerability of the Proposed Development to naturally occurring extreme weather events (i.e. flooding, storms and extreme temperatures) and/or ground related hazard events, (e.g. subsidence, earthquakes and ground contamination) that could lead to an event or situation is very low. Chapter 5 sets out the incident planning and management procedures which will be implemented during construction.

2.4.41 Table 2.2 below sets out the accidents and disasters of relevance to the Proposed Development (based on the location of the Site and proposed land use), and how these will be mitigated.



Table 2.2: Consideration of major accidents and/or disasters	
Major accident/ disaster type	Description
Extreme weather events	The Proposed Development could be damaged by extreme weather events (exacerbated by climate change), including storms, snow, ice and heatwaves. However, resilience to extreme weather events has been incorporated within the design process, and the Proposed Development will be constructed in accordance with relevant regulations and guidance.
Flooding	The Site is not at a high risk of flooding, however the reduction in permeable area as a result of the Proposed Development could exacerbate flood risk. A Flood Risk Assessment has been produced to inform the drainage design for the Proposed Development and ensure flood risk within the Site or surrounding area is managed appropriately. The drainage has also been designed to accommodate potential extreme flood events as a result of climate change.
Contamination risk	There is a risk of contamination to ground and water during construction and operation of the Proposed Development. An assessment of this risk has been undertaken, and mitigation measures recommended where required.
Transport accidents	The proposals represent zero car development and as such are unlikely to have a material impact on traffic flows. However, a Transport Assessment and Framework Travel Plan have been prepared, identifying measures to increase safety where necessary.

2.4.42 Based on the above, it is not considered that the Proposed Development is likely to result in any significant adverse effects on the environment deriving from the vulnerability of the Proposed Development to the risk of major accidents and/or disasters (relevant to the Proposed Development). As such the topic has been scoped out of further consideration within the EIA.

2.5 Assessment Methodology

2.5.1 The technical assessments provide a detailed examination of the key environmental impacts associated with the Proposed Development for each topic area included within the ES, as set out above.

2.5.2 Baseline data was obtained from published information sources, non-confidential data supplied by the various organisations consulted, previous site work undertaken by others and additional fieldwork. The methodologies for predicting the nature, extent, magnitude and significance of environmental effects vary according to the topic area being considered. As such, the methodology for predicting impacts is included within each assessment chapter.

2.5.3 Quantitative methods make reference to thresholds and indicative criteria set out within government regulations and guidelines (where available). Where quantitative



criteria are not available or not appropriate, qualitative methods have been adopted, relying on previous experience and professional judgement.

- 2.5.4 The objective of each assessment is to identify the 'magnitude of change' to the existing baseline environment arising as a result of the Proposed Development. The level of effect is a function of impact magnitude and the importance/sensitivity of the resources or receptors. Whilst the methods for determining the level of an effect can vary according to the environmental discipline, this underlying principle remains the same.
- 2.5.5 The assessment of the level of effect makes a judgement of the severity of the effect on a particular environmental receptor, taking into consideration all or a combination of the following factors:
- Geographical extent;
 - Rate of change;
 - Reversibility of the effect;
 - Probability of the effect;
 - Duration of the effect;
 - Size and magnitude of the effect; and
 - Sensitivity/importance/substitutability of the receptor.
- 2.5.6 Criteria is then used to determine whether an effect is 'significant' or 'not significant'. This criteria is set out within each chapter.
- 2.5.7 The criteria for the assessment of effects that has been adopted within each assessment chapter is in accordance with current published guidance specific to the discipline to which it relates. The published guidance documentation used is referenced within each chapter. Where published guidance or criteria is unavailable, the chosen method for assessing impacts and effect significance is explained in detail to ensure transparency.
- 2.5.8 Where likely significant adverse effects have been identified, mitigation measures have been proposed in order to avoid, reduce or remove such effects. The mitigation measures include refinements to the scheme design and/or the introduction of best practice methodology and specific safeguards. As an EIA is an iterative process, the assessment methodology was used to refine the mitigation measures and then adjusted to take them in to account during the assessment.



2.5.9 Via the incorporation of appropriate mitigation measures, identified adverse effects have been reduced to the lowest practicable level, consistent with the overall objectives of the Proposed Development. Any residual effects, during either construction and/or operation are identified and the significance of these residual effects, assessed.

2.6 Cumulative Impact Assessment

2.6.1 Schedule 4 of the EIA Regulations states that an ES must include a description of the likely significant effects of the Proposed Development, including reference to possible cumulative effects.

2.6.2 Within the assessment of cumulative impacts, there are two aspects to consider:

- Intra-cumulative effects (i.e. those occurring as a result of the Proposed Development in isolation); and
- Inter-cumulative effects (i.e. those occurring as a result of the Proposed Development in combination with other development).

2.6.3 Chapter 11 summarises both the significance of any residual effects detailed within the technical ES chapters and any likely significant cumulative effects.

Intra-cumulative Effects

2.6.4 The EIA has considered where a significant residual cumulative impact is expected to occur on a particular receptor as a consequence of collective actions, aspects or effects of the Proposed Development. Chapter 14 summarises the residual impacts likely to be experienced for each type of receptor and assesses the significance of these cumulative effects.

Inter-cumulative Effects

2.6.5 Schedule 4 states that an ES should include a “*description of the likely significant effects of the development on the environment, resulting from... the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources*”.

2.6.6 The schemes to be considered comprise committed developments in the area surrounding the Site and are set out below within Table 2.3. These schemes were identified via the planning application search facility on MCC’s website and agreed with MCC through scoping.



Table 2.3: Schemes for consideration within cumulative impact assessment		
Scheme	Description	Status
Castle Wharf 113870/FO/2016	Construction of two residential apartment buildings with ancillary amenity facilities for residents including a gym, landscaped terrace and swimming pool, new public realm and landscaping including two new pedestrian connections to the Castlefield basin from Chester Road, basement car parking and related highway, access, servicing and associated works.	Under construction
Crown Street Phase 1 119806/FO/2018	Erection of two tall buildings (51 storeys and 21 storeys) comprising 664no residential units (use class C3) and commercial space (A1, A3 or D1), provision of two levels of basement parking, alterations to surface level car park, landscaping, highway alterations, access and associated works.	Under construction
325 - 327 Deansgate 125804/FO/2019	Demolition of existing buildings and structures on-site and erection of 22-storey building comprising apart-hotel (Use Class C1) with flexible commercial uses at ground floor and within existing viaduct arches (Use Class A1, A2, A3, A4, D2), access, landscaping and other associated works.	Planning permission not yet implemented
Land Bound By Silvercroft Street, Crown Street, And The Mancunian Way 126668/FO/2020	Full planning permission for the erection of two 52-storey residential buildings (Use Class C3) each incorporating a podium accommodating residential amenity facilities and ground floor and first floor commercial units (Use Classes A1, A2, A3, or D1), private and public basement car parking, landscaping and a public park, servicing and access arrangements, highways improvements, and associated works (Phases A, B, and D). Outline planning permission (with all matters reserved) for an educational facility (Use Class D1) (Phase C).	Planning permission not yet implemented
Transition 116850/FO/2017	Demolition of the existing buildings on the site and construction of three residential buildings, 32, 26 and 18 storeys in height, comprising a total of 399 residential units (C3) and 50 retirement living units (C2) with roof top ancillary restaurant; 675 sq.m of commercial floor space (Use Classes A1, A2, A3, A4, B1, D1 or D2); associated car and cycle parking within a basement level; public realm and landscaping; access and servicing arrangements; and other associated works.	Planning permission not yet implemented
Deansgate Square 111719/FO/2016/C1	Construction of four residential buildings, ancillary amenity building for residents accommodating a tennis court, swimming pool and gym facilities (Use Class C3), ground floor retail units (Use Classes A1, A2, or A3), amenity space for residents within residential buildings, new public realm and landscaping, basement car parking and related highway, access, servicing, engineering and associated works.	Under construction



Table 2.3: Schemes for consideration within cumulative impact assessment

Scheme	Description	Status
River Street 118683/FO/2017 and 122211/NMC/2018	<u>118683/FO/2017</u> Demolition of the existing structure and construction of a part 32, part 10 and part 5 storey building comprising 807 student bed spaces (sui generis), amenity space, landscaping, cycle provision and associated highways works. <u>122211/NMC/2018</u> Non Material Amendment to planning permission 118683/FO/2017 to allow the removal of the Level 04 plant room and addition of 1 no. Studio Bedroom in its place, resulting in an overall provision of 792 student bed spaces.	Under construction (due to complete Sept 2020)
Plot 9A First Street 121462/FO/2018	Erection of a ground plus sixteen storey building comprising commercial office (Use Class B1); hotel (Use Class C1); standalone flexible, commercial space across part of the ground and first floor (Use Classes A1 (Shops), A2 (Professional and Financial Services), A3 (Restaurants and Cafes), A4 (Drinking Establishments, B1 (offices), and D2(Gymnasium); flexible ancillary commercial and retail uses at ground and first floor (Use Class B1, A3, A4); basement car park, landscaping and associated works.	Planning permission not yet implemented
Land Bounded By River Street To The North, Plot 10 To The East, Hulme Street To The South And Medlock Street To The West 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.	Planning permission not yet implemented
10-12 Whitworth Street West 111003/FO/2016/C1	Demolition of existing building at 10 - 12 Whitworth Street West, and redevelopment of the site for a new 35 storey residential building (Use Class C3) comprising 327 apartments, with associated residents' services, facilities and communal spaces: servicing, highways, public realm and associated works.	Planning permission not yet implemented
Axis 106490/FO/2014/C1 And 115351/NMC/2017	<u>106490/FO/2014/C1</u> Construction of a lower ground plus 27 storey residential building (Class C3) with associated servicing arrangements, hard landscaping, pedestrian access bridge and associated works. <u>115351/NMC/2017</u>	Under construction



Table 2.3: Schemes for consideration within cumulative impact assessment		
Scheme	Description	Status
	Non-Material Change to planning consent ref:106490/FO/2014/C1 (Construction of a lower ground plus 27 storey residential building (Class C3) with associated servicing arrangements, hard landscaping, pedestrian access bridge and associated works) including lowering the building parapet, revisions to glazing details, providing new parallel opening vents, increased depth of soffit and lowering of second floor cladding profile, height reduction of media screen, sub-station and door repositioning, alteration to column design, deletion of apartment bedroom, reconfiguration of bin store and amendment to the feature profile detail.	
Viadux 115871/FO/2017 And 126868/JO/2020	<u>115871/FO/2017</u> Erection of a 40 storey building to form 375 residential apartments (Use Class C3a) and the erection of a 14 storey building for form offices (Use Class B1) (31,756 sqm) together with ground floor commercial space (Use Class A1, A3 or A4) (1010 sqm) with associated enclosed service yard, public realm including staircase and lift to connect with viaduct, car and le parking, landscaping and other associated works. <u>126868/JO/2020</u> Variation of planning conditions 2, 3, 21, 24, 25, 29, 30, 31, 32, 36 and 38 of planning permission 115871/FO/2017 (amended by 126604/NMC/2020) to allow for a reduction in overall height of the building by 2.5 metres, changes to the number and type of structural interventions into the listed arches, modification and alteration to the bridge over Great Bridgewater Street, alterations to the ground floor layout including enlargement of residents lobby together with re-location of the cycle store and reduction in car parking, alterations to the upper floor layout to remove 3 bedroom apartments and elevational alterations to main facade of the residential tower to modify the fin arrangement together with alteration to the podium with the introduction of perforated panels.	Under construction
Potato Wharf 114999/FO/2017	Erection of two residential buildings (Use Class C3) with a link building, comprising 191no apartments, residential amenity areas, car parking, bicycle parking, public realm and landscape works, access and servicing arrangements, and associated works, following demolition of the existing buildings and plant.	Under construction



Table 2.3: Schemes for consideration within cumulative impact assessment		
Scheme	Description	Status
Land Bounded By Arundel Street, Ellesmere Street, The A57 (M) Inner Ring Road (Mancunian Way) And Worsley Street 123261/FO/2019	Erection of a part 8 and 9 storey building located on Arundel Street and Worsley Street, a part 11 and 23-storey residential building located on the Mancunian Way and refurbishment and conversion of the existing DOT Building to form 355 residential apartments in total (Use Class C3a) together with commercial uses (Use Classes A1, A2, B1, D1 and D2) along with associated car parking, cycle parking, access, landscaping and other associated work.	Planning permission not yet implemented



3 SITE DESCRIPTION

3.1 Introduction

3.1.1 This Chapter of the ES provides an overview of the Site location and a description of the Site and the surrounding areas with the intention of providing a general appreciation of the Site's setting. The technical assessments set out in Chapters 7 to 13 each contain a detailed description of the baseline environmental conditions of the Site and its environs, relevant to the scope and nature of the topic area under consideration.

3.2 Site Location

3.2.1 The Site is centred at National Grid Reference SJ 83292 97438 and comprises at the junction of Chester Road / Bridgewater Viaduct (A56) and Deansgate in Manchester City Centre. The Site is located within the administrative boundary of Manchester City Council (MCC). The location of the Site and application boundary is illustrated at Appendix 1.1.

3.3 Site Description

3.3.1 The Site is approximately 0.06ha in size and comprises a roughly triangular area of previously developed land. The Site was cleared in the early 2000s and currently consists of areas of hardstanding and low quality vegetation. There is a wall on the southern boundary of the Site, adjacent to Deansgate, which acts as a retaining wall in the south-east corner of the Site.

3.3.2 The Site is bound by Chester Road / Bridgewater Viaduct (A56) to the north, Deansgate to the south and residential apartments (Deansgate Quay) to the east.

3.3.3 Vehicular access to the Site is off Deansgate, however this access is currently closed, and the Site is enclosed by temporary hoarding.

3.3.4 The Site itself is broadly level, at approximately 29mAOD. However as stated above, the wall in the south-east of the Site forms a retaining wall to Deansgate which is located at approximately 27mAOD.

3.4 Wider Site Context

3.4.1 The Site is located south-west of Manchester City Centre. As such, the majority of land surrounding the Site is densely developed with a mixture of residential and commercial uses.



3.4.2 The closest existing development to the Site comprises Deansgate Quay, residential apartments located immediately east of the Site. Land to the south-west of the Site is currently being redeveloped, with Deansgate Square, a development of four residential tower blocks, located immediately to the south of the Site.

3.4.3 Deansgate train station and the Deansgate-Castlefield tram stop are located approximately 150m and 185m north-east of the Site respectively. Bridgewater Canal is located approximately 50m north of the Site, with the Rochdale Canal located approximately 110m north of the Site.

3.5 Environmental Designations

3.5.1 There are no designations within the Site. Castlefield Conservation Area is adjacent to the north of the Site and there are a number of Grade II listed buildings in the surrounding area.

3.6 Planning History

3.6.1 In December 2015, a full planning application (ref. 10730/FO/2015/C1) was submitted for the proposed development of a residential-led mixed use scheme on the Site. The proposed scheme comprised the construction of a 13-storey building including 53 apartments, a commercial unit, and associated car parking, landscaping and access. MCC confirmed within a Screening Opinion that an EIA would not be required, but a range of environmental surveys and assessments were undertaken and submitted in support of the application. The application was granted approval in March 2016.

3.6.2 In March 2017, an application (ref. 115591/FO/2017) was submitted to amend the approved development at the Site. Intrusive ground investigations at the Site identified constraints which would prevent the construction of the basement level as proposed within the approved scheme and as such the applicant sought to reconfigure the building design accordingly. The applicant also proposed to amend the approved elevations. As the siting, height, scale, and mass of the scheme remained unchanged it was concluded that the Screening Opinion remained valid. A small number of environmental assessments were updated where necessary. The amended scheme was granted approval in June 2017.

3.6.3 In January 2018, an application (ref. CDN/18/0048) was submitted to discharge conditions of the approved development and partial approval was granted.



4 DEVELOPMENT DESCRIPTION

- 4.1.1 This Chapter sets out a description of the Proposed Development. Further information on the construction process is provided in Chapter 5.
- 4.1.2 This ES is based on the plans included at Appendix 1.2 and the following development description:

Full planning permission for a 28-storey purpose built student accommodation building (Sui Generis).

- 4.1.3 It is proposed that 534 student beds across 272 units will be provided in a mixture of accommodation types from one bed studios to 6 bed social studios. Further detail on room types is provided in Appendix 1.2.
- 4.1.4 The scheme has been designed to achieve a BREEAM Excellent rating. A PV array will be installed on the roof of the building to provide betterment of Building Regulations.
- 4.1.5 The building will also include three roof terraces, for which a Landscape Management Plan will be produced to provide mitigation and enhancement opportunities, such as bird boxes and habitat/roosting support for localised species. Tree planting will also be undertaken on the pavements adjacent to the Site.
- 4.1.6 A Flood Risk Assessment (FRA) has been undertaken which has informed the production of a Drainage Strategy for the Proposed Development.

4.2 Access

- 4.2.1 The primary entrance will be on the western corner of the building, at the junction of Chester Road / Bridgewater Viaduct and Deansgate. Access to the lower ground floor (which includes utilities, waste facilities and cycle storage) will be via the eastern corner of the building, off Deansgate.
- 4.2.2 The Proposed Development will be a zero-car scheme and as such no parking provision or vehicular access has been included. A 92-space cycle store will be provided on the lower ground floor of the building.
- 4.2.3 The Transport Statement identifies a range of traffic management measures that would be put in place at the limited times of the year when residents would be moving in and out of their accommodation to ensure there is no adverse impact to the surrounding roads. This includes students needing to book an arrival slot and arriving at a nearby car park where holding bays would be reserved by the Applicant (as Operator) at these times of year. Parking marshals (provided by the Applicant) would



then oversee cars moving to the on-street parking bays outside the site where loading/unloading can take place in a managed way.

4.3 Sustainability and Energy

4.3.1 The Proposed Development has been designed to minimise the environmental impact of the construction process and maximise its sustainability, creating a low energy, environmentally conscious and crucially pleasant living environment for the future occupants. A number of sustainable features will be incorporated into the design to achieve this.

4.3.2 As stated above, the strategy is to target a BREEAM 'Excellent' rating, with an aspiration to maximise the achieved score as far as practicable.

4.3.3 A pre-assessment has been undertaken against BREEAM New Construction 2018 'Multi-Residential' criteria. The building's performance has been assessed under a number of categories, including:

- Energy
- Water
- Transport
- Materials
- Land use
- Pollution
- Health and wellbeing; and
- Management.

4.3.4 The pre-assessment identified a predicted BREEAM score of 76.8% which demonstrates that an 'Excellent' rating will be achieved when the full assessment is undertaken (as the minimum score required to achieve an 'Excellent' rating is 70%). The pre-assessment score includes an additional 6.8% over this threshold score to allow for any unforeseen short fall during the assessment process.

4.3.5 An Energy Strategy has also been produced for the scheme, which firstly identified the following passive measures to reduce the initial load of the building in terms of heating, cooling, and anticipated lighting:



- Appropriate glass to wall ratio.
- U values that exceed minimum Building Regulation Standards.
- Air leakage rates that exceed minimum Building Regulations.
- Glass specification (G Value) that limits the amount of unwanted solar gain to avoid overheating.

4.3.6 The Energy Strategy then established energy efficiency measures to meet the demand of the building, as follows:

- Heat recovery on the ventilation systems (MVHR).
- Low specific fan power ratings to ventilation fans.
- Lighting control systems such as PIR detection in corridors and en-suite bathrooms.
- High efficiency LED lighting throughout.
- Direct electric heating with local control and occupancy sensing and set point temperature.

4.3.7 As a result of these measures, the Energy Strategy identified that the Proposed Development will provide a 9.5% improvement in CO₂ emissions in relation to the baseline of standard Building Regulations.

4.3.8 For further information please refer to the BREEAM Pre-Assessment Report and Energy Strategy provided as part of the planning application.

4.4 Waste

4.4.1 A Waste Management Strategy has been set out within the Design and Access Statement. quantities and types of waste produced during the construction and operation phases.

4.4.2 The proposed development will provide safe and convenient facilities for recycling and waste disposal, encouraging residents to dispose of their refuse responsibly and to recycle as much of their household waste as possible. The Refuse Store

4.4.3 Refuse and recycling will be collected from the residential accommodation by the Building Management team where it will be brought to the dedicated Refuse Store at the Lower Ground Floor. This space has been designed to accommodate sufficient



waste storage for the scheme, which has been calculated in accordance with BS5906:2005:

- Total Number of Bedrooms: 534.
- Waste provision per Bedroom: 70 Litres.
- Total Waste Storage Requirement: 37,380 Litres.
- Total Number of 1100 Litre Eurobins required: 34.
- Current Scheme Provision: 20No. 1100 Litre Eurobins, based on 2No. refuse collections per week with approximately 15% additional capacity.

4.4.4 The Refuse Store is designed to be secure and constructed of robust materials with suitable drainage and taps to allow regular wash downs and cleaning of bins.

4.4.5 Servicing and refuse collections will be made from the south of the building, with bins taken out via the access point of the Lower Ground Floor. Refuse vehicles will use the existing lay-by on Deansgate South, with bins moved out to the street in a phased manner to maintain constant thoroughfare along the pedestrian footpath.



5 CONSTRUCTION METHODOLOGY AND PROGRAMME

5.1 Introduction

- 5.1.1 This Chapter sets out the methodology and programme for the construction of the Proposed Development, detailing how the project will be delivered in respect of health and safety, logistics, communications and security; including details of how construction vehicles and staff will manage the scheme to ensure that noise and disturbance is kept to a minimum to residents and businesses.
- 5.1.2 This Chapter provides project-specific management measures which will inform the Construction Method Statement (CMS) for the Proposed Development. The CMS will be a dynamic document which should be reviewed if activities or conditions onsite change that may influence management measures. Reviews will be undertaken at set intervals (as minimum every 3 months or when site conditions change) and new information added as appropriate.
- 5.1.3 The construction methodology has been developed to avoid, minimise and mitigate against any construction effects on the environment and surrounding community.

5.2 Project Team

- 5.2.1 The project team for the construction of the Proposed Development is detailed in Table 5.1 below.

Table 5.1: Construction Project Team	
Role	Name
Client/Applicant	Fusion
Project Manager	Rhomco
Principal Designer	Alder King
Main Contractor	TBC
Planning Consultant	Cushman & Wakefield
Architect	Corstorphine + Wright Architects
Structural & Civil Engineer	Shear Design
MEP Design	Ridge and Partners LLP
Building Control	ACT Building Control
Fire Engineering	Helios Fire & Construction Consultancy
Landscape Architect	FIRA



5.3 Programme

5.3.1 Subject to the successful discharge of the planning conditions the programme of works has a start date of April 2022 with a 30 month build out and a completion date of September 2024.

5.3.2 The proposed working hours for the scheme are as follows:

- Monday to Friday – 0730hrs to 1800hrs;
- Saturdays – 0730hrs to 1400 hrs; and
- Sundays & Bank Holidays – Only with prior written approval.

5.4 Construction Methodology

5.4.1 The following section details and provides a brief overview of the construction methodology that will be adopted by the construction team for the main works of the project.

5.4.2 The programme for the main works has been split into the following categories:

- Site Clearance;
- Groundworks;
- Superstructure;
- Envelope;
- Internal works; and
- External Works.

5.4.3 A phasing overview is included within the Logistics Plan at Appendix 5.1.

Health and Safety

5.4.4 A business management system will be operated that embraces health and safety, quality, environmental and employee development in an integrated manner complying with current Health, Safety and Environmental Legislation as a minimum. This will be achieved using standard processes and their related forms, meeting agenda, control records and operational guidance.

5.4.5 Sub-contractors (designers, suppliers etc) will be expected, as an integral part of the management of the project, to assist and support the Applicant in the operation and continuous improvement all procedures.



5.4.6 A Construction Phase Health and Safety Plan will be developed, and its recommendations and control measures implemented prior to any works started. The Plan will complement the CMS and will provide even greater detail in the safe delivery of the project. The Plan will include the following documents:

- Construction Traffic Management Plan (CTMP);
- RAMS Programme;
- Site Rules;
- Fire Management & Emergency Services Response Plan;
- Construction Environmental Management Plan (CEMP);
- Site Waste Management Plan (SWMP); and
- COVID-19 SOPs.

5.4.7 The project will be delivered in accordance with the Construction (Design and Management) Regulations 2015 and all relevant legislation.

5.4.8 The constraints of the Site will dictate the construction strategy. It is intended to utilise off site manufacturing and modern methods of construction along with traditional safety enhancements to ensure safe delivery of the Proposed Development. This will include:

- Formwork screens with integral hoist to move frame materials reducing the lifting operations;
- Prefabricated unitised cladding system to remove the requirement for mast climbers;
- Prefabricated bathroom pods; and
- Prefabricated building services modules in corridors and risers.

Site Logistics

5.4.9 Vehicular access to the Site during construction will be formed from Deansgate following a reduced level dig of the site to create the proposed levels.

5.4.10 The following Logistics Plans are included in Appendix 5.1 and detail the proposed plans for the two key stages of the development:

- Site Clearance / Site Strip; and



- Main Works.

5.4.11 The following key points are highlighted below:

- Site deliveries will be via Deansgate which will require closure of the footpath adjacent to the Site and careful traffic management for the duration of the main works.
- The footpath on the opposite side of Deansgate will be kept open for the full duration of the works. The footpath on Chester Road will be narrowed and protected by a covered walkway.
- Operative access and egress will be via a biometric turnstile located on Deansgate.
- Segregated pedestrian access and egress routes within the site boundary will be formed and developed as the scheme is built and the conditions evolve.

Pre-construction Works

5.4.12 All planning conditions with pre-start conditions will be discharged prior to works commencing.

5.4.13 Consultation and community liaison meetings will take place with local businesses and residents to keep them informed about the scheme

5.4.14 All licenses will be applied for prior to any works starting (e.g. temporary traffic orders, tower crane, over sail, hoarding, scaffolding, demolition).

Site Set-up

5.4.15 During the site clearance (reduced level) phase the site set up will be contained within the works boundary as shown on the layout plan contained in Appendix 5.1.

5.4.16 For the main works it is intended to locate the site cabins on the car park area to the south of the Site (on the opposite side of Deansgate), currently being used by the main contractor on neighbouring construction sites. It is anticipated that neighbouring works will be completed before this project would require the potential use of this land. These will contain the required canteen space, drying rooms and male and female toilets. This is subject to obtaining permission to use the land for this purpose.

5.4.17 Access for goods vehicles will be controlled via security and traffic marshals.

5.4.18 The Site will be secured with solid hoardings and access for operatives will be via biometric turnstile.



5.4.19 The boundary of the of the Site will be formed using solid timber hoarding and facilities for public viewing will be provided at agreed locations. Community engagement schemes will be targeted to produce suggestions and ideas for any decorative displays.

5.4.20 All external features of the site set up will be in line with the Best Practice standards defined by the Considerate Constructors Scheme.

Tower Crane

5.4.21 As per the Craneage Strategy included at Appendix 5.2, there will be 1no luffing jib tower crane positioned on Site, under the control of a tower crane coordinator. This will likely be located in the core of the new building.

5.4.22 The tower crane will have the following accessories:

- Anti-collision measures;
- Illuminated signage;
- Park radius devices;
- Aircraft Warning lights;
- Project Sign Board; and
- Anti-climb measures.

5.4.23 Any over sail rights are to be agreed prior to works starting

Construction Traffic Management Plan (CTMP)

5.4.24 To supplement the CMS a detailed CTMP will be developed. The purpose and aim of the CTMP will be to gather and outline the requirements that are to be followed by all persons and companies visiting, travelling or delivering items to the Site.

5.4.25 The CTMP will form part of sub-contractor orders and will require them to follow the procedures outlined within it.

5.4.26 Each control measure will be considered and developed with the aim of reducing the risk of a collision between large goods vehicles working on the Site and vulnerable road users such as the community and businesses around the site.

5.4.27 All vehicles will be banked by trained operatives.

5.4.28 All delivery drivers will receive a copy of the driver induction and traffic management plan layout upon arrival. All deliveries will be pre-booked using an online booking in system and will be controlled by an appointed Logistics Manager.



- 5.4.29 Unloading and loading materials will be done by mechanical means where practicable.
- 5.4.30 Fall protection is to be fitted to delivery vehicles where access to the loading platform is required.
- 5.4.31 The appointed main contractor will encourage all vehicles delivering goods to be registered with FORS and CLOCS schemes thus helping vulnerable road users share the roads confidently with construction traffic.
- 5.4.32 An off-site “hold point” is to be identified and used in the event of road congestion.
- 5.4.33 The CTMP will be a live document and subject to change as the scope of work develops and site conditions change. It is to be used as a guide for all Tier 1, 2 and 3 sub-contractors in the production of their own site specific on and off-site traffic management plans.
- 5.4.34 Deliveries to and from site will be restricted to the site hours.

Parking of Vehicles for Site Operatives and Visitors

- 5.4.35 Due to the nature of the Site there is no opportunity to provide any parking on-site. There is no parking permitted on the roads around Site. Available parking is detailed in Appendix 5.2.
- 5.4.36 Site personnel and contractors will be allowed to unload their equipment and tools, and then be guided to the appointed car parks.
- 5.4.37 Where the opportunity is available, the Applicant will make every effort to employ local labour and procure subcontractors from the surrounding area. The Applicant will encourage all subcontractors and workforce to use public transport or alternative means of transport where possible (cycling or walking).

Loading and Unloading

- 5.4.38 All loading and unloading will be done within the Site boundary.
- 5.4.39 Unloading and loading of materials will be done by mechanical means where practicable.
- 5.4.40 Fall protection will be fitted to delivery vehicles where access to the loading platform is required.
- 5.4.41 If elements of the site compound are to be delivered, due to their temporary form, they will be offloaded using either a mobile crane or via a lorry mounted Hiab.



5.4.42 Each subcontractor will produce a specific risk assessment for their works taking cognisance to the control measures contained in this CMS document.

Storage of Plant and Materials

5.4.43 All plant will be stored on site after hours.

5.4.44 All plant will be immobilised when not in use and doors locked.

5.4.45 All standing plant will be provided with a suitably sized drip tray.

Site Access and Security

5.4.46 Due to the high-profile nature of this project, it is essential that the security of the Site is maintained at all times. The objective will be to secure the Site from unwanted personnel both within and outside of working hours.

5.4.47 Security will reduce theft, fraud and most importantly maintain a safe and secure environment for all parties involved. When the Site is open, traffic marshals will manage the access gates for deliveries at all times to ensure safe access of vehicles into and out of the site and maintain security.

5.4.48 The Site boundary will be secured with a full height timber hoarding.

5.4.49 Hoarding lighting will be provided along the public footpaths around the Site.

5.4.50 Vehicle access gates will be sited at the loading bays and be controlled by traffic marshals. These will be kept closed at all times, apart from when vehicles are entering or exiting the site compound.

5.4.51 Outside of working hours, there will be a security guard on site, as well as CCTV monitoring to the perimeter and boundaries, thus ensuring that the Site remains fully secure at all times.

5.5 Environmental Control Measures

5.5.1 The following section will detail the control measures that will be implemented to ensure that the emission of dust and dirt during the demolition and construction of the proposed Development is managed appropriately.

Pollution Controls

5.5.2 The following list sets out measures that will be put in place to prevent pollution and would conform to the best practice policy proposed by technical guidance notes (TGN) issued by NRW and the Pollution Prevention Guidelines (PPGs):



- Spill kits easily identified and located.
- Emergency Spill Drill training and tests to be undertaken periodically.
- Spillages reported immediately so that a Spill Response can be initiated.
- Materials stored correctly and in pre agreed designated areas.
- Fuel stored in a lockable and double bunded storage area previously agreed with a drip tray provided if the filling point is outside the bunded area.
- Drip trays to collect leaks from standing pumps or standing plant.
- Any contaminated ground will be removed as soon as practicable and stored in a segregated area for disposal away from other stockpiles or materials.
- Concrete washout areas will as a minimum be a lined skip, which can be dewatered and broken out at regular intervals will be provided or a proprietary system will be implemented.
- Road sweeper washout areas either offsite or in a designated washout out area will be agreed with the main contractor.
- All abandoned below ground drainage or service ducts to be removed (grubbed out), filled or ends blocked to ensure there are no pathways for pollutants to enter the ground.
- Arisings from excavations and piling works will be segregated.
- Perched water found in any excavations should be pumped through fuel traps if hydrocarbons are evident.

Air Quality

- 5.5.3 It is recognised that a key concern for the local community and the surrounding areas will be any disturbance to air quality caused by traffic generated during the construction of the Proposed Development.
- 5.5.4 There are a number of site activities to be carried out that have the potential to generate substantial amounts of dust and debris. These include disk cutting, concrete breakout, filling skips, reduced level digging, and ground build up.
- 5.5.5 To minimise the effects of any dust and debris generated on site the following control measures will be employed:
- Erect solid barriers around the site boundary.



- Tarmac traffic routes to and from site as soon as possible.
- Employ a road sweeper when required to maintain tarmac traffic routes around the site and also the incoming infrastructure of the site.
- Provide a water bowser and hose to dampen down dust/debris during dry periods.
- Ensure screens are fitted and used by all wagons delivering and removing debris such as stone and muck from site.
- An operative with a lance and jet wash will clean the wheels of wagons leaving site when required.
- Provide skips and bins that are adequately covered; this will prevent any lighter materials being picked up by prevailing winds and blowing away.
- Ensure equipment is fitted with dust bags, on tool extraction and / or water suppression where possible.
- Bag or cover materials such as sand and cement.
- Weigh down all light materials.
- Dispose of waste materials immediately.
- Record and immediately take action to mitigate any complaints.
- Damp down stockpiles of any excavation arising.
- Monitor wind direction and strength; if there is a potential for blown dust and debris to be a problem, work suspended until measures are put in place to control the problem or the wind changes.
- Damp down dust through the use of water mist generators, such as a Spray Cannon.

5.5.6 Air Quality monitoring stations will set up around the Site to monitor dust levels. If dust levels exceed the agreed targets, then the Project Manager will receive an email and text notification. At this point the relevant mitigation measures (as set out above) will be implemented to control the situation.

5.5.7 Further information on the potential effects of the Proposed Development on air quality is provided within Chapter 8.



Noise and Vibration

- 5.5.8 Noise and vibration statutory nuisances are controlled under the Environmental Protection Act 1990.
- 5.5.9 Several of the site activities to be undertaken have the potential to generate high noise levels. In order to gauge and thus effectively manage the noise levels experienced, noise levels will be recorded prior to commencing and throughout the completion of all potentially noisy site activities. Measurements of L_{A10T} , L_{A90T} , L_{Aeqt} and L_{Amax} are to be assessed.
- 5.5.10 A combined dust and noise monitoring station will be installed around the perimeter of the Site. If noise levels exceed the agreed targets the relevant mitigation measures, as set out below, will be implemented, as necessary.
- 5.5.11 The following noise control mitigation measures will be implemented on site:
- Complete noisy activities during site hours unless impractical to do so.
 - Inform the client of significantly noisy activities so that they are aware of the potentially high noise levels.
 - Implement a turn off policy for static or intermittent plant and vehicles.
 - Keep plant and equipment well maintained.
 - Operate plant and equipment in a method that minimises noise levels.
 - Select plant and equipment to comply with noise limits.
 - Operate equipment fitted with enclosures in place at all times.
 - Handle materials in a manner that minimises noise (i.e. no dropping materials to reduce impact noise).
 - Locate generators and compressors as far from noise-sensitive receptors as reasonably practicable.
 - Compressors will be fitted with properly lined and sealed acoustic covers which will be kept closed when not in use.
 - Pneumatic percussive tools will be fitted with mufflers of the type recommended by the manufacturer.
 - The selection of vehicles will be made with emphasis on silent types.
 - Radios will not be permitted on site.



- Provide permanent power (site 110V) rather than generators and compressors where possible.
- If required, super-silenced generators will be used.
- The Project Manager will communicate any unavoidable out of hours noisy work to all stakeholders and neighbours a minimum of 48 hours before.
- Record and immediately take action to mitigate any complaints received by the site team.

5.5.12 Further information on the potential noise effects of the Proposed Development is provided within Chapter 7.

5.6 Site Waste Management Plan

- 5.6.1 A construction site waste management plan (SWMP) will be completed and maintained on site by the Project Manager.
- 5.6.2 Contractors should be members of UKCG, and so will commit to using a SWMP in order to implement the waste hierarchy. The SWMP will be used to identify opportunities for elimination, re-use or recycling of materials prior to disposal.
- 5.6.3 All wastes generated during construction of the Proposed Development will be recorded and tracked (ensuring legal and responsible transfer and disposal), with the site team reporting on results.
- 5.6.4 The SWMP will be available for all to see and will be communicated to all persons working on the site at the site induction.
- 5.6.5 Contractors will use the agreed template (BRE SmartWaste for example) to record waste.
- 5.6.6 The principle types of construction materials will be aggregates, stone, concrete, reinforcement steel, steel, gypsum, metals, plastics, canteen waste and some hazardous waste (oils, paints etc).
- 5.6.7 All waste streams will be identified by their European Waste Catalogue code. The European Waste Catalogue codes are transposed into UK law through The List of Wastes (LOW) Regulations.
- 5.6.8 Potential waste streams are set out in Table 5.2 below:



Table 5.2 Potential Waste Streams	
Waste Type	EWC / LOW Code
Concrete	17 01 01
Bricks	17 01 02
Tiles and ceramics	17 01 03
Mixtures concrete, bricks, tiles and ceramics (haz)	17 01 06
Mixtures of concrete, bricks, tiles and ceramics	17 01 07
Wood	17 02 01
Glass	17 02 02
Plastic	17 02 03
Bituminous mixtures containing coal tar	17 03 01*
Bituminous mixtures (e.g. planings)	17 03 02
iron and steel	17 04 05
Mixed metals	17 04 07
Soil & stones (haz)	17 05 03*
Soil & stones (inert or non-haz)	17 05 04
Dredging spoil	17 05 06
Insulation materials containing asbestos	17 06 01*
Construction materials containing asbestos	17 06 05*
Gypsum-based construction materials (haz)	17 08 01*
Gypsum based construction materials (non haz)	17 08 02
Mixed Hazardous - C&D waste	17 09 03*
Mixed C&D waste	17 09 04
Paper and cardboard	20 01 01
Biodegradable waste	20 02 01
Street-cleaning residues	20 03 03
Septic tank sludge	20 03 04
Waste paint and varnish (solvents / haz)	08 01 11*
Waste paint and varnish (non haz)	08 01 12
Paper and cardboard packaging	15 01 01
Plastic packaging	15 01 02
Wooden packaging	15 01 03
Metallic packaging	15 01 04
Packaging	15 01 06



5.6.9 The SWMP will identify the responsible personnel and their roles and responsibilities. This includes maintaining records of waste transfers. The appointed site manager will also ensure compliance within any permits and record keeping.

5.6.10 Contractors must ensure all controlled waste is managed in accordance with the following Duty of Care requirements:

- Ensure all waste is correctly assessed and categorised.
- Prevent the illegal deposit or handling of controlled waste by any other person.
- Prevent waste material from escaping the control of the Applicant.
- Only transfer controlled waste to an authorised person (Waste Collection Authority, the holder of an Environmental Permit, Registered Waste Carrier or Waste Disposal Authority).
- Ensure that non-hazardous waste is transferred under a Waste Transfer Note which must be retained for two years.
- Ensure that hazardous waste is moved under a waste consignment note that provides a clear description of the waste material. The consignment note must be retained for three years.
- The waste is the responsibility of the company until it has been fully recovered or finally disposed of.

5.6.11 The Project Manager (or his appointed deputy) will be responsible for the following:

- Maintaining records of waste transfers for the operations under their control.
- Written Information/Waste Transfer Notes (non-hazardous waste) – two years under environmental legislation but up to six years under commercial requirements.
- Consignment Notes (hazardous/special waste) – three years.
- Maintaining records required for the Waste Stream Assessment and Environmental Plans.
- Maintaining compliance with any exemptions/permits for the sites.
- Ensuring all wastes are stored securely.
- Only using waste suppliers from the preferred supplier list (where this is not possible inform procurement who will provide suitable options).



- When transferring waste to companies not on the approved supplier list ensure that duty of care checks have been carried out and recorded.
- Register the site with NRW as a hazardous waste producer.
- Where possible ensure waste is segregated either on site or off site.
- Set targets for diverting waste from landfill.
- Re-use waste on site where possible.

5.6.12 A pre-commencement BREEAM audit will be undertaken before the works take place, thereby identifying any opportunities for recycling materials are available.

5.6.13 All site waste will be recycled off site at an approved processing plant thus maximising the Applicant's strategy to reduce as much waste to landfill as possible.

5.7 Community Engagement

5.7.1 The contractor will maintain regular contact with local businesses and residents through consultation and community liaison meetings to keep them informed about the scheme and construction activities. Contact details will be made available which will be answerable at all times.

5.8 Incident Planning & Management

5.8.1 An environmental incident is any event which has or could have caused damage to any form of biodiversity. Incidents could include encountering unexpected contamination, flooding, spills and leakages, damage to wildlife and fires.

5.8.2 All types of environmental incident or near miss must be reported, recorded and investigated.

5.8.3 All incident reporting will be done in accordance with an approved Environmental Incident Response Plan.

5.8.4 All site personnel and subcontractors will be made aware of the reporting requirements.

5.8.5 In the event of an environmental incident, appropriate corrective and preventative actions will be proposed, set out and completed.

5.8.6 All incidents or near misses will be recorded on an Environmental Incidents Register.



6 CONSIDERATION OF ALTERNATIVES

6.1 Introduction

6.1.1 Schedule 4 of the EIA Regulations state 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”

6.2 ‘Do Nothing’ Alternative

6.2.1 The first alternative considered is the ‘do nothing’ scenario. This scenario is to assume that the Proposed Development would not be built and considers how the Site would evolve without the Proposed Development in place.

6.2.2 The Site is previously developed, having been cleared in the early 2000s, and is not currently in use. Although planning permission has been granted for residential development on the Site (see Chapter 3) this was not implemented. As such, without the Proposed Development, it is considered likely that the Site would remain in its current state.

6.2.3 The current proposals provide an opportunity to redevelop the Site, resulting in improvements to the local area including townscape, visual and socio-economic benefits. The scheme has been designed to avoid or minimise any potential adverse environmental impacts.

6.2.4 The Proposed Development also contributes to the strategic, sustainable redevelopment of the area, and will improve the supply of student accommodation to support Manchester’s growing student population.

6.3 Alternative Site Locations

6.3.1 The EIA Regulations only require that an ES set out the ‘reasonable’ alternatives which have been considered by the Applicant. As such, it would not be reasonable to consider other sites outside of the Applicant’s control.

6.3.2 However, it is considered that the Proposed Development is located in a sustainable location with excellent public transport links and pedestrian access to the City Centre. The Proposed Development will also enable the redevelopment of an area of



brownfield land not currently in use, contributing the wider regeneration of the local area.

- 6.3.3 Therefore, the Site is considered to be the most suitable location for the Proposed Development in terms of sustainability and environmental impact.

6.4 Alternative Site Design

- 6.4.1 The proposals for the Proposed Development have evolved as the result of an ongoing and iterative design process, in which various design alternatives have emerged and been considered. The design has been influenced by factors including environmental constraints identified through the EIA process; and feedback from stakeholders including university representatives.
- 6.4.2 The scheme has been designed to achieve a BREEAM Excellent rating and will therefore provide a betterment of other similar schemes constructed to building regulations only.
- 6.4.3 Further information on the specific mitigation measures proposed are set out within the relevant technical chapters of this ES.
- 6.4.4 As stated above, the Site currently has planning consent for a mixed-use residential scheme which is still extant until May 2021. However, the EIA Regulations only require that an ES set out the alternatives which have been considered by the Applicant. As the Applicant is a student accommodation provider, it would not be reasonable to consider the alternative of a different form of development.
- 6.4.5 Therefore, the Proposed Development, as illustrated within Appendix 1.2 and described in Chapter 4, is considered to be the optimum design alternative.

6.5 Conclusion

- 6.5.1 It is considered that the Proposed Development is the result of a comprehensive, iterative design process incorporating the views of key stakeholders, as well as environmental constraints.
- 6.5.2 It is concluded therefore that the Proposed Development constitutes the most sustainable alternative for development to meet the needs and objectives of the area, whilst minimising adverse impacts on the environment.



7 NOISE AND VIBRATION

7.1 Introduction

7.1.1 This Chapter reports the likely significant effects of the Proposed Development in terms of noise and vibration in the context of the Site and surrounding area. In particular, it considers the likely significant effects of noise and vibration on existing noise sensitive receptors and on the future residents in the Proposed Development.

7.1.2 This Chapter (and its associated figures and appendices) is not intended to be read as a standalone assessment and reference should be made to the front end of this ES (Chapters 1 – 6), as well as the final chapter, ‘Summary of Residual and Cumulative Effects’ (Chapter 14).

7.2 Legislation, Policy and Guidance

7.2.1 The relevant legislation, policy and guidance are listed below, with details provided in Appendix 7.1.

Legislative Framework

7.2.2 The applicable legislative framework is summarised as follows:

- The Control of Pollution Act (1974), Part III;
- Environmental Protection Act (1990);
- Section 71A of the Town and Country Planning Act 1990; and
- The Town & Country Planning (EIA) Regulations (EIA 2017).

Planning Policy

7.2.3 The applicable planning policy is summarised as follows:

- National Planning Policy Framework (NPPF, 2019); and
- Noise Policy Statement for England (NPSE, 2020).

Guidance

7.2.4 The applicable guidance is summarised as follows:

- Calculation of Road Traffic Noise (CRTN, 1988);
- Design Manual for Roads and Bridges (DMRB, 2019);
- Planning Practice Guidance (PPG, 2019);
- Manchester City Council Planning & Noise Technical Guidance (2015);



- GD03 Information for Developers City Wide Support: Environmental Protection (2015);
- Guidance for Environmental Noise Impact Assessment, Institute of Environmental Management and Assessment (IEMA, 2014);
- British Standard 8233:2014: Sound Insulation and Noise Reduction for Buildings (BS 8233, 2014);
- British Standard 5228: Code of Practice for Noise and Vibration Control on Construction and Open Sites (BS 5288-1, 5288-2, 2014);
- British Standard 4142:2014+A1:2019: Methods for rating and assessing industrial and commercial sound (BS 4142, 2019);
- British Standard 6472-1 'Guide to evaluation of human exposure to vibration in buildings' (6472-1, 2008); and
- British Standard 7385 Part 2: Evaluation & measurement for vibration in buildings – Part 2: Guide to damage levels from ground borne vibration' (BS 7385-2, 1993).

7.3 Assessment Methodology and Significance Criteria

Scope of the Assessment

7.3.1 The assessment scope has been discussed with the Local Authority (i.e. Manchester City Council (MCC)) and is described within the Scoping Report (October 2020).

7.3.2 The scope of the assessment includes the following:

- **Measurement of baseline noise environment.** The existing residual and background noise environment for daytime and night-time periods has been measured. Where suitable safe access was available, unattended long-term measurements at the noise sensitive locations (over a minimum period of 24 hours) were taken. The measurements recorded audio so that dominant noise sources could be identified for unattended periods.
- **Construction noise & vibration assessment.** The likely noise and vibration levels during site works was predicted from the information provided by the Client and noise data and methodology within BS 5228-1: 2014. A review predicted noise levels and determined the significance based on fixed noise limits as per the methodology Annex E of BS 5228-1. If the proposed details indicate an impact that does not satisfy the limits, a scheme for the mitigation of the noise may be



required. Potentially mitigating features include re-siting or re-directing the noise producing plant, barriers, screens, and limiting time and duration of operation.

- **Assessment of site suitability.** The noise impact on the proposed site was calculated with proprietary acoustic environmental noise modelling software. The model included the shielding effect of the existing and proposed buildings. A set of daytime $L_{Aeq,16hr}$, night time $L_{Aeq,8hr}$ and night time maximum $L_{AF,max}$ levels have been determined on which to assess the acoustic risk to residents and on which to base the sound insulation design. Consideration of Site suitability for housing and the potential to achieve the internal and external noise limits described in BS 8233 and assess any commercial sound source in accordance with BS 4142 and local authority guidance has been provided. Guidance on the acoustic implications for potential ventilation strategies, in accordance with the current Part F of the Building Regulations, has also been provided.
- **Assessment of operational noise from the new development.** An assessment of the impact of noise sources associated with the site operations, including internal and external fixed plant, has been undertaken including guidance on appropriate noise limits or mitigation requirements.

Effects Not Considered within the Scope

- 7.3.3 The vibration caused by the railway line to the north-east of the site has been scoped out. The railway line is located more than 100 m away from the boundary of the Site and River Medlock separates the railway line and the Site, which greatly reduces the vibration. On the basis of this, the vibration from the railway line has not been considered further in the assessment.
- 7.3.4 Operational traffic has not been considered as the development does not include car parking spaces for residents and potential changes in traffic is expected to be negligible as a result of the Proposed Development.
- 7.3.5 Operation vibration has not been considered as part of the assessment as there will be no vibration-generating activities from the operation of the development that could be perceivable at the nearby receptors.



Extent of the Study Area

7.3.6 The existing residential buildings adjacent to the Site and proposed developments that have been granted planning permission form the study area. These include the following:

- Existing residential apartments to the east of the Proposed Development (i.e. Stay Deansgate);
- Existing residential apartments to the south of the Proposed Development (i.e. North Towers); and
- Future residential apartments to the north of the Proposed Development.

Consultation Undertaken to Date

7.3.7 Table 7.1 provides a summary of the consultation activities undertaken in support of the preparation of this Chapter.

Table 7.1: Summary of Consultation Undertaken to Date			
Organisation	Individual(s)	Meeting Date and other forms of Consultation	Summary of Outcome of Discussion
Manchester Environmental Health Department		15 th October 2020 Email correspondence	Confirmed acceptable for the baseline noise measurement positions and methodology.
Manchester Environmental Health Department		27 th October 2020 Email correspondence	Identified the existing and future noise sensitive receptors.

Assessment Methodology

7.3.8 The method of baseline data collection and assessment has been agreed with the MCC Environmental Health Officer (EHO) and is in accordance with current guidance and industry best practice. Full details are provided in Appendix 7.1.

Sensitivity of Receptors

7.3.9 The sensitivity of receptors to noise impact during operation have been defined in Table 7.2.

Table 7.2: Sensitivity of the receivers	
Sensitivity of Receptor	Description
High	Residential properties, educational buildings, medical facilities
Medium	Places of worship, community facilities
Low	Commercial premises
Very low	Industrial premises



Significance Criteria

7.3.10 The significance of an effect is determined by integrating the magnitude of the impact (i.e. the level of change) and the sensitivity (i.e. value) of the receptor. Taking into account the sensitivity of the receptor and the magnitude of the impact and using professional judgement, the level of effect as a result of noise and vibration is set out in Table 7.3.

7.3.11 Effects that are deemed to be ‘Significant’ (in EIA terms) for the purposes of this assessment are those that are described as being ‘Moderate’ or ‘Major’ (adverse / beneficial).

Table 7.3: Significance of Effects Matrix				
Sensitivity of Receptor	Magnitude of Impact			
	High	Medium	Low	Very low
High	Major	Moderate	Minor	Negligible
Medium	Moderate	Minor	Negligible	Negligible
Low	Minor	Negligible	Negligible	Negligible
Very Low	Negligible	Negligible	Negligible	Negligible

Onsite Construction Noise

7.3.12 BS 5228 describes methods to determine the significance of the construction noise effects. Here, the threshold of the appropriate absolute noise level based on the ambient noise level is commonly used; the ambient noise level is used to define the assessment category. The quietest facades of all the nearby residential receptors would be in Category A and the applicable threshold values for significance are shown in Table 7.4, below.

Table 7.4: Threshold of Potential Major Construction Noise Impact at Dwellings		
Assessment category and threshold value period (Category C)	Magnitude of impact	
	Not major	Major
Night-time (23:00-07:00)	≤ 55 dB LAeq,T	> 55 dB LAeq,T
Evenings and weekends (19:00-23:00 weekdays, 13:00-23:00 Saturdays and 07:00-23:00 Sundays)	≤ 65 dB LAeq,T	> 65 dB LAeq,T
Daytime (07:00-19:00) and Saturdays (07:00-13:00)	≤ 75 dB LAeq,T	> 75 dB LAeq,T

Construction-related Vibration on Human Receptors

7.3.13 Annex B of BS 5228 includes criteria for determining the magnitude of impact as a result of vibration, reproduced as Table 7.5, below.

Table 7.5: Threshold of Potential Major Construction Vibration Impact at Dwellings		
Continuous Vibration, Peak Particle Velocity, (PPV) mms⁻¹	Magnitude of Impact	Description of Impact
0.14	Negligible	Vibration might be just perceptible in the most sensitive situations for most vibration frequencies associated with



Table 7.5: Threshold of Potential Major Construction Vibration Impact at Dwellings		
Continuous Vibration, Peak Particle Velocity, (PPV) mms^{-1}	Magnitude of Impact	Description of Impact
		construction. At lower frequencies, people are less sensitive to vibration
0.3	Minor	Vibration might be just perceptible in residential environments
1.0	Moderate	It is likely that vibration of this level in residential environments will cause complaint, but can be tolerated if warning and explanation has been given to residents
10.0	Major	Vibration is likely to be intolerable for any more than a very brief exposure to this level in most building environment

Construction-related Vibration on Buildings

7.3.14 BS 5228 gives the guideline values above which the cosmetic damage of building may occur. The guidance is reproduced within Table 7.6 below.

Table 7.6: Transient vibration guide values for cosmetic damage			
Type of building	Peak Particle Velocity (PPV) in frequency range of predominant pulse		Magnitude of impact
	4 Hz to 15 Hz	15 Hz and above	
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	Major if PPV is above these guidance value
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	Major if PPV is above these guidance value

Building Services Noise

7.3.15 At this stage, no details of any building services plant are available. Such plant may be required at the shared use area of the Proposed Development. BS 4142 describes methods for rating and assessing sound of a commercial nature in terms of the potential adverse impact on sound sensitive receptors. This method considers the impact of sound characters and states that, if the rating level is 5 dB above the background, the noise impact magnitude is likely to be moderate or higher.

7.3.16 Manchester City Council has a more stringent threshold requirement for noise from fixed plant and requires that external mounted plant to achieve a rating level of <5 dB, the typical background level at the nearest sensitive location. The magnitude of impact levels are shown in Table 7.7, below.

Table 7.7: Magnitude of Impact levels for Building Services Plant		
Difference between rating level and background level	Potential Impact according to BS 4142	Magnitude of Impact
+10 dB	Significant adverse impact	Major
+5 dB	Indication of adverse impact depending on context	Moderate
0 dB	Indication of low impact depending on context	Minor



Table 7.7: Magnitude of Impact levels for Building Services Plant		
Difference between rating level and background level	Potential Impact according to BS 4142	Magnitude of Impact
-5 dB or less	Indication of low impact	Negligible (this is requested by the MCC)

Intrusive Noise on the Proposed Development

7.3.17 Professional Practice Guidance on Planning & Noise BS 8233 and the World Health Organisation (WHO) Guidelines for Community Noise are considered to establish the internal noise level limits for the Proposed Development. This guidance is consistent with Manchester's Local Development Framework and Guidance Document Public Protection Information for Developers.

7.3.18 The proposed criteria are presented in Table 7.8, below. The daytime period is defined as the sixteen hours between 07:00 to 23:00 hours and the night-time period is defined as the eight hours between 23:00 to 07:00 hours.

Table 7.8: Internal Noise Level Limits				
Location	Guideline upper limits, dB			Magnitude of Impact
	L _{Aeq,daytime}	L _{Aeq,night-time}	L _{AFmax} Night time	
Living room (if applicable)	35	-	-	Moderate if above any of these values. MCC requests the internal noise levels to be below these levels
Bedroom	-	30	45	
Terraces (if applicable)	55	-	-	

7.4 Baseline Conditions

7.4.1 The baseline noise environment was measured continuously for 24 hours from 19th October 2020 at the following two positions (as shown in Appendix 7.2) to establish the existing background sound levels:

- Position LT1: at the rear of Stay Deansgate, and
- Position LT2: at the Proposed Development site

7.4.2 The measured baseline noise levels are shown in Table 7.9 below. The measured noise levels include the road traffic from the nearby road network, the construction noise from the residential development to the north of the Site, building services plant noise from the east (Stay Deansgate) and from the south (North Tower).

Table 7.9: Measured baseline noise levels							
Position	L _{Aeq,16hr} , dB	L _{Aeq,8hr} , dB	n th highest L _{AFmax} , dB			L _{A90,day} , dB	L _{A90,night} , dB
			1 st	10 th	15 th		
LT1	63	55	80	72	70	58	51
LT2	73	64	90	82	82	65	47



Future baseline

- 7.4.3 In the future the construction work from the development to the north of the Site will be complete and no construction noise emitted from that site, however, building services plant noise associated with that development might affect the Site.
- 7.4.4 Other permitted developments around the area could potentially increase the traffic flow, including Castle Wharf (ref 113870/FO/2016), Crown Street Phase 1 (ref 119806/FO/2018), Land Bound By Silvercroft Street, Crown Street, And The Mancunian Way (ref 126668/FO/2020), and Transition (ref 116850/FO/2017).
- 7.4.5 It is not possible to quantify the likely changes of the traffic flow at this stage. Based on the data from the planning portal, the number of new residential units in these permitted developments are:
- Castle Wharf – 188 under construction.
 - Crown Street Phase 1 – 664 under construction.
 - Land Bound by Silvercroft Street, Crown Street, and the Mancunian Way – 855 planning permission not yet implemented.
 - Transition – 399 planning permission not yet implemented.
- 7.4.6 The total increase of new residential units is 2,106. The average annual daily traffic flow on A56 to the north of the proposed site in 2019 is 15,764 vehicles. If all the new residential units contribute two additional vehicle movements per day on the A56, the potential noise increase would be 1 dB. If the future residents use other diverted routes such as the A57(M), the noise level increase is likely to be lower than 1 dB.

Sensitive Receptors

- 7.4.7 The major existing noise source at the Site is road traffic on the A56. Other noise sources, such as mechanical plant noise from Stay Deansgate and North Towers, are considered to be minor.
- 7.4.8 The noise and vibration sensitive receptors within the study areas are considered to be:
- Existing residential apartments to the east of the Proposed Development: Stay Deansgate:
 - Existing residential apartments to the south of the Proposed Development: North Towers:



- Future residential apartments to the north of the Proposed Development: and
- Future residents at the Proposed Development.

Limitations

- 7.4.9 The baseline noise measurements were carried out from 19th October to 20th October 2020 when Manchester was partly locked down (Tier 2) due to the Covid-19 pandemic, with schools and retail outlets open as usual and restrictions for visits to pubs and restaurants.
- 7.4.10 As such, the major noise source of road traffic on the A56 might be lower than usual and, in turn, the measured noise levels might be lower than normal conditions.
- 7.4.11 During the Covid lockdowns the Institute of Acoustics has provided guidance on the suitability of noise surveys during lockdown and has recommended that desktop assessments could compare noise levels from other sources, such as historic survey data from nearby planning applications or with predicted noise levels from transportation sources, such as provided by Defra.
- 7.4.12 The traffic flow during the noise survey dates is around 85% of the normal traffic flow in February 2020 (before Covid) according to the data from Department for Transport statistics (<https://www.gov.uk/government/statistics/transport-use-during-the-coronavirus-covid-19-pandemic>). This is equivalent to less than 1 dB drop of road traffic noise level. The measured levels have also been compared with the Defra noise maps and the daytime levels are very similar. As the traffic flow is not significantly lower than normal, the diurnal pattern of traffic flow is considered similar to normal condition. On this basis no changes to the measured levels are considered necessary for this assessment.

7.5 Assessment of Effects

Design Solutions and Assumptions

- 7.5.1 A range of good site practices (in accordance with current governing best practice guidance) will be adopted by the Contractor in order to mitigate the construction phase noise and vibration. The contractor will follow best practicable means to minimise noise from the equipment, thereby ensuring that onsite activities do not emit unnecessary noise and vibration. All the construction works will only be carried out within the working hours agreed with the Local Authority.
- 7.5.2 The contractor will consider mitigation in the following order:



- Control at source – e.g. the selection of quiet and low vibration equipment, review of construction programme and methodology to consider quieter methods, and use of less intrusive alarms, such as broadband vehicle reversing warnings;
- Control on-site – e.g. location of equipment on site, control of working hours, the provision of acoustic enclosures, and screening, including local screening of equipment, perimeter hoarding or the use of temporary stockpiles to limit the hours of movements; and
- Control off-site – e.g. where despite the implementation of BPM, the noise exposure is predicted to exceed the agreed criteria, the Contractor may offer: noise insulation; or ultimately temporary re-housing.

7.5.3 Typical BPM measures which comprise of both physical and management measures would include:

- Restrictions on working hours;
- scheduling of noisy works to the least sensitive working hours;
- adopting quiet working methods, using plant with lower noise emission levels;
- adopting working methods that minimise vibration generation particularly with regard to demolition activities and piling;
- use of plant conforming with the relevant EU directives relating to noise and vibration;
- ensuring that all plant is properly maintained, (mechanisms properly lubricated, faulty silencers replaced, worn bearings replaced, cutting tools sharpened etc.);
- closing acoustic covers to engines when in use or idling;
- use of electrically powered equipment in preference to internal combustion powered equipment;
- hydraulic equipment in preference to pneumatic equipment;
- wheeled plant in preference to tracked plant;
- locating plant as far away from noise and vibration sensitive receptors as practicable;
- installation of site hoardings or perimeter noise barriers;
- use of temporary acoustic enclosures or screens around specific noisy static plant;



- use of large fully enclosed acoustic buildings to surround activities and/or worksites;
- avoiding the unnecessary revving of engines and switch off equipment when not in use;
- starting-up plant and vehicles sequentially rather than at the same time;
- keeping internal haul routes well maintained to minimise impulsive noise and vibration from vehicles running over discontinuities in the running surfaces;
- fitting rubber linings to chutes, hoppers and dumper vehicles to reduce impact noise from material transfer;
- minimising drop heights of materials;
- setting of noise and vibration limits at boundary or at other locations together with associated monitoring during the works;
- carrying out regular inspections of mitigation measures (or BPM audits) to ensure compliance with noise and vibration commitments;
- providing regular briefings for all site-based personnel so that noise and vibration issues (including the requirement to employ BPM at all locations at all times) are understood and that generic and site-specific mitigation measures are explained and adhered to;
- ensuring that unloading is carried out within the worksite rather than on adjacent roads or laybys;
- phasing of materials deliveries to be controlled on a 'just in time' basis to minimise noise and congestion on roads around the site; and
- setting out the stakeholder engagement initiatives to be undertaken, including the provision of information to local residents about noisy works and/or works planned to take place outside of core working hours.

7.5.4 There may be tests of the emergency system, such as generators or fire alarm, but these tests will be scheduled to occur during agreed working hours and incur the least disturbance possible.



Assessment of Effects

Construction Phase

Construction Site Activities

- 7.5.5 Construction activities and associated plant are briefly described in the Construction Method Statement and the Outline Build Strategy. The noisiest equipment onsite will be heavy goods vehicles delivering materials, mobile plant required to excavate and move material and cranes required to lift construction materials to higher levels. In terms of the likely noise impacts, the earthworks to remove topsoil, excavate the ground, piling, refilling to the finished level, concrete pumping and finishing are likely to be the source of the main noise impacts at nearby receptors. The main construction phases, noise sources and duration are summarised in Table 7.10.

Table 7.10: Construction phases and potential noise and vibration sources		
Potential noise and vibration sources	Construction phases	Comments
Heavy goods vehicles	All phases	Low noise level long duration
Excavators	Preconstruction works	Medium noise level short duration
Piling rigs	Foundation works	High noise / vibration level short duration
Tower cranes	Main construction phase	Medium noise level long duration

Construction Traffic

- 7.5.6 The adjacent A56 to the Proposed Development is a major road with high traffic flows. The worst-case construction traffic is expected to be considerably less than 10% of the existing traffic on the A56. The magnitude of noise impact from the construction traffic on the nearby public roads is, therefore, likely to be negligible to all noise sensitive receptors. As such, the level of effect without mitigation measures in place is Not Significant.

Site preparation

- 7.5.7 Excavators are likely to be used during site preparation. The typical sound power level of a tracked excavator / loader is around 108 dB L_{WA} according to the historical data in BS 5228.
- 7.5.8 It is assumed that the excavator could be used anywhere within the site. The predicted noise levels and the potential level of impact is shown in Table 7.11.

Table 7.11: Predicted site preparation noise levels and their impact		
Noise sensitive receptor (NSR)	Noise level range dB L_{Aeq,T}	Magnitude of impact
Stay Deansgate	68 – 80	Major
North Tower	67 – 74	Medium for daytime works;



Table 7.11: Predicted site preparation noise levels and their impact		
Noise sensitive receptor (NSR)	Noise level range dB L _{Aeq,T}	Magnitude of impact
Residential development to the north (Under construction)	67 – 74	Major if works during evening, night time and weekends

7.5.9 The sensitivity of all the receptors are high and the magnitude of adverse impact is between medium and major. As such, the level of effect without mitigation measures in place is Significant.

Piling

7.5.10 The piling sound power level depends on the piling methods and also related to the piling rig, pile type and soil type. The sound power levels can range from 110 dB L_{WA} to 130 dB L_{WA}. Based on the sound data in BS 5288, the most typical sound power level of piling is around 120 dB L_{WA}. This value is used to estimate the piling noise impact to represent a typical noise level.

7.5.11 The piling noise level range at the identified noise sensitive receptors are predicted by assuming that the piling rig could be working at a position close or far from the noise sensitive receptors within the Site. The predicted construction noise levels at different and its impact is shown in Table 7.12.

Table 7.12: Predicted piling noise levels and their impact		
Noise sensitive receptor (NSR)	Noise level range dB L _{Aeq,T}	Magnitude of impact
Stay Deansgate	77 – 89	Major
North Tower	76 – 83	Major
Residential development to the north (Under construction)	76 - 83	Major

7.5.12 The sensitivity of all the receptors are high and the magnitude of adverse impact is major. As such, the level of effect without mitigation measures in place is Significant.

Construction Vibration

7.5.13 The predicted vibration levels of piling are in Table 7.13. It is assumed that a vibratory piling method is used with a scaling factor of 266, which is based on a 5% probability that these levels are exceeded.

Table 7.13: Predicted Vibration Levels Due to Piling				
Parameter	Distance from source to receiver			
	20 m	40 m	60 m	80 m
Predicted PPV	5.4	2.2	1.3	0.9



7.5.14 Where the distance from source to receiver is < 80 m, the value of 1 mm/s may be exceeded and adverse effects on human receptors may occur. Where the distance is < 20 m, the value of 5 mm/s may be exceeded and cosmetic damage to existing building(s) may occur. The sensitivity of the receptors are high and if piling works occur at close vicinity to the vibration sensitive receptors, this could cause Moderate adverse impact. As such, the level of effect without mitigation measures in place is Significant.

Building Services

7.5.15 At this stage, there are no details of the building services which are likely to be included within the Proposed Development. If the noise from plant is controlled, such that the rating level is more than 5 dB below the typical background noise levels, the impact magnitude is low and the effects would be minor adverse. Noise limits can be set as planning conditions and attenuation applied to the equipment.

Noise Intrusion on the Proposed Development

7.5.16 The noise levels within the Proposed Development should be below the major adverse impact levels and comply with the Local Authority Planning requirements.

7.5.17 The main noise ingress path from outside to inside is through the window and façade openings, such as vents. The calculation method for façade sound insulation is in accordance with BS 8233 and the principles of BS EN 12354-3. From ISO 16283, the reverberation time is typically 0.5 seconds across the relevant frequency range for a furnished living room. This value is used for the bedrooms.

7.5.18 The room and window dimensions used in the calculations are taken from the architects' plans and elevations. A suitable ventilation strategy may be AD-F System 3 (continuous mechanical extract (MEV)), or AD-F System 4 (continuous mechanical supply and extract with heat recovery (MVHR)). Should the latter system be implemented, trickle vents are not required.

7.5.19 The sound reduction of the other façade elements is likely to be much higher than that of the glazing and ventilation provision. Therefore, noise penetration through other façade elements is disregarded.

7.5.20 Calculated internal noise levels based on manufacturer's test data for the example glazing and ventilation products listed in the summary table are presented in Table 7.14.



Table 7.14: Potential Glazing and Ventilation Performance			
Façade	Glazing	Vent	Potential AD-F ventilation strategy
All	$\geq 36 \text{ dB } R_{w+C_{tr}}$	Based on 1 no. vent per room, and $\geq 41 \text{ D}_{n,ew+C_{tr}}$	System 3 (MEV) or System 4 (MVHR)

7.6 Mitigation

7.6.1 The key objective of mitigation is to avoid, offset or reduce the significant adverse effects of a Development. The mitigation strategy should follow the following hierarchy:

- Avoid;
- Reduce; or
- Remedy.

7.6.2 Mitigation can be carried out through design or management, the latter being often considered separately for construction and operation.

Construction Phase

Construction Noise

7.6.3 As per paragraph 7.5.3, a range of good site practices will be adopted by the contractor in order to mitigate construction phase noise and vibration.

7.6.4 To reduce the impact from excavator noise, the appropriate measures would include using quieter equipment and methods, localised screening, undertaking the noisiest activities at the least sensitive times and switching off equipment when not in operation.

7.6.5 To reduce the noise impact from piling operation the mitigation options would include using quieter piling methods, such as bored piling or auger piling, however piling methods are often selected based on the constraints of the ground conditions.

7.6.6 Should driven piling be required the mitigation options include:

- enclosing the hammer head and top of the pile in an acoustic screen;
- use of resilient pad between pile top and hammer head; and
- temporary barriers between the source and receptors.

7.6.7 These on site measures are likely to reduce the impact to below $75 \text{ dB } L_{Aeq,T}$ at the nearby receptors and below the level of a major impact. With this mitigation, the residual effects would be Not Significant.



7.6.8 A Construction Environmental Management Plan (CEMP) will be prepared, to ensure that all reasonable steps are taken to minimise and mitigate adverse effects from construction traffic.

7.6.9 The CEMP will include details of:

- The agreed construction opening hours & vehicle delivery hours;
- The proposed site compound and manoeuvring arrangements; and
- Offsite vehicle routing.

7.6.10 With suitable routing and hours of delivery, the effects from the construction traffic will be not significant.

7.6.11 The CEMP, which will be secured by way of a planning condition, will provide full details of the construction activities and best practice noise mitigation measures for each stage of the development.

Construction Vibration

7.6.12 As piling is part of the foundation works, the effects from vibration should be mitigated by maintaining a separation distance between the receptors and the piling areas of 20m or more to avoid potential cosmetic damage to the existing buildings.

7.6.13 For the piling works within 80 m to the noise sensitive buildings, other temporary mitigation will be required.

7.6.14 Piling and ground engineering processes are primarily selected on the basis of the ground conditions. Continuous flight auger piling would be a suitable alternative method compared to driven piles, but the suitability of that method would need to be agreed with the project engineers.

7.6.15 Other alternative piling methods which could be adopted include:

- pressed in pre-formed piles;
- auger bored piles; or
- impact bored piles

7.6.16 Should driven or impact pilings be the only suitable piling method due to ground condition constraints the following mitigation methods can be considered:

- removal of obstructions below ground which can hinder progress and exacerbate the transmission of vibration;



- use cut-off trenches which reduce transmission through the ground;
- reduce energy input per blow, for impact piling;
- pre-boring for driven piles;
- bottom driving – lower vibration is associated with slower rate of production; and
- use of variable moment vibrators.

7.6.17 Vibration monitoring can be undertaken at the nearby residential receptors so that alarms can be raised when vibration levels reach a set threshold. These can also be used for sample testing of vibration methods to more accurately determine the levels at receptors.

7.6.18 With these mitigation options it is possible to control the vibration to suitable levels and the residual effect is Not Significant.

Building Services Plant

7.6.19 The detailed mitigation for the operational activities of the building services plant can be managed using planning conditions for the reserved matters applications.

7.7 Residual Effects

7.7.1 Should the above mitigation be put in place during the construction and operation phases of the Proposed Development, the residual significance of effects on the receptors have been assessed as set out in Table 7.15 below.

Table 7.15: Residual Effect			
Description	Initial Effect	Mitigation Measures	Residual Effect
Construction noise	Significant	Standard best practice measures, including low noise equipment, quieter methods of piling and localised screening	Not significant
Construction vibration	Significant	Standard best practice measures, including use of piling methods without driven piles	Not significant
Operational noise – building services plant	Unknown	Industry standard measures and planning conditions	Not significant

7.8 Assessment of Cumulative Effects

7.8.1 As the Proposed Development does not increase predicted traffic flows, there is no change to the impact or cumulative effects due to road traffic noise from nearby developments.



7.8.2 The effects due to impacts from construction activities could occur at the same time as noise impacts due to construction noise from nearby sites. This cannot be quantified or assessed, but can be controlled by the local authority under the Control of Pollution Act 1974.

7.8.3 As such it is not considered that there will be any significant cumulative effects relating to noise or vibration.

7.9 Summary

7.9.1 This chapter considers the effects of construction and operational noise on the noise sensitive receptors present within the Proposed Development and wider study area. The assessment methodology referred to is the latest national and local guidance for environment impact assessment and planning. The local Environmental Protection Team at Manchester City Council was also consulted and the concerns and comments from the Environmental Health Officer has been adopted in this assessment.

7.9.2 The existing baseline noise conditions were measured at the Site and at the nearest noise sensitive receptor. The Proposed Development is very close to the nearby noise sensitive receptors. Most of the construction works will be carried out at a close vicinity from the residential properties and if not mitigated or managed, the construction effects would be Significant.

7.9.3 Vibration levels have been estimated for potential vibratory piling activities and provided the separation distance of source and receiver is > 80 m, the effects would be Not Significant. For smaller separation distances, mitigation may be required.

7.9.4 To mitigate the effects of construction activities, best practical means to minimise the noise and vibration impacts will be adopted.

7.9.5 The effect of the increase in traffic, due to construction traffic, will be negligible and Not Significant on the surrounding roads if the traffic is suitably routed and kept within normal working hours.

7.9.6 The operation of the Proposed Development will include building services plant noise sources. Detailed mitigation will be provided with the reserved matters applications and will include the location and acoustic treatment of plant.



8 AIR QUALITY

8.1 Introduction

- 8.1.1 This Chapter, prepared by Ensaf Consultants, reports the likely significant effects of the Proposed Development in terms of Air Quality in the context of the Site and surrounding area.
- 8.1.2 In particular, it considers the likely significant effects of the construction and operational phases of the development on nearby sensitive receptors with the Greater Manchester Combined Authority (GMCA) Air Quality Management Area (AQMA) as well as likely pollutant exposure of future site users.
- 8.1.3 The chapter has been prepared with due regard to the requirements of Manchester City Council (MCC) Environmental Health Department. Reference should be made to Appendix 8.2 which provides the relevant assessment figures. Reference should be made to Appendix 8.4 for assessment inputs, including ADMS-Roads parameters, traffic data and model verification process.
- 8.1.4 This Chapter (and its associated figures and appendices) is not intended to be read as a standalone assessment and reference should be made to the front end of this ES (Chapters 1 – 6), as well as the final chapter, ‘Summary of Residual and Cumulative Effects’ (Chapter 14).
- 8.1.5 The Air Quality Chapter was directed by Lewis Ellison, Air Quality Consultant at Ensaf Consultants with over 4 years' experience in the air quality sector. His role includes the production and project management of Air Quality Assessments in support of planning applications for a wide range of UK and international clients and sectors. He also has detailed knowledge of the Local Air Quality Management (LAQM) regime, Environmental Impact Assessment (EIA) and co-ordination of multi-disciplinary environmental assessment work in support of planning applications.

8.2 Legislation, Policy and Guidance

- 8.2.1 The relevant legislation, policy and guidance are listed below, with details provided in Appendix 8.1.

European Legislative Framework

- 8.2.2 The applicable legislative framework is summarised as follows:

- European Union (EU) Directive 2008/50/EC.



National Planning Policy

- The National Planning Policy Framework (NPPF), updated on 19th February 2019); and
- The National Planning Practice Guidance (NPPG), relevant chapters produced on 1st November 2019.

UK Legislative Framework

- The Air Quality Standards (Amendment) Regulations (2016);
- Section 82 of the Environment Act (1995) (Part IV); and
- Air Quality Strategy (AQS) 2007.

National Guidance

8.2.3 The applicable guidance is summarised as follows:

- Local Air Quality Management Technical Guidance 2016 (LAQM.TG (16)), DEFRA, 2016¹;
- Guidance on the Assessment of Dust from Demolition and Construction, Institute of Air Quality Management (IAQM), v1.1, June 2016; and
- Land-Use Planning and Development Control: Planning for Air Quality, Environmental Protection UK and IAQM, January 2017.

8.2.4 Shown below are Air Quality Objectives (AQOs) detailed within the relevant legislation that are considered further during the preparation of the Air Quality chapter.

Table 8.1: Air Quality Objective		
Pollutant	Air Quality Objective	
	Concentration (µg/m³)	Average period
NO ₂	40	Annual mean
	200	1-hour mean; not to be exceeded more than 18 times a year
PM ₁₀	40	Annual mean
	50	24-hour mean; not to be exceeded more than 35 times a year
PM _{2.5}	25	Annual mean

1 Local Air Quality Management Technical Guidance 2016 LAQM (TG16), DEFRA, February 2018.



8.2.5 The advice provided in DEFRA guidance LAQM TG(16)¹ on where the AQOs for pollutants considered within this report apply.

Table 8.2: Examples of Where the Air Quality Objectives Apply		
Average Period	Objectives Should Apply At	Objectives Should Not Apply At
Annual Mean	All locations where members of the public might be regularly exposed. Building façades of residential properties, schools, hospitals, care homes, etc.	Building façades of offices or other places of work where members of the public do not have regular access. Hotels, unless people live there as their permanent residence. Gardens of residential properties. Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short term.
24 – Hour Mean	All locations where the annual mean objective would apply, together with hotels. Gardens of residential properties.	Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short term.
1 – Hour Mean	All locations where the annual mean and 24-hour mean objectives apply. Kerbside sites (for example, pavements of busy shopping streets). Those parts of car parks, bus stations and railway stations etc which are not fully enclosed, where members of the public might reasonably be expected to spend one hour or more. Any outdoor locations where members of the public might reasonably be expected to spend one hour or longer.	Kerbside sites where the public would not be expected to have regular access.

Local Planning Policy

8.2.6 The Manchester Local Development Framework (LDF) Core Strategy was formally adopted in 2012 and provides a framework for development within the City. The LDF comprises a number of documents which set out MCC's spatial policy framework. A review of the Core Strategy indicated the following policy in relation to air quality that is relevant to this assessment:

- Policy EN 16 – Air quality;
- Policy CC5 – Transport; and
- Policy DM1 – Development Management



8.2.7 Reference has been made to these policies during the undertaking of this Air Quality Assessment (AQA) by assessing pollutant concentrations across the Site and determining potential air quality impacts as a result of the Proposed Development.

8.3 Assessment Methodology and Significance Criteria

Scope of the Assessment

8.3.1 Table 8.3, below, provides a summary of the potential effects which have been considered within the scope of this assessment

Table 8.3: Summary of Assessment Scope			
Receptor	Impact	Potential Effect	Scoped In / Out
Existing Residential	Construction Dust	Reduced levels of amenity	Scoped In
Existing Residential	Road Vehicle Traffic Exhaust Emissions	Impact on existing air quality conditions	Scoped In
Existing Residential	Construction Dust	Reduced levels of amenity	Scoped In
AQMA	Road Vehicle Traffic Exhaust Emissions	Impact on existing air quality conditions	Scoped In
Proposed Residential	Road Vehicle Traffic Exhaust Emissions	Introduction of new residents into an AQMA	Scoped In
Proposed Residential	Road Vehicle Traffic Exhaust Emissions associated with trip generation from the Site	Reduced levels of amenity	Scoped Out
Ecological	Construction Dust	Impact on Ecological Designations	Scoped Out

Effects Not Considered within the Scope

8.3.2 The Proposed Development has the potential to impact on existing air quality as a result of road traffic exhaust emissions, such as Nitrogen Dioxide (NO₂) and Particulate Matter (PM₁₀ and PM_{2.5}) associated with vehicles travelling to and from the Site. A screening assessment was, therefore, undertaken using the criteria contained within the EPUK and IAQM guidance documents to determine the potential for trips generated by the Proposed Development to affect local air quality.

8.3.3 The EPUK and IAQM guidance document states the following criteria to help establish when an air quality assessment is likely to be considered necessary:

- Proposals that will cause a change in Light Duty Vehicle (LDV) flows of more than 100 AADT within or adjacent to an AQMA, or more than 500 elsewhere; and



- Proposals that will cause a change in Heavy Duty Vehicle (HDV) flows of more than 25 AADT within or adjacent to an AQMA, or more than 100 elsewhere.

8.3.4 Should the above criteria not be met, the EPUK and IAQM guidance document considers air quality impacts associated with the scheme to be not significant and no further assessment is required. Conversely, should the criterion be exceeded it may be deemed necessary that further assessment is required. Any additional vehicle movements associated with the Proposed Development will generate exhaust emissions, such as NO₂, PM₁₀ and PM_{2.5} on the local and regional road networks.

8.3.5 The development will not include any car parking and, as such, trips generated by the development site will be minimal. It is, therefore, expected that there will be far less than 100 AADT trips from the Proposed Development. It is, therefore, not anticipated that the operational phase of the Site would result in a change of AADT flows of more than 100, produce 25 HDV movements per day or affect average speeds on the local road network. Subsequently, potential air quality impacts associated with operational phase road vehicle exhaust emissions are predicted to be negligible significance in accordance the EPUK and IAQM4 screening criteria.

Extent of the Study Area

8.3.6 Ambient concentrations were predicted over the Proposed Development site and surrounding highway network. One Cartesian grid was included in the model over the area at approximately NGR: 383210, 397340 to 383400, 397530 at heights of 1.5m and 5.9m to represent the proposed ground floor and mezzanine floor level for the 2025 opening year scenario.

8.3.7 Results were subsequently used to produce contour plots within the Surfer software package. Reference should be made to Appendix 8.4 for details of road and traffic data and monitoring locations used within the assessment, as well as Figure 6 within Appendix 8.2 for a graphical representation of the verification inputs and operation phase DS extents.

Assessment Methodology

8.3.8 The method of baseline data collection and assessment is in accordance with current guidance and industry best practice. Full details are provided in Appendix 8.3. The methodology is split into the following two main sections:

- Construction Phase assessment; and
- Operational Phase assessment.



Construction Phase Assessment

- 8.3.9 There is the potential for fugitive dust emissions to occur as a result of construction phase activities. These have been assessed in accordance with the methodology outlined within the IAQM document 'Guidance on the Assessment of Dust from Demolition and Construction'.
- 8.3.10 Activities on the Site have been divided into four types to reflect their different potential impacts. These are:
- Demolition;
 - Earthworks;
 - Construction; and
 - Trackout.
- 8.3.11 The potential for dust emissions was assessed for each activity that is likely to take place and considered three separate dust effects:
- Annoyance due to dust soiling;
 - Harm to ecological receptors; and
 - The risk of health effects due to a large increase in exposure to PM₁₀.
- 8.3.12 To assess the risk of potential dust impacts, a site is allocated to a risk category based on two factors:
- The scale and nature of the works, which determines the magnitude of dust arising as: small, medium or large; and
 - The sensitivity of the area to dust impacts, which can be defined as low, medium or high (sensitivity).
- 8.3.13 The two factors are combined to determine the risk and level of effect without mitigation applied. Once this has been determined and the appropriate mitigation measures identified, the final step is to determine the significance of any residual impacts.
- 8.3.14 For almost all construction activity, the aim should be to control effects through the use of effective mitigation. Experience shows that this is normally possible. Hence the residual effect will normally be 'not significant' in EIA terms. This has been described as negligible within this report to provide continuity between assessment terminologies.



8.3.15 The determination of significance relies on professional judgement and reasoning should be provided as far as practicable. This has been considered throughout the assessment when defining predicted impacts as detailed within Appendix 8.3.

Operational Phase Assessment

8.3.16 The Proposed Development is located within the Greater Manchester AQMA and, as such, the proposals have the potential to introduce new receptors into an area of existing poor air quality, as well as to cause impacts upon existing pollution levels at nearby sensitive receptors within the AQMA.

8.3.17 Detailed dispersion modelling was undertaken to quantify NO₂ pollutant exposure across the Site and determine suitability for the proposed use. The following modelling scenarios were utilised during the assessment:

- 2019 as baseline year for verification against latest ratified data; and
- Opening year do-something (DS) (predicted traffic flows in 2025 should the proposals be completed).

8.3.18 It should be noted that air quality is predicted to improve in the future. In order to provide a robust assessment, however, emission factors for 2019 were utilised within the dispersion model. The use of 2025 traffic data and 2019 emission factors is considered to provide a worst-case scenario and, therefore, a sufficient level of confidence can be placed within the predicted pollution concentrations.

8.4 Baseline Conditions

8.4.1 Existing air quality conditions in the vicinity of the application Site were identified in order to provide a baseline for assessment. These are detailed in the following sections.

Local Air Quality Management

8.4.2 As required by the Environment Act (1995), GMCA has undertaken a review and assessment of air quality within their area of administration. This process has indicated that concentrations of NO₂ are above the AQO within this area. As such, one AQMA has been declared and is described as: *This is the part of the Greater Manchester Combined Authority AQMA located within the Manchester City Council area.*



8.4.3 The application Site is located within the AQMA and, as such, there is potential for the Proposed Development to cause air quality impacts during the construction phase and expose future site users to increased pollution levels during the operational phase.

8.4.4 GMCA has concluded that concentrations of all other pollutants considered within the AQS are currently below the relevant AQOs and, as such, no further AQMAs have been designated.

Air Quality Monitoring

8.4.5 Monitoring of pollutant concentrations is undertaken by GMCA using continuous and passive methods throughout their areas of administration. A review of GMCA's most recent Air Quality Monitoring Data indicated that there is currently one automatic monitor within the vicinity of the Proposed Development. Table 8.4 presents the latest ratified year of monitoring data. Exceedances of the relevant AQO are highlighted in bold. Monitoring of PM_{2.5} is not currently undertaken by MCC in the vicinity of the Site.

Table 8.4: Automatic Monitoring Results							
ID		Type	NGR (m)		Dist' to Site (m)	2019 Annual Mean Concentration (µg/m ³)	
						NO ₂	PM ₁₀
MAN1	Manchester Oxford Road	Kerbside	384233	397287	952	59	26

8.4.6 As shown in Table 8.4 the annual mean, AQO for NO₂ was exceeded in recent years at the Oxford Road automatic site. Exceedances are likely due to the kerbside location adjacent to an arterial road within an AQMA. It should be noted that this monitoring location is classified as a kerbside site and, as such, will only be considered further in context of the baseline assessment and not used for model verification purposes. This is in accordance with LAQM (TG16), which suggests that the inclusion of kerbside location within the verification procedure may lead to an over-adjustment of modelling at roadside sites. This may then lead to inaccuracies during the modelling of potential exposure across the Proposed Development and potential impacts at nearby sensitive receptor locations.

8.4.7 GMCA also monitors NO₂ concentrations in close proximity to the Proposed Development using passive diffusion tubes. A review of the most recent air quality monitoring data indicated seven diffusion tubes located within the vicinity of the application Site, presented in Table 8.5 with exceedances of the relevant AQO (highlighted in bold).



Table 8.5: Diffusion Tube Monitoring Results								
ID		Type	NGR (m)		Dist' to Site (m)	Annual Mean Concentration ($\mu\text{g}/\text{m}^3$)		
						2017	2018	2019
MA77	Hewitt Street	Urban Background	383602	397488	315	38.81	40.99	43.66
MA97	Chester Road	Urban Traffic	382886	397215	460	-	-	32.29
MAN29A	Oxford Street	Urban Traffic	384114	397512	826	57.70	58.77	55.39
MAN82	Manchester Oxford Road	Urban Traffic	384233	397287	952	56.66	51.95	51.58
SA81	Regent Road	Roadside	382571	397718	775	-	-	46.40
SA60	Regent Road	Roadside	382445	397724	896	40.70	40.23	36.66
SA59	West Crown Ave	Urban Traffic	381822	397895	1,541	36.67	33.31	32.45

8.4.8 As shown in Table 8.5 the annual mean, AQO for NO_2 was exceeded at five of the seven locations within recent years. Exceedances are likely due to their kerbside and roadside locations within or adjacent to AQMAs. Similar to the Oxford Road analyser, both Oxford Street (29A) and Oxford Road (82) are of kerbside classification and will only be considered further in context of the baseline assessment. Monitoring of particulate matter PM_{10} and $\text{PM}_{2.5}$ is not currently undertaken in the vicinity of the Site.

8.4.9 Reference should be made to Figure 2 within Appendix 8.2 for graphical representation of the passive monitoring locations.

Background Pollutant Concentrations

8.4.10 The total concentration of a pollutant is comprised of explicit local emission sources (such as roads and industrial sources) and the background component. The background component consists of indeterminate sources which are transported into an area from further away by meteorological conditions. Background pollutant concentrations are, therefore, the ambient level of pollution that is not affected by local sources of pollution.

8.4.11 In reality, it is not usually practical to obtain a true representation of background levels in urban areas due to corruption by local sources; background levels used in assessments may contain a mixture of both sources.

8.4.12 Predictions of background pollutant concentrations on a 1km by 1km grid basis have been produced by DEFRA for the entire of the UK to assist LAs in their review and assessment of air quality. The Proposed Development Site is located across grid



square: NGR: 383500, 397500. Data for this location was downloaded from the DEFRA website. For the purpose of this assessment, background concentrations are summarised below for the verification year (2019) and the predicted development opening year (2025).

8.4.13 In order to avoid 'double-counting' of road vehicle exhaust emissions of NO₂ and Nitrogen Oxides (NO_x), the proportion of the relevant background concentrations from motorways, trunk A-roads and primary A-roads was removed in accordance with the methodology outlined in DEFRA guidance LAQM.TG(16)¹. The background concentrations following adjustment by the 'NO_x Removal Calculator' are presented below. Both PM₁₀ and PM_{2.5} background concentrations are unaffected by this process.

Table 8.6: Predicted Background Pollutant Concentrations		
Pollutant	Predicted Background Concentrations (µg/m ³)	
	2019	2025
NO _x	33.56*	30.08
NO ₂	22.52*	20.58
PM ₁₀	13.47	12.57
PM _{2.5}	8.69	8.05
*Adjusted Background Concentration		

8.4.14 As shown above, background concentrations of NO₂, PM₁₀ and PM_{2.5} are not predicted to exceed the relevant AQOs in the baseline or opening year scenarios. Comparison between the monitoring results indicates the impact that vehicle exhaust emissions from the highway network have on pollutant concentrations at roadside locations, specifically adjacent to arterial traffic routes within an AQMA.

Sensitive Receptors

8.4.15 A sensitive receptor is defined as any location that may be affected by changes in air quality as a result of a development. These have been defined for construction dust impacts in the following sections of this ES Chapter.

Construction Phase Sensitive Receptors

8.4.16 There are no National or European designated ecological receptors within 50m of the Site boundary, or within 50m from a route used by construction vehicles on the public highway (up to 500m from the Site entrance). Therefore, the risk of dust effects at a National or European designated ecological receptor site from construction impacts have not been considered further in this assessment.



8.4.17 Human receptors sensitive to potential dust impacts during, demolition, earthworks and construction were identified from a desk-top study of the area up to 350m from the Proposed Development boundary. These are summarised in Table 8.7, below.

Table 8.7: Demolition, Earthworks and Construction Dust Sensitive Receptors	
Distance from Site Boundary (m)	Approximate Number of Human Receptors
Less than 20	10 - 100
20 – 50	More than 100
50 – 100	More than 100
100 - 350	More than 100

8.4.18 Reference should be made to Figure 3 within Appendix 8.2 for graphical representation of the Demolitions, Earthworks and Construction buffer zones.

8.4.19 Receptors sensitive to potential dust impacts from trackout were identified from a desk-top study of the area up to 50m from the road network within 500m of the Site access route. These are summarised in Table 8.8. The exact construction vehicle access routes were not available for the purpose of this assessment as they will depend on sourcing of materials. This is likely to be decided by the contractor. However, it was assumed that construction traffic would access the Proposed Development via Deansgate and Chester Road roundabout, to ensure a worst case trackout assessment is undertaken.

Table 8.8: Trackout Dust Sensitive Receptors	
Distance from Site Boundary (m)	Approximate Number of Human Receptors
Less than 20	More than 100
20 – 50	More than 100

8.4.20 Reference should be made to Figure 4 within Appendix 8.2 for a graphical representation of trackout dust buffer zones.

8.4.21 A number of additional factors have been considered when determining the sensitivity of the surrounding area. These are summarised in Table 8.9.

Table 8.9: Additional Area Sensitivity Factor	
Guidance	Comment
Whether there is any history of dust generating activities in the area.	The Site is located in an area of undergoing regeneration, as such there is likely to be a history of dust generating activities within the area.
The likelihood of concurrent dust generating activity on nearby sites.	The Greater Manchester planning portal indicates there are a number of large-scale developments in close proximity to the Proposed Development site, including the Great Jackson Street Development



Table 8.9: Additional Area Sensitivity Factor	
Guidance	Comment
	Framework. Subsequently, there is potential for overlap of construction phases which could result in concurrent dust generation.
Pre-existing screening between the source and the receptors.	There is no pre-existing screening at the site to protect nearby receptors.
Conclusions drawn from analysing local meteorological data which accurately represent the area: and if relevant the season during which works will take place.	The prevailing wind is from the south and west of the proposed Site, as such receptors to the north and east of the site are most at risk from dust impact.
Conclusions drawn from local topography.	The topography around the Site is predominantly flat and as such is unlikely to influence dust dispersion.
Duration of the potential impact, as a receptor may become more sensitive over time.	The construction phase is anticipated to occur over a two-year period, as such the occurrence of long-term impacts is limited.
Any known specific receptor sensitivities which go beyond the classifications given in the document.	No specific receptors have been identified.

Operational Phase Sensitive Receptors

8.4.22 A desk top study was undertaken to identify the closest receptor locations to the application Site. This indicated residential locations within 10m of the development. There are no educational or medical facilities in immediate vicinity of the application Site, with the nearest education facility (Peacock School, Castlefield Campus) and medical facility (Chapel Medical Centre) located approximately 600m and 500m away from the Site.

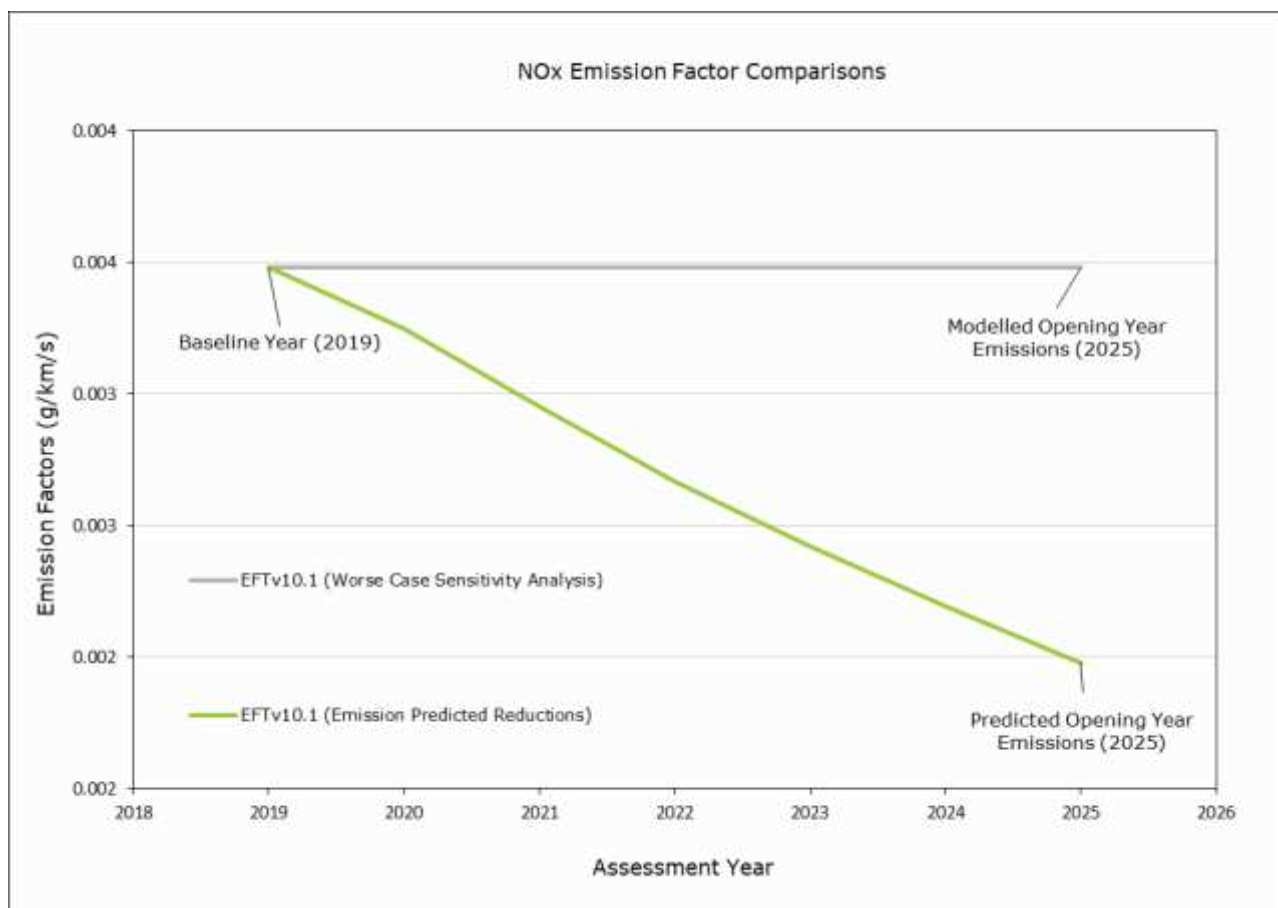
Limitations and Assumptions

8.4.23 Due to the Covid-19 pandemic, all data used within the assessment has been acquired from pre 2020 sources.

8.4.24 For the operational phase assessment, there is current uncertainty over NO₂ concentrations within the UK not reducing as previously expected due to the shifts towards a greater production and uptake of electric and hybrid vehicles. In order to provide a robust assessment, emission factors for 2019 were utilised within the dispersion model for the prediction of pollution levels for all future operational scenarios. The use of 2025 traffic data, together with 2019 emission factors is considered to provide a worst-case scenario and, therefore, a sufficient level of confidence can be placed within the predicted emission levels.

8.4.25 As illustrated by Graph 8.1, this worse case approach does not consider any future emission reductions and accounts for a 43% increase when compared to future 2025 predictions.

Graph 8.1 – NO_x Emission Factor Comparisons



* Based on 1,000 AADT, 48kph and 0% HDV%

8.4.26 Similarly, it has been assumed that background concentrations will not improve in line with current predictions and, therefore, 2019 background concentrations have been utilised for the assessment of the opening year (2025).

8.4.27 The combination of worst case emission factors and background concentrations provides further overestimation to pollutant concentrations during the operation of the Proposed Development. It is, therefore, considered that the assessment approach is robust and provides an appropriate worse case analysis of associated impacts.

8.4.28 Uncertainty in dispersion modelling predictions can be associated with a variety of factors, including:

- Data uncertainty due to errors in input data, including emission estimates, operational procedures, land use characteristics and meteorology; and



- Variability due to random or systematic error of measurements used.

8.4.29 These potential uncertainties in model results were minimised as far as practicable and worst-case inputs used in order to provide a robust assessment. This included the following:

- Choice of model - ADMS-Roads (v5.0) are commonly used atmospheric dispersion model and results have been verified through a number of studies to ensure predictions are as accurate as possible;
- Meteorological data - Modelling was undertaken using four annual meteorological data sets from the most representative meteorological station observation to the site to take account of local conditions;
- Emission rates for traffic used Emission Factor Toolkit v.10.1 and for energy plant technical data sheets for proposed plant in line with current best practice approaches as discussed were appropriate within this chapter; and
- Variability - All model inputs are as accurate as possible and worst-case conditions were considered as necessary in order to ensure a robust assessment of potential pollutant concentrations.

8.4.30 The limitations stated above are standard limitations associated with atmospheric dispersion modelling assessments. Based on the controls and assumptions detailed above it is considered that the assessment is both robust in its conclusions and completed in line with current industry standard practice.

8.5 Assessment of Effects

Design Solutions and Assumptions

8.5.1 There are no design assumptions made within the assessment, with respect to building design and layout. Pre-mitigation off-setting measures will be required during the construction phase. These measures are outlined in Table 8.15.

Assessment of Effects

8.5.2 There is the potential for air quality impacts as a result of the construction and operation of the Proposed Development in addition to the exposure of future site users to elevated annual mean NO₂ and PM concentrations. These are assessed in the following Sections. Reference should be made to Appendix 8.4 for full assessment input details.

Construction Phase Assessment



Step 1 – Screening

- 8.5.3 The undertaking of activities such as demolition, excavation, ground works, cutting, construction, concrete batching and storage of materials has the potential to result in fugitive dust emissions throughout the construction phase. Vehicle movements both on-site and on the local road network also have the potential to result in the resuspension of dust from haul road and highway surfaces.
- 8.5.4 The desk-study detailed in Section 8.4 identified a number of receptors with a chosen item. classification of sensitivity within 350m of the Site boundary and within 50m of the anticipated trackout routes. As such, a detailed assessment of potential dust impacts was required and summarised is in the sections below. Reference should be made to Appendix 8.3 for details of the relevant IAQM construction phase assessment criteria, which were utilised in conjunction with site-specific information.

Step 2A – Magnitude

- 8.5.5 The scale and nature of the works was determined to assess the magnitude of dust arising from each construction phase activity. The determination of magnitude was based upon the criteria detailed in Appendix 8.3, with the outcome of Step 2A is summarised below in Table 8.10.

Demolition

- 8.5.6 Demolition will entail the removal of the existing wall surrounding the Site. The volume of demolition is, therefore, less than 20,000m³. With this considered, the magnitude of potential dust emissions related to demolition activities is considered to be **Small**.

Earthworks

- 8.5.7 The Proposed Development Site is estimated to cover an area of approximately 650m². The magnitude of potential dust emissions related to earthwork activities is considered to be **Small**.

Construction

- 8.5.8 The proposals comprise the construction of 29 storey development. Given the scale of the Proposed Development, the total building and infrastructure volume is between 25,000m³ and 100,000m³. The magnitude of potential dust emissions related to construction activities is, therefore, considered to be **Medium**.

Trackout



- 8.5.9 It is anticipated that there will be approximately 2-3 HDVs per day on average, as such, potential air quality impacts associated with construction phase road vehicle exhaust emissions are predicted to be negligible. The surface material was not known at this stage of the project. Based on the site area, it is anticipated that the unpaved road length is likely to be less than 50m. The magnitude of potential dust emissions from trackout is, therefore, considered to be **Small**.

Table 8.10: Dust Emission Magnitude			
Magnitude of Activities			
Demolition	Earthworks	Construction	Trackout
Small	Small	Medium	Small

Step 2B – Sensitivity

- 8.5.10 The next step (Step 2B) is to determine the sensitivity of the surrounding area based on general principles, such as amenity and aesthetics, as well as human exposure sensitivity.

Dust Soiling

- 8.5.11 As shown in Tables 8.8 and 8.9, the desk top study indicated there are more than 100 sensitive receptors within 50m of the Proposed Development boundary and within 20m of the anticipated trackout routes.
- 8.5.12 Based on the assessment criteria detailed in Appendix 8.3, the sensitivity of the receiving environment to potential dust soiling impacts was considered to be **High** for all construction phase activities. This is because the Site is situated in a predominantly residential area and the people or property would reasonably be expected to be present there for extended periods of time.

Human Health

- 8.5.13 The annual mean concentration of PM₁₀ is 13.47µg/m³. Based on the receptor counts provided above, the area is considered to be of **Low** sensitivity for demolition, earthworks and construction phase activities, and **Medium** for trackout.
- 8.5.14 The sensitivity of the receiving environment to specific potential dust impacts, based on the criteria detailed in Appendix 8.3 is summarised in Table 8.11.



Table 8.11: Sensitivity of the Surrounding Area				
Potential Impact	Risk			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	High	High	High	High
Human Health	Low	Low	Low	Medium

Step 2C – Risk

8.5.15 Both the magnitude and sensitivity are combined in Step 2C to determine the level of effect without the application of best practice mitigation measures. It should be noted that the potential for impacts depends on the distance between the dust generating activity and receptor location. Risk was predicted based on a worst-case scenario of works being undertaken at the Site boundary closest to each sensitive area. Therefore, actual risk is likely to be lower than that predicted during the majority of the construction phase. A summary of the risk from each dust generating activity is provided in Table 8.12.

Table 8.12: Summary of Potential Unmitigated Dust Risk				
Potential Impact	Risk			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	Medium	Low	Medium	Low
Human Health	Negligible	Negligible	Low	Negligible

Step 3 – Risk

8.5.16 The IAQM guidance provides a number of potential mitigation measures to reduce impacts during the construction phase. These measures have been adapted for the Site as summarised in Table 8.15. It will be required to review these measures prior to the commencement of construction works and incorporated into existing strategies where practical.

Step 4 – Residual Impacts

8.5.17 Assuming that all relevant mitigation measures outlined in Table 8.15 are implemented effectively, the effect from all dust generation activities is predicted to be **Negligible** in EIA terms.

Operational Phase Assessment

Road Vehicle Exhaust Impacts

8.5.18 Any additional vehicle movements associated with the Proposed Development will generate exhaust emissions, such as NO₂, PM₁₀ and PM_{2.5} on the local and regional road networks. As there is no designated parking for future site users to utilise, it is



expected that there will be no daily trips associated with the Proposed Development. It is, therefore, not anticipated that the operational phase of the Site would result in a change of AADT flows of more than 100, produce 25 HDV movements per day or largely affect average speeds on the local road network. Subsequently, potential air quality impacts associated with operational phase road vehicle exhaust emissions are predicted to be negligible in accordance the EPUK and IAQM⁴ screening criteria.

Future Exposure

8.5.19 Annual mean NO₂ and PM₁₀ concentrations were predicted across the Proposed Development for the 2025 DS scenario at the following building heights to represent exposure in 2025 across the ground to first floor levels of the Proposed Development.

- Ground Floor Level (1.5m); and
- Mezzanine Floor Level (5.9m).

8.5.20 Reference should be made to Figures 7 and 8 within Appendix 8.2 for a graphical representation of contour plots for the predicted 2025 annual mean concentrations. Floor heights provided by the architect and subsequently provide an accurate representation of pollutant exposure across each floor level.

8.5.21 Background NO₂ and PM₁₀ levels are likely to be lower at elevated heights due to increased distance from emission sources, such as roads. Therefore, predicted concentrations at heights above ground floor level are considered to fall below the AQO with regards to future exposure and have not been assessed further.

Nitrogen Dioxide (NO₂)

8.5.22 Predicted annual mean NO₂ concentrations across the Proposed Development Site during the Do Something scenario are summarised in Table 8.13.

Table 8.13: Modelling Results – Annual Mean NO ₂ Across Sensitive Uses		
Floor Level	Predicted 2025 Annual Mean NO ₂ Concentration (µg/m ³)	
	Minimum	Maximum
Ground Floor (1.5m)	30.02	36.62
Mezzanine (5.9m)	28.56	30.67

8.5.23 The predicted concentrations shown in Table 8.13 indicate that there were no exceedances of the AQO at sensitive locations across ground floor areas of the Proposed Development and annual mean NO₂ concentrations fell well below the AQO at heights at and above the mezzanine level.



8.5.24 Critically, it should be noted that sensitive residential land use is only present at first floor and above. As shown in Table 8.13 annual mean NO₂ concentrations are not predicted to exceed the AQO at first floor and above. As such, it is considered that annual mean NO₂ levels at the Proposed Development Site should not be viewed as a constraint to development.

8.5.25 Predictions of 1-hour NO₂ concentrations were not produced as part of the dispersion modelling assessment. However, as stated in LAQM (TG16), if annual mean NO₂ concentrations are below 60µg/m³ then it is unlikely that the 1-hour AQO will be exceeded. As such, based on the results in Table 8.13, it is not predicted that on-site concentrations will exceed the 1-hour mean AQO for NO₂.

8.5.26 Based on the results of the dispersion modelling assessment, the Site will remain below the AQO designated for residential use without the implementation of mitigation techniques to protect future site users from elevated NO₂ concentrations.

Particulate Matter (PM₁₀ and PM_{2.5})

8.5.27 Predicted annual mean PM concentrations across the Proposed Development Site during the Do Something scenario are summarised in Table 8.14.

Table 8.14: Modelling Results – Annual Mean PM Across Sensitive Uses				
Floor Level	Predicted 2025 Annual Mean PM Concentration (µg/m ³)			
	PM ₁₀		PM _{2.5}	
	Minimum	Maximum	Minimum	Maximum
Ground Floor (1.5m)	14.91	16.13	9.51	10.22

8.5.28 The predicted concentrations shown in Table 8.14 indicate that there were no exceedances of the annual mean AQOs for PM₁₀ or PM_{2.5} throughout the modelling area. As such, it is considered that annual mean PM levels at the Proposed Development site should not be viewed as a constraint to development.

8.5.29 Based on the results of the dispersion modelling assessment, the site will remain below the AQO designated for the proposed end use, without the implementation of mitigation techniques to protect future site users from elevated PM concentrations.

8.6 Mitigation

8.6.1 There are a number of air quality mitigation options available to ensure suitable reductions to air quality impacts as a result of the Proposed Development. Additionally, mitigation measures are required to protect existing receptor locations as a result of fugitive dust emissions and road vehicle exhaust emissions generated by



the construction and operational phase of the Proposed Development. Measures relevant to the operational and construction of the Site are outlined in the following Sections.

Construction Phase

8.6.2 The IAQM guidance³ provides a number of potential mitigation measures to reduce potential impacts from the construction phase. The Site has been classified as a **Medium** risk with regards to the potential of dust soiling and low risk in regards to human health resulting from construction phase activities. It was identified that mitigation measures are required to reduce the associated risk to an acceptable level. Such mitigation measures have therefore been adapted for the Site, and summarised in Table 8.15. It will be required to review these measures prior to the commencement of construction works and incorporated into existing strategies.

Table 8.15: Fugitive Dust Mitigation Measures	
Issue	Control Measure
Communications	- Develop and implement a stakeholder communications plan that includes community engagement before work commences on site. - Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager. - Display the head or regional office contact information - Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Local Authority.
Site Management	- Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken. - Make the complaints log available to the local authority when asked - Record any exceptional incidents that cause dust and/or air emissions, either on- or off- site, and the action taken to resolve the situation in the log book.
Monitoring	- Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. - Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked - Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high



Table 8.15: Fugitive Dust Mitigation Measures	
Issue	Control Measure
	potential to produce dust are being carried out and during prolonged dry or windy conditions.
Preparing & Maintaining Site	• Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible. • Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site. • Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive time period • Avoid site runoff of water or mud • Keep site fencing, barriers and scaffolding clean using wet methods • Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below. • Cover, seed or fence stockpiles to prevent wind whipping
Operating Vehicle/Machinery & Sustainable Travel	• Ensure all vehicles switch off engines when stationary - no idling vehicles • Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where practicable. • Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on un-surfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate) • Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials • Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing)
Operations	• Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems. • Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate. • Use enclosed chutes and conveyors and covered skips. • Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.



Table 8.15: Fugitive Dust Mitigation Measures	
Issue	Control Measure
	Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.
Waste Management	Avoid bonfires and burning of waste materials
Demolition	- Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust). - Ensure effective water suppression is used during demolition operations. Handheld sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground. - Avoid explosive blasting, using appropriate manual or mechanical alternatives - Bag and remove any biological debris or damp down such material before demolition
Earthworks & Construction	- Avoid scabbling (roughening of concrete surfaces) if possible - Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place. - Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery. - For smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust.
Trackout	- Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use. - Avoid dry sweeping of large areas. - Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport. - Record all inspections of haul routes and any subsequent action in a site log book. - Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).



8.7 Residual Effects

Construction Phase

- 8.7.1 Assuming the relevant mitigation measures outlined in Table 8.15 are implemented, the residual effect from all dust generating activities is predicted to be **Negligible**.

Operational Phase

- 8.7.2 No Further mitigation will be required to protect future site users during the operational phase of the development. However, there are a number of best practice design measures which the development is implementing including 129m² of cycle storage. Although, the development was not predicted to not result in any air quality impacts, the implementation of the above measures are likely to have a positive residual impact on air quality.

8.8 Assessment of Cumulative Effects

Construction Phase

- 8.8.1 Assuming all developments within the area follow the industry standard mitigation outlined within the IAQM guidance³, it is unlikely that cumulative impacts from dust generation will arise.

Operational Phase

- 8.8.2 As there is no additional traffic associated with the Proposed Development any cumulative impact resulting from surrounding developments on local sensitive receptor locations is not considered to be a result of the Proposed Development
- 8.8.3 Cumulative traffic impacts from committed developments do have the potential to in increased pollutant concentrations in the vicinity of the Proposed Development and could cause future site users to be exposed poor air quality. As such, traffic from committed developments has been considered in the future year scenario and is specified in Appendix 8.4.

8.9 Summary

- 8.9.1 The Proposed Development has the potential to cause air quality impacts at sensitive locations. As such, an Air Quality ES Chapter was required to quantify pollutant levels at nearby sensitive receptors, consider its suitability for the proposed end-use and assess potential impacts as a result of the development.



- 8.9.2 During the construction phase of the Proposed Development there is the potential for air quality impacts as a result of fugitive dust emissions from the site. These were assessed in accordance with the IAQM guidance³. Assuming good practice dust control measures are implemented, the residual potential air quality impacts from dust generated by demolition, earthworks, construction and trackout activities was predicted to be **negligible**.
- 8.9.3 Dispersion modelling was undertaken to quantify annual mean NO₂ and PM₁₀ concentrations across the application and subsequently verified using GMCA local monitoring data.
- 8.9.4 The dispersion modelling results indicated that annual mean NO₂ and PM₁₀ concentrations across the application site were below the relevant AQOs. The location is, therefore, considered suitable for the proposed end-use without the implementation of protective mitigation techniques.
- 8.9.5 Potential impacts during the operational phase of the Proposed Development may occur due to road traffic exhaust emissions associated with vehicles travelling to and from the site. An assessment was, therefore, undertaken using the EPUK and IAQM screening criteria to determine the potential for vehicle trips generated by the Proposed Development to affect local air quality. As there is no associated parking with the Site, operational traffic flows are below the relevant thresholds. Based on this information, associated impacts are likely to be negligible throughout the operational phase.
- 8.9.6 Based on the assessment results, potential impacts upon air quality are not considered to be a constraint to planning consent and the Proposed Development is considered suitable for residential use.



9 TOWNSCAPE AND VISUAL IMPACT ASSESSMENT

9.1 Introduction

9.1.1 This Chapter reports the likely significant townscape and visual effects of the Proposed Development in the context of the Site and surrounding area. In particular it considers the likely significant effects on visual receptors in close proximity of the Site, and likely significant townscape effects on Manchester skyline and townscape character.

9.1.2 This Chapter (and its associated figures and appendices) is not intended to be read as a standalone assessment and reference should be made to the front end of this ES (Chapters 1 – 6), as well as the final chapter, ‘Summary of Residual and Cumulative Effects’ (Chapter 14).

9.2 Legislation, Policy and Guidance

9.2.1 The relevant legislation, policy and guidance are listed below, with details provided in Appendix 9.1.

Planning Policy

9.2.2 The applicable planning policy is summarised as follows:

- National Planning Policy Framework (February 2019);
- Manchester’s Local Development Framework, Core Strategy Development Plan Document (July 2012);
- Guide to Development in Manchester Supplementary Planning Document and Planning Guidance (April 2007); and
- Great Jackson Street Development Framework (May 2018 update, Deloitte Real Estate).

Guidance

9.2.3 The applicable guidance is summarised as follows:

- Natural England, National Landscape Character profiles;
- Local Development Framework: Strategic Level City-Wide Urban Characterisation for Core Strategy (November 2010, Design, Conservation & Project Team, Planning Service); and
- https://secure.manchester.gov.uk/info/511/conservation_areas/972/castlefield_conservation_area.



9.3 Assessment Methodology and Significance Criteria

Scope of the Assessment

- 9.3.1 The purpose of the Townscape and Visual Impact Assessment (TVIA) is to identify the effects on the townscape, or to views, resulting from the Proposed Development. Refer to the Consultation Undertaken to Date section for information regarding liaison with the Local Authority regarding the TVIA scope.
- 9.3.2 Recommendations will be made as to how the townscape character and visual amenity could be conserved or enhanced as part of any proposed development, as well as how any negative effects could be reduced or mitigated.
- 9.3.3 In visual terms, effects on the following receptors were considered:
- Road users on the main routes approaching Manchester, namely Deansgate and Chester Road;
 - Road users within the City Centre area;
 - Ramblers on the Cheshire Ring Canal Walk and The Salford Trail recreational routes;
 - Users of Hulme Park; and
 - Residents in the housing area to the south of the Mancunian Way.
- 9.3.4 In townscape terms, effects on the following receptors were considered:
- The City Centre Strategic Character Area;
 - Setting of the Conservation Area;
 - The City's Architectural style;
 - Streetscape; and
 - The skyline.

Effects Not Considered within the Scope

- 9.3.5 Townscape and visual effects outside the defined study areas will not be considered. Viewpoints representative of the identified visual receptors are all located in publicly accessible locations, effects on views not accessible to public are not considered.



Extent of the Study Area

- 9.3.6 Initial baseline investigations note that the Site is located within the dense urban fabric of Manchester city centre. To the south of the A57(M) is a fine grain of residential properties, largely low-lying and arranged in square courts. Instead, to the north of the A57(M) is a diverse and evolving townscape of larger scale buildings including tower blocks of considerable height.
- 9.3.7 The consistent urban character and limited townscape designations suggest that a study area of 1km radius from the Site boundary (see Map 01 in Appendix 9.4) should be appropriate to consider the effects that the Proposed Development might have on the surrounding townscape.
- 9.3.8 In terms of visual effects, it is envisaged that the visibility of the proposed building might encompass an envelope beyond the 1km. However, considering the existing and emerging skyline of tall buildings surrounding the Site, the intervening distance and dense urban grain it is unlikely that the Proposed Development would result in significant visual effects beyond the 1km radius.

Consultation Undertaken to Date

- 9.3.9 A Scoping Report (Appendix 2.1) was prepared and submitted to MCC in September 2020. MCC adopted a Scoping Opinion (Appendix 2.2) in November 2020. In parallel with the scoping process, the Case Officer at MCC was contacted on the 5th of November 2020 to agree details of the TVIA scope including selection of visual and townscape receptors, methodology and technical visualisations. MCC refused to engage in any pre-application discussion or advice (see email correspondence in Appendix 9.2).

Assessment Methodology

- 9.3.10 The method of baseline data collection and assessment is in accordance with current guidance and industry best practice. Full details are provided in Appendix 9.3.

Significance Criteria

- 9.3.11 Effects are assessed on townscape receptors (townscape impact assessment) and visual receptors (visual impact assessment). The significance of effect on a receptor is a function of the sensitivity of the receptor and the magnitude of change caused by the Proposed Development. In terms of the Environmental Impact Assessment Regulations, a 'Major' or 'Major/Moderate' level of significance (Table C in Appendix 9.3) is considered to be a 'Significant Effect'.



9.3.12 Generally, townscape or visual effects are considered significant if:

- They result in a major loss of or irreversible negative effect over an extensive area, and/or a valuable feature, and/or a sensitive receptor; and
- The quality of change is of such scale and nature to cause a major and unacceptable mutation of the distinctive characteristics and value of the receptor (i.e. a non-characteristic, discordant or intrusive element).

9.4 Baseline Conditions – Townscape

Designations

9.4.1 Planning designations and constraints, within 1 km of the Site, relevant to the assessment of landscape and visual effects are set out in Table 9.1 and shown on Map 04 in Appendix 9.4.

Table 9.1: Designations	
Designation/Protection	Study Area Status
National Park	None
Area of Outstanding Natural Beauty	None
Area of High Landscape Value (or similar local designation)	None
Green Belt	None
World Heritage Sites	None
Scheduled Monuments	To the north-west of the Site, remains of eastern wall of the Roman fort
Conservation Area (CA)	Castlefield CA, adjacent to the Site to the west; further north St John Street CA, Deansgate CA and St Peter Square CA.
Listed Buildings	There are several listed buildings within the Study Area, noted in close proximity to the Site are Floodgate on East Side of Knott Bridge (Grade II), the railway viaduct (Grade II) and the Former Congregational Chapel (Grade II).
Registered Parks and Garden	None
Local Nature Reserves	None
Recreations Routes and Public Rights of Way	The following recreational routes are located within the study area: The Salford Trail and The Medlock Valley Way.
Tree Preservation Orders (TPO)	N/A
Flood Risk	Flood Risk Zone 2 and 3.
Agricultural Land Classification	None



Urban Historic Evolution

9.4.2 The Heritage Statement (Appendix 10.1) provides a thorough analysis of the historical context of the Site and its surroundings; based on its findings, the following townscape aspects are of relevance to the TVIA baseline:

- Manchester's history starts with the Roman period as General Agricola built a fort known as Manicum located circa 300m north from the Site.
- The rapid city expansion started in the mid-18th century with improvements to the communication network, starting with the River Irwell made navigable in the 1730s.
- By the 19th century, Manchester had become a world-famous manufacturing centre with vast numbers of people working in the Mills of the industrial revolution. Castlefield had become a hub for the canal network which was developed to transport goods and materials around the country with a number of associated warehouses constructed in the area as well. By the mid-19th century, railways were introduced into the area with the world's first railway station constructed on Liverpool Road in 1830.
- With the decline in canal and rail transport for movement of goods, over the course of the 20th century, many of the facilities which had been associated with transport have been converted into leisure and residential units.
- Since 1807, Deansgate, then called Knot Mill, appears to contain a structure located directly on the southern boundary. Whilst there are a number of buildings in the surrounding area, many of which are located near to the canal or more towards the centre of Manchester, the area still contains numerous open spaces, probably used for agrarian purposes.
- By 1848, however, the area had undergone a great deal of development with the majority of the open spaces now holding housing. Nonetheless, open space is still visible to the north of Chester Road and around the warehouses along the canal (see Map 10a in Appendix 9.4).
- By 1896, the station at Deansgate had been opened to the north-east of the Site. To the south, the housing had been demolished for a large iron works called Knott Mill (see Ordnance Survey Map in the Heritage Statement by Bidwells) with the large structure to the east of the Site now highlighted as an "Old Warehouse". The



surrounding areas of housing appear to be more intensely developed. On the Site itself, there appears to be a new structure running on north-west to south-east.

- Very little appears to change during the early 20th century both in terms of the buildings on the Site and in terms of development in the surrounding area.
- Following the heavy bombing destruction that Manchester experienced during the Second World War, the 1951 Ordnance Survey (see Heritage Statement by Bidwells) demonstrates that many of the terraced houses in the Castlefield area were cleared creating a far more open urban grain. However, in some cases, the terraces were replaced with large warehouses and garages. As a result, the study area clearly has a very industrial character by this date.
- By the early 1990s, the former Knott Mill structures to the south of the Site, had been cleared and the area turned into car parking space. The Site continued to be used as a garage turning into a car hire garage, before the structures were all demolished by the 2010s.

9.4.3 The historic Ordnance Survey Maps sequence in Appendix 9.4 provide evidence of the urban evolution of Manchester between 1848, 1856 and 1980. In addition to the analysis provided in the Heritage Statement, it is worth reiterating the fundamental urban character that historically defines the Site's context, with a clear loss of open space between 1848 and 1856 map. Notably, the fine urban grain is partially released with the creation of Hulme Park, visible in the 1980 map, and the implementation of wide road corridors, such as Princess Road and the Mancunian Way.

Townscape Character

9.4.4 The assessment of townscape character is an integral part of the prescribed methodology for determining townscape effects which requires a full appreciation of the components that make up the quality and value of an area. Identification of the components will also inform future mitigation measures.

9.4.5 Townscape and landscape character are considered at the following levels from national to local scale:

- National setting, in relation to the National Character Area Profiles, produced by Natural England;
- Local townscape character taking into account the objectives of the Guide to Development in Manchester Supplementary Planning Document and Planning



Guidance (April 2007) and the Strategic Level City-wide Urban Characterisation for Core Strategy (November 2010);

- Castlefield Conservation Area Appraisal; and
- Local settings as observed on Site.

National Landscape Character

- 9.4.6 Typically, the National Character Area (NCA) profiles focus on landscape aspects of the countryside surrounding the existing settlements. Conversely, the Site is located in the NCA 55 - Manchester Conurbation, which, by definition, is more concerned with urban aspects of the landscape. The conurbation is the results of a number of settlements growing together including Manchester, Salford, Stockport, Sale, Ashton-under-Lyne, Swinton, Altrincham, Stretford, Prestwich, Cheadle Hulme, Denton and Droylsden. *'The area is characterised by dense urban and industrial development, commercial, financial, retail and administrative centres, commuter suburbs and housing, interspersed with a network of green infrastructure.'*
- 9.4.7 Landscape-wise, the NCA includes several river valleys that crosses the urban fabric. These landscape corridors accommodate important *'semi-natural habitats and natural greenspace - with open grassland, woodland and wetland – linking urban centres with open countryside. The industrial heritage now provides sites of wildlife interest in the urban environment. Canals that weave through the conurbation not only offer opportunities for access and recreation, but also form a network of wetland habitats.'*
- 9.4.8 The functionality of the green infrastructure network is supported by a commitment to urban greening, which includes the provision of trees to *'support urban wildlife, help keep urban environments cooler, provide green routes across the urban fabric, help manage surface water and contribute to people's health and wellbeing.'*
- 9.4.9 The strong industrial history is evident in the existing townscape character, particularly the relationship with the textile industry. The rising industrialisation followed a rapid growth of the population. This brought *'rows of terraced housing built for the workers as well as mills and industrial buildings. Red brick and sandstone buildings are prominent in the city and town centres, alongside buildings using a mix of modern materials, high-rise buildings, and landmark 19th-, 20th- and 21st-century buildings.'*



9.4.10 Notably, the urban character results in a visual landmark as the high-rise buildings of Manchester city centre are visible from the surrounding urban context. *‘There are strong visual connections with surrounding urban centres and the distant Pennine hills. The distinctive visibility of the Pennines on the skyline, as well as the high-rise buildings of Manchester city centre, contribute to the area’s orientation and sense of place.’*

9.4.11 Key characteristics of the NCA include:

- *‘Dense urban and industrial development including commercial, financial, retail and administrative centre.’*
- *‘Manchester is seen as an archetypal city of the Industrial Revolution: the canal network, mainline railways and industrial suburbs were all created as a result of it.’*
- *‘The area is centred on low hills, enclosed by the Pennine hills to the north and east, and crossed by several meandering river valleys.’*
- *‘Public parks and recreation facilities provide valuable open spaces for people within this urban environment; community gardens and allotments are places for local food growing.’*
- *‘Rivers are important features of the green infrastructure with ‘many post-industrial sites and canals provide wildlife habitats.’*
- *‘The Manchester Conurbation forms a busy transport hub, interlinked with surrounding areas by an extensive web of roads, tramways and railways – major communications corridors. Access is also provided by the canal network.’*
- *‘Unsurprisingly, this predominantly urban area has very low levels of tranquillity. The areas with the lowest tranquillity scores are found in the urban centres of Manchester, Salford and Stockport. This makes the comparatively tranquil areas all the more important for local residents, as well as acting as access routes out to the wider countryside.’*

Local Townscape Character

9.4.12 The Site is located in the City Centre area identified in the Strategic Level City-wide Urban Characterisation for Core Strategy published in November 2010. This document identifies eleven broad character areas (*‘strategic character areas’*) across the City, each having a distinctive character.



9.4.13 The City Centre Strategic Character Area is bounded on three sides by the valleys of the River Irwell, Medlock and Irk, with additional watercourses crossing the urban fabric.

9.4.14 Key characteristics of this Strategic Character Area include:

- Contrasting urban form with the pre-Victorian character of the city centre prevailing on the Roman urban history. *‘While some built form remains of both Medieval and Georgian Manchester, the core area is principally a mix of development from the Victorian period onwards with some localities often displaying a predominance of a particular age and style of built form and others having a more eclectic mix.’*
- *‘The scale of built form also varies, sometimes dramatically, but the core area is mainly one of higher, larger scale buildings.’*
- *Not many open spaces which are largely in the form of civic spaces and some small, greener and less formal public gardens.*
- *‘The Conservation Area status of much of the centre and the concentration of listed buildings reflects the urban history and quality of the urban environment.’*
- *The Mancunian Way is a distinctive and strong boundary feature to the south of the Strategic Character Area.*
- *‘...the over-riding character of the core area is a dense mix of nonindustrial commercial uses, a predominance of regionally and locally significant uses and activities (including events) and a notable number of residential apartments.’*

9.4.15 Part 2 of the Guide to Development in Manchester Supplementary Planning Document and Planning Guidance (April 2007) also provides an overview of the townscape character of the study area. Key characteristics identified in Part 2 of the SPD include:

- Infill estates are the 1970s and 1980s development of public and private estates, often with homes clustered around cul-de-sacs. *‘Whilst it is impossible to generalise about these areas, their low density and restricted levels of access for pedestrians (particularly elderly people and children), disabled people, cyclists and buses, means that they often fail to integrate into the surrounding area, do not contribute to neighbourliness, or develop a sense of place, and they often have a poor range of services.’*



- Areas of change are the focus of regeneration activities and are guided by the Strategic Regeneration Frameworks. *‘The aim within these broad areas is to extend housing choice to better provide for the needs of existing and future residents’, this includes the provision of a diverse range of uses to cater for changing demands. ‘New developments are likely to have a different appearance to the previous uses. They will be expected to provide quality in-curtilage amenity space and adequate car parking, but they should contribute to the feel and urban character of each particular area. The design of major developments should take into account any anticipated future expansion needs and provide buildings which are multi purpose and capable of being adapted over time.’*
- The water network of Manchester contributes significantly to the City’s character. *‘Waterspace can be treated as open space in its own right, as well as forming an attractive backdrop to the development. The view of the proposed development from the water and towpath should be an important consideration, as well as maximising views of the water from the development.’*
- The City Centre is identified as a unique urban area, *‘one with an important history and sense of place’.*
- *‘Vistas and viewing points contribute to the character of the City Centre and help people to find their way around it. Important views such as those to landmark buildings, those which have a unique setting, or those which mark or terminate attractive streets or spaces, should be enhanced by new developments.’*
- The SPD describes the City Centre as the *‘finest expression of a Victorian Commercial district in England, and contains an exhilarating mix of uses housed in fine individual buildings. For the most part these buildings form a continuous "street wall", firmly establishing the urban character based on the Georgian and Victorian grid pattern of streets. It is essential to maintain and develop the City's identity and individuality when considering the future development.’*
- The SPD also notes the importance of changes in angle within the City Centre streets, which results in *‘added importance to whose buildings located at road junctions. Although there are no deliberately designed grand axial views, the grid system of streets allows for long vistas in different parts of the City Centre. Some of these views have been terminated with buildings that are designed to be different from those that simply form of the "street wall"; new developments should continue to exploit this characteristic.’*



- *'... the City Centre possesses many interesting buildings and structures, which help to orientate visitors; this is as true of the rail viaducts across Castlefield as it is of buildings such as the Cathedral and the Town Hall. Views of landmark buildings need to be protected. Such buildings include those which are tall, substantial or obviously different from their neighbours (eg CIS, Midland Bank, G-MEX), those which have a unique setting (eg St Ann's Church, Friends Meeting House), and those which mark or terminate an attractive view (eg Minshull Street Law Courts, Central Reference Library).'*
- *'...the location and design of tall buildings need careful consideration as they can be viewed from longer distances and have an impact on a much wider area, both within and outside of the City Centre. The effect of tall buildings is significant in a City Centre where its conservation area status means that the relationship of buildings and spaces is as important as the quality of individual buildings.'*
- The dominant architectural styles within the City Centre are considered to be Victorian and Edwardian. These exhibit similar characteristics such as subdivision of the elevation, emphasis on corners, vertically proportioned windows, consistent building materials. A contemporary reinterpretation of these characteristics is adopted for more recent development.

Conservation Area Appraisal

- 9.4.16 The Site is not located within a Conservation Area; however, it is in close proximity to the Castlefield Conservation Area which covers the northern side of Chester Road (see Map 04 in Appendix 9.4).
- 9.4.17 Castlefield is one of the largest Conservation Areas in Manchester built around the Roman fort. Canals were built historically to provide a transport infrastructure for the industrial goods. *'Canal basins and wharves were so numerous by the time the railways were built that the only practical means of introducing railway transport was by building viaducts. The result is a multi-level environment which is unique in the world.'* (https://secure.manchester.gov.uk/info/511/conservation_areas/972/castlefield_conservation_area)
- 9.4.18 By the 1850s, the Conservation Area is characterised by distinctive zones for housing, warehouses and transport. Deansgate occupies the site of the Roman road that connected the fort with the north.



9.4.19 The Conservation Area contains a variety of building materials; however townscape continuity is provided by the widespread rugged and industrial character. *‘Stone, brick and slate are used extensively, but the most impressive building components are the massive cast-iron columns supporting the railway viaducts and, of course, the viaducts themselves, which are constructed of iron lattice beams.’* (https://secure.manchester.gov.uk/info/511/conservation_areas/972/castlefield_conservation_area)

Local Settings

9.4.20 The Site is located in the southern area of the City Centre. The Site’s immediate context appears to be actively in evolution with new buildings, many of considerable height, currently under construction. As per GLVIA3 guidance, all developments that had started on-site work as noted on the September 2020 site visit are included in the TVIA baseline. Validated proposals that have been submitted to the MCC and are awaiting decision will be considered within the assessment of cumulative effects.

9.4.21 The following projects and their contribution to the local settings are therefore considered in the TVIA baseline:

- Deansgate Square (111719/FO/2016/C1);
- 2 - 4 Chester Street (113870/FO/2016);
- Viadux (115871/FO/2017); and
- Elizabeth Tower (119806/FO/2018).

9.4.22 The following townscape characteristics have been observed through field surveys.

Existing Site and Buildings

9.4.23 The Site is currently derelict and protected with hoardings. A low brick wall defines the Site’s extent. There is no built form within the Site, which only consists of a broken, uneven asphalt surface. The access to the Site is located on Deansgate.

Site Boundaries

9.4.24 The Site is enclosed by a tall black hoardings which sit behind a low brick wall. A tall brick and concrete wall defines the north-eastern boundary. At present, there is no visual or physical permeability through the Site’s boundary except for views through the metal access gate.



Neighbouring Land Use

- 9.4.25 South of the Site, between Mancunian Way and Chester Road, the land use is predominantly residential except for a couple of schools and the university facilities. Most of the houses are arranged in a square court layout around a green area. Building density is generally high as even the detached houses are closely spaced.
- 9.4.26 Hulme Park and Saint George Park break through the residential area providing generous open green spaces for recreational use.
- 9.4.27 North of the Mancunian Way, the land use is not well defined with a mix of residential and commercial uses. While the new developments at Deansgate Square, Chester Street and along the Mancunian Way include mostly high density, residential buildings, the commercial uses increase toward the City Centre.

Buildings Scale and Design

- 9.4.28 The Site is located within the evolving townscape of Great Jackson Street Development Framework where new development is currently being built and more is planned. A common characteristic of the developments in progress within this area is a preponderance of large scale, tall buildings. The tallest existing buildings in proximity of the Site are Deansgate Square South Tower (64 floors), one of a set of four skyscrapers, and the Beetham Tower (47 floors). Also located in proximity of the Site are Elizabeth Tower (51 storeys), the Axis Towers (27 storeys) and 2-4 Chester Street (21 storeys).
- 9.4.29 Due to high visibility, these tall buildings are, or will be, landmarks guiding people movements throughout the study area. Similarly, they constitute valuable skyline features that contribute to Manchester's identity and the definition of a distinctive sense of place.
- 9.4.30 The prominent urban character of the City Centre is accentuated by the built-form scale and height, which is overwhelmingly dense, as well as the consistent construction materials. The predominant use of red bricks is contrasted by the more modern use of reflective surfaces and Corten-steel. As a result of such prominent urban character, the appreciation of the scarce greenery is compromised as trees appear secondary to the height and volume of the surrounding buildings.
- 9.4.31 On the other hand, the residential character to the area south of Mancunian Way is characterised by a completely different built form. Building height and scale is considerably reduced as a result of the different land use. Despite some architectural



continuity through the use of red brick, the contrast with the modern built form to the north of the Mancunian Way is great due to the scale and height of the buildings.

- 9.4.32 The green structure of this residential area is more robust and well-integrated within the urban grain. Street trees are more relevant and generous green open spaces provide relief to the dense built form. Although the tall buildings within the City Centre are notable background features, the perceived skyline is more open compared to the immediate Site's townscape context.

Streetscape

- 9.4.33 Similar to the two townscape aspects above, there is a clear dichotomy between the streetscapes to the south and north of Mancunian Way. To the south, the residential character allows for more street greening with tree-lined routes and borrowed views into the internal green courtyard. The two parks also provide positive street frontages. In contrast, the streetscape to the north of Mancunian Way is dominated by tall buildings framing long vistas along the road and constraining the appreciation of the open sky.
- 9.4.34 Within in the City Centre, roads are wider than in the southern residential area, resulting in a car-dominated environment despite the generous pavements. Street trees are lacking within the Site's immediate context.
- 9.4.35 The railway viaduct and water canals provide unique townscape features and contrasting street interest. The former raises movement above the eyeline, and the latter lowers it below the street level.
- 9.4.36 Mancunian Way is the only major road corridor within the Site's proximity. Despite the dominant presence of cars, it is worth noting the recently-completed roundabout at St George's Church, which includes a unique and well-established wildflower meadow that contrasts the hardness of the surrounding infrastructure while providing a biodiversity oasis within the urban context.

Vegetation Cover

- 9.4.37 There is no vegetation cover within the Site besides sparse weeds and shrubs growing through cracks in the asphalt surface and on the brick walls.
- 9.4.38 Much of the tree cover and green spaces in proximity to the Site are associated with the green infrastructure that runs along the canals. Pocket parks are located alongside the canal basins, such as the green space on the River Medlock to the north-west of the Site.



9.4.39 In contrast, to the south of Mancunian Way, where residential uses prevail, there is a stronger green framework. St George's Park and Hulme Park provides multifunctional open spaces with grass fields and mature trees. Gardens and green courts provide valuable, albeit small scale, green spaces within the residential pattern. Street trees are numerous on both main and secondary roads.

9.4.40 The green area surrounding Church of St George is rather standard, however, worth noting is the wildflower meadow at the roundabout between Mancunian Way and Chester Road, adjacent to the Church. The lush, colourful planting contrasts the highly urbanised and structural townscape.

Topography

9.4.41 The Site is located within the flat valley floor of the River Medlock (see Map 03 in Appendix 9.4). The topography of the study area reflects the river valley landscape, with the ground rising towards the Manchester City Centre, in between the watercourse of the Rochdale Canal and the River Irwell. Higher topography levels are also found to the south-east and north-west of the Site.

9.4.42 As a result of the river valley, the Site is also adjacent to a Flood Risk Zone 2, which runs along the River Medlock (see Map 09 in Appendix 9.4).

Tranquillity

9.4.43 The Site is located within Manchester City Centre and on a junction between a major road, Chester Road, and Deansgate. The central, urban, location and the influence of the vehicular traffic drastically annul any sense of tranquillity within the Site's proximity.

9.4.44 Throughout the wider Site's surroundings, within the study area, there are distinct areas of relative tranquillity associated with the green spaces. The recreational route along the canal also affords a discrete sense of tranquillity due to the sense of enclosure provided by the lowered walk and the physical separation from transport infrastructure.

9.5 Assessment of Effects – Townscape

Design Solutions and Assumptions

9.5.1 The assessment relates to the start of the operational phase, when the construction phase is complete.



Receptor Sensitivity

- 9.5.2 Townscape sensitivity is the degree to which the townscape can accommodate the Proposed Development. It is calculated by combining the ‘value’ attributed to the townscape with its ‘susceptibility’ to change.
- 9.5.3 The townscape receptors are key components of the townscape that are likely to be affected by the proposed scheme. The Landscape Institute and Institute of Environmental Management & Assessment guidance defines them as ‘*overall character and key characteristic, individual elements or features, and specific aesthetic or perceptual aspects of the landscape*’.
- 9.5.4 A value of ‘low’, ‘medium’ or ‘high’ is attributed to the sensitivity for each receptor and shown in Table 9.2 below (see Appendix 9.3 for value and susceptibility criteria).

Table 9.2: Townscape Sensitivity				
Key Townscape Receptors	Factors Influencing Value and Susceptibility of Receptors	Value	Susceptibility	Townscape Sensitivity
Character Areas/Types which may be affected by the proposals				
City Centre Strategic Character Area (SCA)	<u>Value</u> – The SCA includes the Conservation Area designation across much of the centre, with several listed buildings reinforcing the distinctive urban history and quality of the urban environment. Despite the mix of uses, the townscape character of the city centre is considered unique and the architectural materials are coherent throughout SCA. The addition of modern tall buildings provides distinctive landmarks and positively contribute to the character. <u>Susceptibility</u> – The receptor could accommodate the proposal without undue consequences on the baseline.	High	Low	Medium



Table 9.2: Townscape Sensitivity				
Key Townscape Receptors	Factors Influencing Value and Susceptibility of Receptors	Value	Susceptibility	Townscape Sensitivity
Components which may be affected by the proposals				
Setting of the Conservation Area	The Site is located on the south-east boundary of the Castlefield Conservation Area. <u>Value</u> – The receptor, comprising the context of the Conservation Area, includes a number of listed buildings that reflect the strong urban history of the study area. Much of the valuable and distinctive townscape features are included in the Conservation Area itself, leaving its setting of moderate-aesthetic appeal besides the uniqueness of modern, new tall buildings. <u>Susceptibility</u> – The receptor could accommodate the proposal without undue consequences on the baseline.	Medium	Low	Medium - Low
The City's architectural style	<u>Value</u> – Manchester city's unique architectural style is considered the '<i>finest expression of Victorian Commercial district in England</i>' (Guide to Development in Manchester SPD), it is designated by several listed buildings and Conservation Areas. The distinctive industrial building form and architectural materials provide a strong sense of place. The integration of new, modern skyscrapers elegantly complements the receptor. <u>Susceptibility</u> – The receptor could accommodate the proposal without undue consequences on the baseline.	High	Low	Medium



Table 9.2: Townscape Sensitivity				
Key Townscape Receptors	Factors Influencing Value and Susceptibility of Receptors	Value	Susceptibility	Townscape Sensitivity
Streetscape	<u>Value</u> – While elsewhere in the City centre the streetscape is characterised by a continuous built form with characteristic industrial and historical architecture, Deansgate and Chester Road, within the study area, do not afford the same material and character continuity. The aesthetic of the road frontages is mixed, worsened by the many construction sites. Cluttering of road signage and furniture is also a detriment to the value of the receptor. <u>Susceptibility</u> – The receptor can accommodate the proposed development, albeit with some consequences on the baseline.	Low	Medium	Medium-Low
The skyline	The skyline considered a townscape receptor in its own right as the Local Plan policies and associated evidence poses great importance to the effects of tall buildings on the townscape character and, indeed, the skyline. <u>Value</u> – Although not associated with a particular designation, the receptor is central to the tall building policy in the Local Plan. Furthermore, the incidence of modern structures provides distinctive landmarks which contribute to the definition of the city's unique identity. <u>Susceptibility</u> – The receptor can accommodate the proposed development, albeit with some consequences on the baseline.	High	Medium	High - Medium

Assessment of Effects (Year 1)

- 9.5.5 Table 9.3 below sets out the predicted magnitude of change and significance of effects at Year 1 on the identified townscape receptors as per Table 9.3. The assessment relates to the start of the operational phase, when the construction phase is complete.



Table 9.3: Predicted Townscape Effects Year 1				
Key Townscape Receptors	Factors Influencing Landscape Effects (Year 1 Post Construction)	Sensitivity	Magnitude of Effects	Significance Level of Townscape Effects
Character Areas/Types which may be affected by the proposals				
City Centre Strategic Character Area (SCA)	The Proposed Development would introduce a new feature to the townscape of the City centre which is coherent in scale and form with the modern evolution of the Great Jackson Development. Indeed, the Proposed Development contributes to the stepping down of the tall buildings towards the existing large residential/office blocks along the canal. The proposed construction materials and colour palette visibly refer to the prominent brick colour with a modern touch. Furthermore, the extent of change caused by the Proposed Development is relatively contained within the scale of the SCA.	Medium	Medium (Beneficial)	Moderate (Beneficial)
Components which may be affected by the proposals				
Setting of the Conservation Area	The proposal would partially alter the setting of the Conservation Area by introducing a modern, large scale architecture in place of empty land that currently detracts from the quality of the surrounding townscape and, indeed, the receptor. The scale of change is noticeable but coherent with the receptor character which include several existing and under construction tall buildings.	Medium - Low	Medium (Beneficial)	Moderate (Beneficial)



Table 9.3: Predicted Townscape Effects Year 1				
Key Townscape Receptors	Factors Influencing Landscape Effects (Year 1 Post Construction)	Sensitivity	Magnitude of Effects	Significance Level of Townscape Effects
The City's architectural style	Whilst the Proposed Development contrasts the historical industrial style of Manchester, it fits with the modern evolution of the Great Jackson Street Development. The scale of change is noticeable but relatively contained within the context of the surrounding tall buildings. Therefore, the contrast with the historical architecture is mitigated by the continuity with the local townscape character. Furthermore, the proposed construction materials and colour palette refer to the brick colour helping the integration of the Proposed Development with the distinctive Manchester industrial heritage.	Medium	Medium (Beneficial)	Moderate (Beneficial)
Streetscape	The Proposed Development introduces a substantial change to the local streetscape. The proposal would provide an increased sense of enclosure along Deansgate and Chester Road. The scale and form of the building will be prominent, albeit appropriate to the tall building cluster at the Great Jackson Street Development and the new construction on Chester Road. The Deansgate and Chester Road Site's boundary would also benefit from a decluttered and renovated streetscape.	Medium - Low	High (Beneficial)	Major (Beneficial)
The skyline	The proposal will add a new feature to the incidental structures that break through the urban skyline of Manchester. Albeit the geographical extent of the proposal is relatively contained within the Manchester skyline, the scale of change is sufficient to create a new landmark that would contribute positively to the character of the receptor.	High - Medium	Medium (Beneficial)	Moderate (Beneficial)



Summary of Townscape Effects

- 9.5.6 The TVIA methodology sets up the applied definition of ‘adverse’ or ‘beneficial’ effects (see Appendix 9.3), a challenging task that is primarily based on professional judgement.
- 9.5.7 Based on these definitions and the relevant guidance provided by the Manchester Local Plan and SPDs, it is believed that the architectural qualities of the Proposed Development have the potential to positively impact the surrounding townscape. The design approach is informed by a thorough study of the Site’s context, resulting in innovative use of materials and architectural forms, that diversify the character of Great Jackson Street Development but complement the unique historical context.
- 9.5.8 While the aesthetic appeal of the proposal is subjective, the design intent is substantially coherent with the surrounding modern townscape and would result in a no loss of valuable features. The Proposed Development would result in the regeneration of displeasing and degraded land with consequential streetscape improvements.

Assessment of Effects (Year 15)

- 9.5.9 The Proposed Development does not include landscape or other features that will evolve beyond the completion of the construction phase. Although the contextual townscape is likely to change and therefore evolve the local character, this will not result in a change of the identified significance of townscape effects based on this TVIA baseline.

Assessment of Effects During Construction

- 9.5.10 It is anticipated the construction phase would last approximately three years. The Construction Method Statement (CMS) submitted with the application sets out the key elements of the construction programme, as summarised in Chapter 5 of the ES.
- 9.5.11 For the purposes of the TVIA, it is noted specifically that one crane will be erected, and the Site will be enclosed with solid hoarding. Also, the building process will include a number of activities that would impact the townscape baseline, such as demolition of existing boundary wall, construction vehicle movement and temporary diversion of pedestrian and cycle routes.
- 9.5.12 Based on the CMS information, it is likely that the construction activities would result in a temporary increase in noise and activity which could detract from the surrounding



townscape including the nearby Conservation Area. The effects on the identified receptors could be notably more intense than at operational phase.

- 9.5.13 The construction works could cause Major Adverse effects on the receptors identified. However, the effects would be temporary (3 years) and of limited duration. The CMS includes a list of control measures that will be put in place to mitigate air quality, pollution and noise effects. No residual significant effects is expected as a result of the CMS mitigation measurements and at conclusion of the construction phase.

9.6 Baseline Conditions – Visual

Potential Visual Receptors

- 9.6.1 The Site is located within Manchester City Centre, a highly-urbanised area in proximity of the Rochdale Canal and Bridgewater Canal. It was noted during the initial Site visit (September 2020) that the numerous tall buildings provide are substantial visual constraint which limits the field of view to a close range. Consequentially, views of the Site appear to be limited to its immediate context. Nevertheless, it is considered that the Proposed Development includes tall buildings that are likely to be visible from a wider context.
- 9.6.2 It is therefore considered that the following groups of visual receptors are likely to experience some effects from the proposal:
- Road users on the main routes approaching Manchester, namely Deansgate and Chester Road;
 - Road users within the City Centre area;
 - Ramblers on the Cheshire Ring Canal Walk and The Salford Trail recreational routes;
 - Users of Hulme Park; and
 - Residents in the housing area to the south of the Mancunian Way.

Representative Viewpoints

- 9.6.3 13 viewpoints were selected to represent typical views from potential receptors, at varying distances and orientations from the Site. The viewpoints are mostly located within 1 km of the Site (see viewpoint locations map in Appendix 9.5).
- 9.6.4 The viewpoints used in the assessment are:



Viewpoint 1: Deansgate – the Site

- 9.6.5 This viewpoint represents views experienced by road users, including pedestrians and cyclists on a dedicated route, moving northwards on Chester Road at the junction with Deansgate. The view is looking northwards at the Site, which is visible at the centre. Behind the Site are some medium scale residential buildings in red bricks and to the right is one of the Deansgate Square towers. To the left of Chester Road is 1-4 Chester Street building, currently under construction.
- 9.6.6 The view along Chester road terminates with Beetham Tower below which is the railway viaduct. To the right of the viaduct is the tower of the Grade II listed Former Congregational Chapel, which appears rather small within this urban context.

Viewpoint 2: Albion Street

- 9.6.7 This viewpoint represents views experienced by road users on Albion Street and pedestrians within the dedicated public open space to the south of Sainsbury's. The view is looking west towards the Site, which is located in the background behind the existing buildings. The view consists of predominantly residential blocks of medium-scale along Albion Street and City Road East. Deansgate Square towers are a prominent feature in the skyline, which still retains a partial sense of openness.

Viewpoint 3: Medlock Valley Way – Whitworth Street West

- 9.6.8 This viewpoint represents views of road users and ramblers on a recreational route along the Rochdale Canal. The view is looking south-west towards the Site, which is located behind the existing brick buildings at the centre of the view.

The train line is visible to the left of the view overlooked by the Deansgate Square's towers. Above Whitworth Street West, views of the sky are kept open by the canal and railway line breaking through the urban fabric. Street trees are present on the northern side of the road but are not prominent features.

Viewpoint 4: Deansgate – The John Rylands Library

- 9.6.9 This viewpoint represents views of road users travelling southwards on Deansgate, as well as pedestrians on dedicated pavements on both sides of the road. The view is looking south towards the Site, which is located at the end of this vista but largely screened by the intervening railway viaduct. The view is framed on both sides by existing buildings of medium-scale compared to Deansgate Square towers and Beetham Tower visible in the background. There is limited view of the sky.



9.6.10 The streetscape is highly urbanised with the road being a prominent feature and a lack of street trees. Building aesthetic is mixed with older built form sitting along modern architecture.

Viewpoint 5: Pace Garden

9.6.11 This viewpoint represents views of pedestrians at Peace Garden, a public open space and transport hub within the City Centre. The view is looking south-west towards the Site, which is screened by the intervening built form. The Midland Hotel (Grade II* listed) is a prominent feature of the view overlooking the canopies of the square's trees. The vernacular red brick contrasts with the surrounding modern architectural materials of the taller buildings. The Central Public Library (Grade II* listed) is partially hidden by the trees. Despite the building's enclosure of the square, there is a discrete sense of openness with a rather large view of the sky, broken only by Beetham Tower.

9.6.12 At ground level, the view is rather chaotic with clustering of transport infrastructure and road signages. Some order is provided by the trees' canopies mitigating the visual intrusion of the tram power cables.

Viewpoint 6: Great Bridgewater Street

9.6.13 This viewpoint represents views of road users at Great Bridge Water Street, including pedestrians on a dedicated pavement. The view is looking south-west towards the Site, which is located behind the existing buildings. The view of the sky is relatively open with Deansgate Square and the Axis Tower skyscrapers breaking the skyline. This modern architecture contrasts the lower level vernacular buildings in red brick which are visible in the foreground.

9.6.14 Street trees, some of which planted as part of the Manchester City of Tree movement, provide a pocket of landscape within this urban view, filtering views of the surrounding buildings. Consequently, the road infrastructure does not dominate the view.

Viewpoint 7: Rochdale Canal Tow

9.6.15 This viewpoint represents views of road users on the Bridgewater Viaduct, including ramblers on the recreational route. The view is looking south at the Site, which is visible in the background below the railway viaduct.

9.6.16 The view is dominated by the transport infrastructure and the clutter of road signs and furniture. The tower of Former Congregational Chapel (Grade II listed) is visible amongst this urban chaos. Little of the open sky is visible as, in addition to the



overwhelming urban features, Deansgate Square tower and the 2-4 Chester Street building frame the vista.

Viewpoint 8: Cheshire Ring Canal Walk

9.6.17 This viewpoint represents views of ramblers on a recreational route along the Bridgewater Canal. The view is looking south-east towards the Site, which is located behind the intervening buildings. The appreciation of the open sky is limited as the buildings' scale and Deansgate Square towers dominate the skyline. The view results largely enclosed by the built form.

9.6.18 The modern architecture of the skyscrapers contrasts the lower level vernacular buildings in red brick which are visible in the foreground.

9.6.19 Few trees break the built form and filter views of the buildings.

Viewpoint 9: Chester Road

9.6.20 This viewpoint represents views of road users on a main access to Manchester, including pedestrians and cyclists on dedicated paths. The view is looking north-east towards the Site, which is visible at the front of the existing, red brick, residential building. The view is dominated by the overwhelming presence of tall buildings, namely: Beetham Tower, The Axis Tower, Elizabeth Tower and 2-4 Chester Street.

9.6.21 Despite the few trees and glimpses of green open areas, including the St George's Church grassed area, the view is dominated by the urban scene. Nevertheless, the skyline is relatively open and punctuated by the taller buildings.

Viewpoint 10: Hulme Park

9.6.22 This viewpoint represents views of users of a public open space which includes a range of recreational opportunities. The view is looking north towards the Site, which is located behind the intervening vegetation and buildings.

9.6.23 The view appears critically divided into two layers. In the foreground, the lower layer is largely green with mature trees on the park edge and grassed recreational ground. Glimpses of the residential area are visible to the left of the view, through the existing trees. The higher level is dominated by the skyscrapers, namely Deansgate Square towers and the Elizabeth Tower (visibly under construction), rising above the tree canopies.

9.6.24 The skyline is therefore defined by this dichotomy, with a consistent lower layer and the upper layer rather open, occasionally broken by skyscrapers.



Viewpoint 11: Bonsall Street

- 9.6.25 This viewpoint represents views of pedestrians and cyclists crossing Birchall Way on a dedicated bridge. The view is looking north-west towards the Site, which is located behind the intervening vegetation and buildings. In the foreground of the view is the structure of the adjacent Stretford Road bridge. The canopies of the mature, street trees along Princess Road rises over the bridge level and filter views of the buildings.
- 9.6.26 The skyline is punctuated with the skyscrapers at Deansgate Square, the Elizabeth Tower and Beetham Tower. However, views of the sky retain a discrete sense of openness.

Viewpoint 12: The Salford Trail

- 9.6.27 This viewpoint represents views ramblers on the recreational route along the Manchester Ship Canal. The view is looking south-east towards the Site, which is screened by the intervening buildings.
- 9.6.28 In the foreground of the view are the canal and its retaining walls. Despite the largely urban character of the view, there is a discreet amount of greenery, provided by the wild vegetation above the canal wall and trees along the canal at New Elm Road. Above the green layer emerge the residential buildings under construction at New Elm Road, Deansgate Square towers and the Elizabeth Tower. The skyline is punctuated by the tall buildings and defined by the lower urban layer, but retains a considerable sense of openness.

9.7 Assessment of Effects – Visual

Design Solutions and Assumptions

- 9.7.1 The Year 1 assessment is based on the first year after the construction works are complete. A full assessment of each viewpoint is presented in Appendix 9.5.

Zone of Theoretical Visibility Mapping

- 9.7.2 To inform the potential visual effects of the Proposed Development, computer-generated Zone of Theoretical Visibility (ZTV) mapping was undertaken. This identifies the areas from which the development would be theoretically visible, see drawings UDS6630-A3-0101 Appendix 9.5.
- 9.7.3 The ZTVs were produced using 'OS Terrain 5' data at 5m resolution and assumes the maximum proposed building heights of 102.3 to 122.475m AOD and a viewer height of 2m. It is presented on an Ordnance Survey base, and the findings are verified by



Site observations. The heights existing buildings and structures within the study area are taken from GoogleEarth Digital Surface Model (2020) and from OS open source mapping data. Visual barrier less than 4m high has not been modelled. Seven developments of considerable height within 500m from the Site have been modelled at completed height.

- 9.7.4 It should be noted that the ZTV identified areas where the proposal would be theoretically visible. Due to the frequency of low-level structure or planting, the actual visibility is likely to be significantly less extensive than the drawings indicate.

Viewpoints Assessment

- 9.7.5 The visual assessment considers the effects on visual receptors which are currently afforded views towards the Site and, therefore, may be affected by the Proposed Development. The assessment was based on:

- Site observations made during the Site visits; and
- Zone of Theoretical Visibility (ZTV) analysis.

- 9.7.6 An assessment of visual effects, undertaken from the representative viewpoints, is provided in Appendix 9.5. The viewpoint locations are shown on the ZTV map and drawings UDS60630-A3-0101. For each viewpoint, the following information` is provided:

- A representative photograph;
- A description of the existing view;
- The type and sensitivity of the viewer are assessed using Appendix 9.3, Table A;
- Predicted changes to the view are described and the magnitude of the effect (at Year 1) is quantified using the criteria given in Appendix 9.3 Table B; and
- The significance of the effect is determined by correlating the sensitivity of the visual receptor with the magnitude of effect, using Appendix 9.3, Table C.

- 9.7.7 Technical visualisations of the Proposed Development were produced for all the viewpoints (see Appendix 9.6). These informed the assessment of the magnitude of the potential visual effects.

- 9.7.8 The assessment considers the visual effects at Year 1 and Year 15. The photographs for technical visualisations were undertaken in winter with the trees not in leaf, therefore representing the ‘worst-case’ situation.



Visual Effects (Year 1)

9.7.9 The Year 1 assessment is based on the first year after the construction works are complete. A full assessment of each viewpoint is presented in Appendix 9.5.

9.7.10 Table 9.4 provides a summary of the significance levels of visual effects for each viewpoint.

Table 9.4: Significance of Visual Effects - Year 1			
viewpoint	receptor sensitivity	Magnitude of change	Significance LEVEL of visual effects
1 – Deansgate – The Site	High - Medium	High (Beneficial)	Major (Beneficial)
2 – Albion Street	Medium	Low (Neutral)	Minor (Neutral)
3 – Medlock Valley Way – Whitworth Street West	Medium - High	Low (Neutral)	Moderate (Neutral)
4 – Deansgate – The John Ryland Library	High - Medium	Low (Neutral)	Moderate (Neutral)
5 – Pace Garden	High	None	None
6 – Great Bridgewater Street	High	None	None
7 – Rochdale Canal Tow	High	Medium (Adverse)	Major – Moderate (Adverse)
8 – Cheshire Ring Canal Walk	High	Low (Beneficial)	Moderate (Beneficial)
9 – Chester Road	High - Medium	Low (Beneficial)	Moderate (Beneficial)
10 – Hulme Park	Medium - High	Low (Neutral)	Moderate (Neutral)
11 – Bonsal Street	Medium - High	None	None
12 – The Salford Trail	High	Medium (Beneficial)	Moderate – Major (Beneficial)

Visual Effects (Year 15)

9.7.11 The Proposed Development does not include landscape or other features that would evolve following completion of the construction phase. Therefore, the significance of visual effects at Year 1 would remain unchanged at Year 15.

Visual Effects During Construction

9.7.12 For the reasons set out in the townscape effects during construction, the visual effects during the construction phase are likely to be Major Adverse due to high visibility of the crane and disruption of the streetscape. However, the resulting significant effects would be temporary and short term (less than 5 years).

9.8 Mitigation

9.8.1 The TVIA, which was undertaken in accordance with current best practice guidance, has identified residual significant adverse effects on the following visual receptors:



- Road users travelling southwards on Deansgate; and
- Ramblers on the Cheshire Ring Canal Walk in proximity of the Former Congregational Chapel.

9.8.2 As identified in the Visual Assessment section, the proposed scheme would not markedly reduce the significant adverse visual effects. No mitigation measurements are proposed.

9.9 Residual Effects

9.9.1 The significance of residual effects will equate the one identified at year 1, and indeed year 15, for both townscape and visual effects.

9.10 Assessment of Cumulative Effects

9.10.1 The EIA scoping request included a list of projects to be considered for the assessment of cumulative effects. The list included projects that are currently under construction and have therefore been considered in the relevant townscape and visual baseline as required by the followed guidance and methodology. The assessment of cumulative effects considers the remaining developments of the list that are yet to be constructed but are currently validated through the planning process, namely:

- 125804/FO/2019 – 325 – 327 Deansgate;
- 126668/FO/2020 – Land Bound by Silvercroft Street, Crown Street and The Mancunian Way;
- 116850/FO/2017;
- 121462/FO/2018 – Plot 9A First Street and 125833/FO/2019 – Land bounded by River Street to the east, Hulme Street to the south and Medlock Street to the west;
- 111003/FO/2016/C1 – 10-12 Whitworth Street West; and
- 123261/FO/2019 – Land bounded by Arundel Street. Ellesmere Street, the A57 (M) Inner Ring Road (Mancunian Way) and Worsley Street.

9.10.2 In terms of townscape effects, the study area of 1km radius surrounding the Site encompassed the Great Jackson Street Development Framework area, where a vision for modern, tall development is planned and being implemented, the Conservation Areas, Manchester City centre and residential suburb to the south of the Mancunian Way.



9.10.3 Overall, this study area included sensitive townscape receptors, valued townscape character and the new Great Jackson Street Development Framework development. These portray the contrasts within the Site's townscape context identified in the TVIA baseline between the historical character of the Conservation Area and the modern evolution around Deansgate.

9.10.4 Within this cumulative baseline, the proposal will neither change nor transform the existing townscape character of the study area when assessed cumulatively with the above projects as it will not tip the balance towards a new townscape character. The study area identified for the cumulative townscape effects is already characterised by innovative, contemporary architecture represented by modern built form. The scale and massing introduced by Great Jackson Street Development Framework implemented a high-density townscape at the periphery of Castlefield Conservation Area. Consequently, it is considered that the proposal will not add to or combine with the above list of developments to create a significant cumulative effect. The assessment of cumulative townscape effects is, therefore, excluded.

9.10.5 On the other hand, in terms of cumulative visual effects within the study area, the projects listed above are likely to be viewed in the context of the Proposed Development and therefore cumulatively augment the visual effects on the skyline of Manchester and identified visual receptors. Therefore, further assessment of the significance of effects is carried out for the viewpoints where the Proposed Development and cumulative projects are visible, these are (refer to technical visualisations in Appendix 9.7):

- Viewpoint 1 - Deansgate – The Site;
- Viewpoint 2 – Albion Street;
- Viewpoint 3 - Medlock Valley Way – Whitworth Street West;
- Viewpoint 4 - Deansgate – The John Ryland Library;
- Viewpoint 7 - Rochdale Canal Tow;
- Viewpoint 9 – Chester Road;
- Viewpoint 10 – Hulme Park; and
- Viewpoint 12- The Salford Trail.

9.10.6 Viewpoint 8 has been excluded to the cumulative assessment because the cumulative projects will largely be screened by intervening built form. Although a glimpse of the



116850/FO/2017 is visible, this is not considered a substantial change to the baseline and, therefore, it will not result in a significant visual effect cumulatively with the Proposed Development.

Cumulative Visual Baseline

9.10.7 The starting point of the assessment of cumulative effects is the same as that identify in the Visual Baseline section. Although the cumulative assessment focuses on a reduce number of viewpoints, the receptors likely to be significantly affected are still the same:

- Road users on the main routes approaching Manchester, namely Deansgate and Chester Road;
- Road users within the City Centre area;
- Ramblers on the Cheshire Ring Canal Walk and The Salford Trail recreational routes;
- Users of Hulme Park; and
- Residents in the housing area to the south of the Mancunian Way.

9.10.8 There are no changes to the visual baseline describe for each of the considered viewpoints, refer to Visual Baseline section fore relevant descriptions.

Assessment of Cumulative Visual Effects

9.10.9 The assessment of cumulative visual effects is guided by the same principles applied to the assessment of visual effects in the TVIA, therefore following methodology in Appendix 9.3. Sensitivity of the receptor remains as assessed in the TVIA, but the magnitude of change is re-considered to include the combined effects with the cumulative projects.

9.10.10 The assessment of cumulative visual effects will identify combined effects resulting from the effects of the Proposed Development and the other considered sites. Higher level of significance relates to the following scenarios:

- Developments that are in close proximity to the Site and would be clearly visible together in the selected viewpoints;
- Developments that are highly inter-visible even though they are at some distance between each other and from the viewpoint's location; viewed individually they



might not be particularly significant but the overall combined visual effects on a viewer at a particular viewpoint may be more significant.

9.10.11 Cumulative visual effects are illustrated for the selected viewpoints in the technical visualisations in Appendix 9.6. Table 9.5 details the assessment of significance level of the cumulative visual effects on the identified viewpoints and Year 1.

Table 9.5: Cumulative Visual Effects				
Visual Receptors	Factors Influencing Visual Effects (Year 1 Post Construction)	Sensitivity	Magnitude of Effects	Significance Level of Cumulative Visual Effects
Viewpoint 1	Two of the identified cumulative projects are visible within the view, 111003/FO/2016/C1 and 125804/FO/2019. The former, located to the right of the view, raises the skyline slightly, reducing the openness of the visible sky. The latter partially screens Beetham Tower becoming the new focal point of the view along Deansgate, behind the railway viaduct. Although the proposals are in close proximity of the Site, the cumulative visual effect is not greater than the effect of the Proposed Development as the scale of this within this view is prominent and prevails over the additional projects. Furthermore, high quality architecture enhances the townscape quality of this gateway location.	High - Medium	High (Beneficial)	Major (Beneficial)
Viewpoint 2	Two of the identified cumulative projects are visible in the view, 126668/FO/2020 and 116850/FO/2017, while 121462/FO/2018 will be screened by intervening built form. 126668/FO/2020 is located behind Deansgate Square. The new Elizabeth Tower will be screened by 116850/FO/2017. The Proposed Development and contextual planning applications reinforce the urban character of the view adding to the cluster of tall buildings within Great Jackson Street Framework area. However, the additional planning applications are largely screened by the intervening built form, therefore the cumulative effects are not greater than the effects of the sole Proposed Development.	Medium	Low (Neutral)	Minor (Neutral)



Table 9.5: Cumulative Visual Effects				
Visual Receptors	Factors Influencing Visual Effects (Year 1 Post Construction)	Sensitivity	Magnitude of Effects	Significance Level of Cumulative Visual Effects
Viewpoint 3	The proposed development for 111003/FO/2016/C1 is visible in the foreground of the view; proposal 123261/FO/2019 is, instead, screened by the intervening built form. The proposal for 111003/FO/2016/C1 will substantially change the existing baseline. The proposed development will obscure views of Deansgate Square towers and of the railway viaduct, a distinctive heritage feature. Openness of the view will be compromised with an increased sense of enclosure. It should be noted that the contribution to cumulative effects of the Proposed Development is minimal, as its scale is recessive to the cumulative context.	Medium - High	Major (Adverse)	Major (Adverse)
Viewpoint 4	Based on the viewpoint in Appendix 9.7, most of the projects identified for the cumulative assessment are not visible within the view, apart from the proposal at 126668/FO/2020. This is visible in the background behind the listed building on Deansgate. The currently long vista accentuated by the perspective effects of the built form along the road will be compromised by the 126668/FO/2020 and Proposed Development, which introduces a tall element terminating the view. However, the cumulative effect is not greater than that of the solely Proposed Development.	High - Medium	Low (Neutral)	Moderate (Neutral)
Viewpoint 7	A glimpse of the 116850/FO/2017 is visible to the left of Deansgate Square; while 126668/FO/2020 is largely screened by the Proposed Development. The cumulative effects result in the same loss of openness and a reinforced modern architectural character of the Proposed Development experienced on its own.	High	Medium (Adverse)	Major - Moderate (Adverse)



Table 9.5: Cumulative Visual Effects				
Visual Receptors	Factors Influencing Visual Effects (Year 1 Post Construction)	Sensitivity	Magnitude of Effects	Significance Level of Cumulative Visual Effects
Viewpoint 9	Proposal for 126668/FO/2020 and a glimpse of 125804/FO/2019 are visible at this viewpoint, with the other cumulative projects screened by intervening built form. The cumulative effects result in an increase urban character with the additional taller building in the foreground reinforcing the visual presence of Elizabeth Tower. Nevertheless, the view retains a good sense of openness and the Proposed Development does not contribute greatly to the cumulative effects, rather it performs the same grounding and gateway functions identified in Appendix 9.5.	High - Medium	Medium (Neutral)	Moderate (Neutral)
Viewpoint 10	Based on the view proposed in the technical visualisations in Appendix 9.7, three of the cumulative projects are visible at this location. 126668/FO/2020 will introduce a prominent tall cluster that obscures views of Elizabeth Tower. 116850/FO/2017, at the centre of the view, screens views of one of the towers at Deansgate Square and of the Proposed Development, which is hardly visible in the cumulative context. 111003/FO/2016/C1 is visible in the background to the right of the Deansgate Square, which partially screens it. The cumulative effects results in an increased sense of urbanization with a busier skyline. The sense of openness associated with the clear sky is partially compromised by the additional tall buildings. However, it should be noted that the contribution of the Proposed Development to the cumulative effects is virtually none.	High - Medium	Major (Adverse)	Major (Adverse)



Table 9.5: Cumulative Visual Effects				
Visual Receptors	Factors Influencing Visual Effects (Year 1 Post Construction)	Sensitivity	Magnitude of Effects	Significance Level of Cumulative Visual Effects
Viewpoint 12	Three of the cumulative projects are visible within the viewpoint. 12666/FO/2020 is partially visible behind Elizabeth Tower; the top of the taller tower of 116850/FO/2017 is visible in front of Deansgate Square; 111003/FO/2016/C1 appears detached from the Deansgate cluster to the left of the view. The cumulative effects result in a discreet increase of urban character with a reinforcement of the Deansgate cluster. 111003/FO/2016/C1 extends the skyline of tall buildings across the view. Although the high-quality character of the Proposed Development is acknowledged, not enough elements are known of the other proposals to define their impact as beneficial.	High	Medium (Neutral)	Moderate – Major (Neutral)

Cumulative Visual Effects at Year 15

9.10.12 At Year 15, the existing Manchester's tree cover would have matured further; however, given the current maturity of the majority of this planting there will be a fractional increase of canopies and tree height which would not provide sufficient mitigation to reduce the significance of cumulative effects at Year 15. Therefore, the significance of visual effects at Year 1 would remain unchanged at Year 15.

Cumulative Visual Effects During Construction

9.10.13 Similar to the effects during construction identified in the Visual Assessment, the visual effects during the construction phase are likely to be Major Adverse due to high visibility of the crane and disruption of the streetscape. However, the resulting significant effects would be, by definition, temporary, short term (less than 5 years) and potentially staggered through time based on the construction programme of each additional proposal.



9.11 Summary

Summary of Townscape Effects

- 9.11.1 None of the identified receptors results in residual significant adverse effects. Four of the receptors results in Moderate Beneficial townscape effects and one Major Beneficial.
- 9.11.2 The townscape assessment acknowledges that the Proposed Development does introduce a new feature within an area of change, the Great Jackson Street Development Framework, which is already characterised by modern, tall buildings. The scale of the Proposed Development is appropriate to the contextual townscape, including that of the Conservation Area as it grounds the new tall buildings with the lower-lying context of historical architecture.
- 9.11.3 Critical for the beneficial effects is a sensible materials palette. Corten-steel provides a durable material, that matches the colour variation of the typical and widely use Manchester red brick while creating a distinctive feature in the Framework area. Consequently, the Proposed Development will reinforce the local sense of place providing a distinctive features aiding pedestrians' orientation in the city.
- 9.11.4 Finally, it is believed that the Proposed Development will result in significant beneficial effects on the local streetscape. Ultimately the Proposed Development will replace a non-descript, negative space that depreciates the local streetscape. The disused car park will be replaced with an innovative and high-quality architecture that responds appropriately to the surrounding context and improves the street experience at a considerable gateway into Manchester City. In fact, key consideration has been given to the articulation of the corner of the Proposed Development facing south-west to make it stand out.

Summary of Visual Effects

- 9.11.5 The assessment of the viewpoints results in various level of significance of visual effects, including some beneficial improvements of the visual amenity. It is considered that the visual impact on receptors represented by Viewpoint 7 will be adverse and significant. Albeit not significant in EIA terms, it is also noted that a moderate adverse effect is identified for receptors represented by Viewpoint 4.
- 9.11.6 In both cases the proposed development contrasts with the existing historic context. With regard to receptors at Rochdale Canal Tow (Viewpoint 7), this contrast is particularly evident, with the proposed modern architecture competing with the



heritage assets and therefore detracting from distinctive features of the view. In this instance, the high quality of the proposed architecture is not considered sufficient to compensate the loss of appreciation of a valuable historic townscape.

9.11.7 Viewpoints 1 results in a significant beneficial effect and Viewpoint 9 in moderate beneficial effect. In both cases, the proposed development is viewed at a prominent gateway location into Manchester city. In this instance, high quality architecture, achieved with innovative and durable materials responding to the surrounding modern and historic townscape, and appropriate scale within the contextual built form, result in the enhancement of a currently derelict Site. Therefore, the proposal enhances the experience of visual receptors entering Manchester. Similarly, the appropriateness and high aesthetic qualities of the proposal results in beneficial effects at viewpoints 8 and 12.

9.11.8 Finally, it is noted that in three viewpoints the effects are considered of minor or moderate significance with neutral effects. It is believed that the Site's contextual townscape, characterised by the coexistence of modern elegant buildings and heritage features, generally affords a high visual value. The proposal represents a good example of modern architecture that would fit within this visual context without altering the current perceptions of the valued visual amenity.

Summary of Cumulative Effects

9.11.9 A key consideration in undertaking the assessment of cumulative visual effects was the impact of the Proposed Development together with the identified future developments on the Manchester skyline. While it is acknowledged Manchester's planning framework openness towards innovative and tall buildings to create a distinct sense of place, the cumulative visual impact of proposed development must respect the existing aesthetic value of the city and its historic heritage.

9.11.10 The assessment of cumulative effects resulted in three significant adverse visual effects (Viewpoints 3, 7 and 10). However, there is a critical difference between the three viewpoints. The significant adverse effects identified for Viewpoint 3 and 10 is largely associated with the additional proposals, while in Viewpoint 7 the visual effects are still largely dependent on the impact that the Proposed Development has on the heritage assets and streetscape.

9.11.11 The significant adverse effects will impact receptors on the Cheshire Ring Canal Walk where the increased urban character of modern architecture will compete with



existing heritage features that defined the value of the views, causing the accidental visual loss of a distinctive feature (i.e. the railway viaduct).

- 9.11.12 Users of Hulme Park, a public space characterised by an open green area edged by mature trees, also experienced a significant adverse effect due to the densified skyline of tall buildings which will detriment the intrinsic open nature of the view.
- 9.11.13 Overall, it is noted that there would be some significant cumulative effects in visual terms. Although the majority of the identified viewpoints will experience a neutral or beneficial effects, as the proposed skyline expansion appears appropriate to the existing context and respectful of the historical value of the identified views.

9.12 Summary

- 9.12.1 The proposal involves the construction of a prominent development within Manchester city. The Proposed Development consists of a 28 storeys (87.855m) student accommodation within the Great Jackson Street Framework area.
- 9.12.2 The Site context is visibly in evolution with several active building sites that will deliver tall buildings within and adjacent to the Framework area. This already includes the Deansgate Square towers, an example of modern, distinctive architecture that strengthen the local sense of place. Deansgate Square is the latest contribution to the skyline of Manchester, which includes a variety of tall buildings scattered within and around the central area. Contrasting with the emerging modern townscape character is the strong historic heritage of the city and its Conservation Areas with a prevailing industrial Victorian style.
- 9.12.3 Following a detailed analysis of the Site's context and identification of appropriate study areas, the TVIA identified a range of critical townscape and visual receptors to further investigate the likelihood of significant effects.
- 9.12.4 In terms of townscape impact, no significant adverse effects have been identified. The Proposed Development appears appropriate to its diverse context. While it includes traits of innovative and modern architecture, it also complements the contextual historical heritage. Crucial is the careful selection of the cladding material, Corten-steel, which matches the prevailing brick colour aiding the insertion the proposal within the industrial architecture.
- 9.12.5 It is also noted that the Proposed Development results in the revitalisation of a derelict site. This results in a positive impact on the local streetscape and the improvement to the setting of local heritage assets.



- 9.12.6 The visual impact also benefits greatly from the proposed high-quality architecture, which will enhance a strategic gateway into Manchester and improve the aesthetic of the existing Site. The scale and height of the Proposed Development grounds the existing tall buildings within the context of medium scale, historical and residential buildings. However, a significant adverse effect is noted for receptors on at the Rochdale Canal Tow, adjacent to Deansgate. In this instance the increased modern character of the visual amenity will compete with valuable heritage assets which will be loss against the modern, large scale architecture.
- 9.12.7 Finally, the assessment of visual cumulative effects also identified some residual significant effects. Within the context of the identified proposals that affords planning validation or approval, generally the Proposed Development does not cause a significant adverse effect on the visual amenity due to its high-quality architecture and appropriate volume. However, the adverse effects identified on the receptors at the Rochdale Canal Tow path will not change within the cumulative context. Also, the densification of the skyline with tall buildings results in a critical loss of sense of openness for receptors at Hulme Park and loss of heritage visual amenity on Whitworth Street West. Notably, in these last two instances, the contribution of the Proposed Development to the significant effect is virtually none as the scale and height of the additional proposals cause most of the visual impact.
- 9.12.8 In conclusion, the Proposed Development will result in significant visual effect on the ramblers and road users at Rochdale Canal Tow, Deansgate. However, it is noted that the proposal appears largely appropriate to Manchester distinctive industrial character, while complementing the emerging modern skyscrapers. The Proposed Development has therefore the potential to become a valuable landmark at a strategic gateway location aiding orientation within the city and contributing to a diverse skyline.



10 BUILT HERITAGE

10.1 Introduction

10.1.1 This Chapter addresses the approach and findings of the assessment of the potential impacts of the Proposed Development on built heritage. It refers to the findings of the Heritage Statement undertaken by Bidwells (November 2020), found in Appendix 10.1.

10.1.2 The assessment has been prepared by Kate Hannelly-Brown BSC(Hons) MSC IHBC, an Associate at Bidwells (Heritage & Design) to assess the impacts of the Proposed Development in relation to the effects it would have on built heritage assets.

10.1.3 The chapter provides the assessment methodology, describes the baseline conditions at the Site and its surroundings, identifies the likely significant environmental effects, describes the mitigation measures required to prevent, reduce or offset any significant adverse effects, and assesses the likely significant residual effects after mitigation measures have been employed. In particular, it considers the likely significant effects of the scale, mass, design and other physical or visual impacts on listed buildings, Conservation Areas, and non-designated heritage assets. Effects identified include impacts on the setting of such assets.

10.1.4 This Chapter (and its associated figures and appendices) is not intended to be read as a standalone assessment and reference should be made to the front end of this ES (Chapters 1 – 6), as well as the final chapter, ‘Summary of Residual and Cumulative Effects’ (Chapter 14).

10.2 Legislation, Policy and Guidance

10.2.1 The relevant legislation, policy and guidance are listed below, with further details provided in Appendix 10.1.

Legislative Framework

10.2.2 The applicable legislative framework is summarised as follows:

- LBCA Act 1990 - Section 66; and
- LBCA Act 1990 - Section 72.

Planning Policy

10.2.3 The applicable planning policy is summarised as follows:

- NPPF Section 12, in particular:



- **Paragraph 189** - In determining applications, local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance. As a minimum the relevant historic environment record should have been consulted and the heritage assets assessed using appropriate expertise where necessary. Where a site on which development is proposed includes, or has the potential to include, heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation.
- **Paragraph 193** - When considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset's conservation (and the more important the asset, the greater the weight should be). This is irrespective of whether any potential harm amounts to substantial harm, total loss or less than substantial harm to its significance.
- **Paragraph 194** - Any harm to, or loss of, the significance of a designated heritage asset (from its alteration or destruction, or from development within its setting), should require clear and convincing justification. Substantial harm to or loss of: 56 a) grade II listed buildings, or grade II registered parks or gardens, should be exceptional; b) assets of the highest significance, notably scheduled monuments, protected wreck sites, registered battlefields, grade I and II* listed buildings, grade I and II* registered parks and gardens, and World Heritage Sites, should be wholly exceptional⁶³.
- **Paragraph 195** - Where a proposed development will lead to substantial harm to (or total loss of significance of) a designated heritage asset, local planning authorities should refuse consent, unless it can be demonstrated that the substantial harm or total loss is necessary to achieve substantial public benefits that outweigh that harm or loss, or all of the following apply: a) the nature of the heritage asset prevents all reasonable uses of the site; and b) no viable use of the heritage asset itself can be found in the medium term through appropriate marketing that will enable its conservation; and c) conservation by grant-funding or some form of not for profit, charitable or



public ownership is demonstrably not possible; and d) the harm or loss is outweighed by the benefit of bringing the site back into use.

- **Paragraph 196** - Where a development proposal will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposal including, where appropriate, securing its optimum viable use.
- **Paragraph 197** - The effect of an application on the significance of a non-designated heritage asset should be taken into account in determining the application. In weighing applications that directly or indirectly affect non-designated heritage assets, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset.
- **Paragraph 200** - Local planning authorities should look for opportunities for new development within Conservation Areas and World Heritage Sites, and within the setting of heritage assets, to enhance or better reveal their significance. Proposals that preserve those elements of the setting that make a positive contribution to the asset (or which better reveal its significance) should be treated favourably.

Guidance

10.2.4 The applicable guidance is summarised as follows:

- Historic England GPA 2: Managing Significance in Decision-Taking in the Historic Environment' (2015);
- Historic England GPA 3: The Setting of Heritage Assets (2017);
- Historic England Advice Note 2: Making Changes to Heritage Assets (2016);
- Historic England Advice Note 4: Tall Buildings (2015); and
- Historic England Advice Note 12: Analysing Significance in Heritage Assets (2019).

10.3 Potential Impacts

10.3.1 Effects on the historic environment can arise through direct physical impacts, impacts on setting or indirect impacts.



10.3.2 Direct physical impacts describe those development activities that directly cause damage to the fabric of a heritage asset. Typically, these activities are related to construction works and will only occur within the Site and may consist of the following:

- Site set-up works, including contractors compound set-up and associated temporary services, levelling work and other preparatory groundworks including remediation for unexploded ordnance and chemical contaminants;
- Construction including demolition, earthworks, foundation excavation or pile installation, service installation, road construction and visual impacts resulting from construction cranes and building activity;
- Landscaping, including ground reduction or levelling and creation of attenuation tanks and ponds; and
- The visual, acoustic, traffic and other effects of the completed development on the significance or setting of built and historic landscape heritage assets.

10.3.3 An impact on the setting of a heritage asset occurs when the presence of a development changes the surroundings of a heritage asset in such a way that it affects (positively or negatively) the heritage significance of that asset. Visual impacts are most commonly encountered but other environmental factors such as noise, light or air quality can be relevant in some cases. Impacts may be encountered at all stages in the life cycle of a development from construction to decommissioning, but they are only likely to lead to significant effects during the prolonged operational life of the development.

10.3.4 Indirect impacts describe secondary processes, triggered by the development, that lead to the degradation or preservation of heritage assets. For example, changes to the setting of a building may affect the viability of its current use and, thus, lead to dereliction.

10.3.5 Potential impacts on the settings of heritage assets are identified from an initial desk-based appraisal of data from the National Heritage List for England and the Manchester HER (Historic Environment Record) and consideration of historic mapping. Where this initial appraisal has identified the potential for a significant effect, the asset has been visited to define baseline conditions and identify key viewpoints.



10.4 Assessment Methodology and Significance Criteria

Scope of the Assessment

10.4.1 As part of the application submission, a Heritage Statement has been prepared and includes an assessment of the significance of the identified heritage assets in accordance with NPPF paragraph 189, and an impact assessment relation to the potential impacts of the proposals. The Heritage Statement includes details of the following:

- A site visit;
- A review of cartographic and archival evidence for the site and relevant assets;
- An examination of national, regional and local planning policies in relation to the built heritage and historic landscape;
- An assessment of the significance of the identified heritage assets;
- An assessment of the potential impacts of the proposals on the identified heritage assets;
- Relevant listed building list entries.

10.4.2 Whilst the assessment of heritage impacts differs from the assessments of townscape and visual impact, the preparation of the Heritage Statement has had regard to the material prepared to accompany the Townscape & Visual Impact Assessment (TVIA).

10.4.3 When considering visual effects on the context and setting of the identified heritage assets the most important, and worst case, views are considered in all instances.

Effects Not Considered within the Scope

10.4.4 A broad assessment of impacts on the setting of heritage assets has been an integral part of the analysis of impacts on heritage assets. Included within the Heritage Statement are all heritage assets where an effect on setting may result from the Proposed Development and where impacts on significance require to be assessed in detail.

10.4.5 Assets on which there would be no tangible impact on their setting arising from the Proposed Development, by reason of physical or visual separation, or as a result of the nature of the asset's setting in itself, have not been considered further within the Heritage Statement.

Extent of the Study Area



10.4.6 The extent of the Study Area has been defined by the potential inter-relationship of assets to the Proposed Development and not by any dimensional measure. This broad approach to setting-assessment ensures that all assets are taken into appropriate account when considering effects on setting, in particular in long views.

Assessment Methodology

Heritage Assets

10.4.7 A heritage asset is defined within the NPPF as *“a building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest. It includes designated heritage assets and assets identified by the local planning authority (including local listing)”* (NPPF Annex 2: Glossary).

10.4.8 To be considered a heritage asset *“an asset must have some meaningful archaeological, architectural, artistic, historical, social or other heritage interest that gives it value to society that transcends its functional utility. Therein lies the fundamental difference between heritage assets and ordinary assets; they stand apart from ordinary assets because of their significance – the summation of all aspects of their heritage interest”* (Managing Built Heritage: The Role of Cultural Values and Significance, Stephen Bond and Derek Worthing 2016.)

10.4.9 ‘Designated’ assets have been identified under the relevant legislation and policy, including, but not limited to, World Heritage Sites, Scheduled Monuments, Listed Buildings, and Conservation Areas. ‘Non-designated’ heritage assets are assets that fall below the national criteria for designation.

10.4.10 The absence of a national designation should not be taken to mean that an asset does not hold any heritage interest. The Planning Policy Guidance (PPG) states that *“non-designated heritage assets are buildings, monuments, sites, places, areas or landscapes identified by plan-making bodies as having a degree of heritage significance meriting consideration in planning decisions, but which do not meet the criteria for designated heritage assets”* (Paragraph: 039 Reference ID: 18a-039-20190723).

10.4.11 The PPG goes on to clarify that *“a substantial majority of buildings have little or no heritage significance and, thus, do not constitute heritage assets. Only a minority have enough heritage significance to merit identification as non-designated heritage assets.”*



Meaning of Significance

- 10.4.12 The concept of significance was first expressed within the 1979 Burra Charter (Australia ICOMOS, 1979). This charter has periodically been updated to reflect the development of the theory and practice of cultural heritage management, with the current version having been adopted in 2013. It defines cultural significance as the *“aesthetic, historic, scientific, social or spiritual value for past, present or future generations. Cultural significance is embodied in the place itself, its fabric, setting, use, associations, meanings, records, related places and related objects. Places may have a range of values for different individuals or groups”* (Page 2, Article 1.2).
- 10.4.13 The NPPF (Annex 2: Glossary) also defines significance as *“the value of a heritage asset to this and future generations because of its heritage interest. The interest may be archaeological, architectural, artistic or historic. Significance derives not only from a heritage asset’s physical presence, but also from its setting.”* Significance can, therefore, be considered to be formed by *“the collection of values associated with a heritage asset”* (‘Managing Built Heritage: The Role of Cultural Values and Significance’ Stephen Bond and Derek Worthing, 2016).
- 10.4.14 It is important to be proportionate in assessing significance as required in both national policy and guidance as set out in paragraph 189 of NPPF. The Historic England document ‘Conservation Principles’ states that *“understanding a place and assessing its significance demands the application of a systematic and consistent process, which is appropriate and proportionate in scope and depth to the decision to be made, or the purpose of the assessment.”* The document goes on to set out a process for assessment of significance, as outlined within the points, below, but it does note that not all of the stages highlighted are applicable to all places / assets:
- Understanding the fabric and evolution of the asset;
 - Identify who values the asset, and why they do so;
 - Relate identified heritage values to the fabric of the asset;
 - Consider the relative importance of those identified values;
 - Consider the contribution of associated objects and collections;
 - Consider the contribution made by setting and context;
 - Compare the place with other assets sharing similar values; and
 - Articulate the significance of the asset.



10.4.15 At the core of this assessment is an understanding of the value / significance of a place. There have been numerous attempts to categorise the range of heritage values which contribute to an asset's significance. Historic England's 'Conservation Principles' sets out a grouping of values as follows:

- **Evidential value** – *“derives from the potential of a place to yield evidence about past human activity...Physical remains of past human activity are the primary source of evidence about the substance and evolution of places, and of the people and cultures that made them...The ability to understand and interpret the evidence tends to be diminished in proportion to the extent of its removal or replacement”* (Page 28).
- **Aesthetic Value** – *“Aesthetic values can be the result of the conscious design of a place, including artistic endeavour. Equally, they can be the seemingly fortuitous outcome of the way in which a place has evolved and been used over time. Many places combine these two aspects... Aesthetic values tend to be specific to a time cultural context and appreciation of them is not culturally exclusive”* (Pages 30-31).
- **Historic Value** – *“derives from the ways in which past people, events and aspects of life can be connected through a place to the present. It tends to be illustrative or associative... Association with a notable family, person, event, or movement gives historical value a particular resonance...The historical value of places depends upon both sound identification and direct experience of fabric or landscape that has survived from the past, but is not as easily diminished by change or partial replacement as evidential value. The authenticity of a place indeed often lies in visible evidence of change as a result of people responding to changing circumstances. Historical values are harmed only to the extent that adaptation has obliterated or concealed them, although completeness does tend to strengthen illustrative value”* (Pages 28-30).
- **Communal Value** – *“Commemorative and symbolic values reflect the meanings of a place for those who draw part of their identity from it, or have emotional links to it... Social value is associated with places that people perceive as a source of identity, distinctiveness, social interaction and coherence. Some may be comparatively modest, acquiring communal significance through the passage of time as a result of a collective memory of stories linked to them...They may relate to an activity that is associated with the place, rather than with its physical*



fabric...Spiritual value is often associated with places sanctified by longstanding veneration or worship, or wild places with few obvious signs of modern life. Their value is generally dependent on the perceived survival of the historic fabric or character of the place, and can be extremely sensitive to modest changes to that character, particularly to the activities that happen there". (Pages 31-32).

- 10.4.16 Value-based assessment should be flexible in its application, it is important not to oversimplify an assessment and to acknowledge when an asset has a multi-layered value base, which is likely to reinforce its significance.

Contribution of Setting / Context to Significance

- 10.4.17 In addition to the above values, the setting of a heritage asset can also be a fundamental contributor to its significance, although it should be noted that 'setting' itself is not a designation. The value of setting lies in its contribution to the significance of an asset. For example, there may be instances where setting does not contribute to the significance of an asset at all.
- 10.4.18 Historic England's Conservation Principles defines setting as "*an established concept that relates to the surroundings in which a place is experienced, its local context, embracing present and past relationships to the adjacent landscape.*" It goes on to state that "*context embraces any relationship between a place and other places. It can be, for example, cultural, intellectual, spatial or functional, so any one place can have a multi-layered context. The range of contextual relationships of a place will normally emerge from an understanding of its origins and evolution. Understanding context is particularly relevant to assessing whether a place has greater value for being part of a larger entity, or sharing characteristics with other places*" (page 39).
- 10.4.19 In order to understand the role of setting and context to decision-making, it is important to have an understanding of the origins and evolution of an asset, to the extent that this understanding gives rise to significance in the present. Assessment of these values is not based solely on visual considerations but may lie in a deeper understanding of historic use, ownership, change or other cultural influence – all or any of which may have given rise to current circumstances and may hold a greater or lesser extent of significance.
- 10.4.20 The importance of setting depends entirely on the contribution it makes to the significance of the heritage asset or its appreciation. It is important to note that impacts that may arise to the setting of an asset do not, necessarily, result in direct or equivalent impacts to the significance of that asset(s).



Assessing Significance / Sensitivity

- 10.4.21 It is evident that the significance / value of any heritage asset(s) requires clear assessment to provide a context for, and to determine the impact of, development proposals. Impact(s) on that value or significance is determined by first considering the sensitivity of the receptors identified which is best expressed by using a hierarchy of value levels.
- 10.4.22 There are a range of hierarchical systems for presenting the level of significance in use; however, the method chosen for this project is based on the established 'James Semple Kerr method' which has been adopted by Historic England, in combination with the impact assessment methodology for heritage assets within the Design Manual for Roads and Bridges (DMRB: HA208 / 13) published by the Highways Agency, Transport Scotland, the Welsh Assembly Government and the department for Regional Development Northern Ireland. This 'value hierarchy' has been subject to scrutiny in the UK planning system, including Inquiries, and is the only hierarchy to be published by a government department.
- 10.4.23 The first stage of our approach is to carry out a thoroughly researched assessment of the significance of the heritage asset, in order to understand its value.

Table 10.1: Heritage Significance	
Significance	Examples
Very High	World Heritage Sites, Listed Buildings, Scheduled Monuments and Conservation Areas of outstanding quality, or built assets of acknowledged exceptional or international importance, or assets which can contribute to international research objectives. Registered Parks & Gardens, historic landscapes and townscapes of international sensitivity.
High	World Heritage Sites, Listed Buildings, Scheduled Monuments, Conservation Areas and built assets of high quality, or assets which can contribute to international and national research objectives. Registered Parks & Gardens, historic landscapes and townscapes which are highly preserved with excellent coherence, integrity, time-depth, or other critical factor(s).
Good	Listed Buildings, Scheduled Monuments, Conservation Areas and built assets (including locally listed buildings and non-designated assets) with a strong character and integrity which can be shown to have good qualities in their fabric or historical association, or assets which can contribute to national research objectives. Registered Parks & Gardens, historic landscapes and townscapes of good level of interest, quality and importance, or well preserved and exhibiting considerable coherence, integrity time-depth or other critical factor(s).



Table 10.1: Heritage Significance	
Significance	Examples
Medium / Moderate	Listed Buildings, Scheduled Monuments, Conservation Areas and built assets (including locally listed buildings and non-designated assets) that can be shown to have moderate qualities in their fabric or historical association. Registered Parks & Gardens, historic landscapes and townscapes with reasonable coherence, integrity, time-depth or other critical factor(s).
Low	Listed Buildings, Scheduled Monuments and built assets (including locally listed buildings and non-designated assets) compromised by poor preservation integrity and / or low original level of quality of low survival of contextual associations but with potential to contribute to local research objectives. Registered Parks & Gardens, historic landscapes and townscapes with modest sensitivity or whose sensitivity is limited by poor preservation, historic integrity and / or poor survival of contextual associations.
Negligible	Assets which are of such limited quality in their fabric or historical association that this is not appreciable. Historic landscapes and townscapes of limited sensitivity, historic integrity and / or limited survival of contextual associations.
Neutral / None	Assets with no surviving cultural heritage interest. Buildings of no architectural or historical note. Landscapes and townscapes with no surviving legibility and / or contextual associations, or with no historic interest.

10.4.24 Once the value / significance of an asset has been assessed, the next stage is to determine the assets 'sensitivity to change'. The following table sets out the levels of sensitivity to change, which is based upon the vulnerability of the asset, in part or as a whole, to loss of value through change. Sensitivity to change can be applied to individual elements of a building, or its setting, and may differ across the asset.

10.4.25 An asset's sensitivity level also relates to its capacity to absorb change, either change affecting the asset itself or change within its setting (remembering that according to Historic England The Setting of Heritage Assets – Planning Note 3, 'change' does not in itself imply harm, and can be neutral, positive or negative in effect).

10.4.26 Some assets are more robust than others and have a greater capacity for change and, therefore, even though substantial changes are proposed, their sensitivity to change or capacity to absorb change may still be assessed as low.

Table 10.2: Receptors Sensitivity	
Sensitivity	Explanation of Sensitivity
High	High Sensitivity to change occurs where a change may pose a major threat to a specific heritage value of the asset which would lead to substantial or total loss of heritage value.



Table 10.2: Receptors Sensitivity	
Sensitivity	Explanation of Sensitivity
Moderate	Moderate sensitivity to change occurs where a change may diminish the heritage value of an asset, or the ability to appreciate the heritage value of an asset.
Low	Low sensitivity to change occurs where a change may pose no appreciable threat to the heritage value of an asset.

Assessment of the Significance of Effects

10.4.27 The following terms describe the magnitude of change (a.k.a. magnitude of impact):

- Major beneficial / adverse impact - where the development would cause a significant improvement (or deterioration) to the existing environment.
- Moderate beneficial / adverse impact - where the development would cause a noticeable improvement (or deterioration) to the existing environment.
- Minor beneficial / adverse impact - where the development would cause a small improvement (or deterioration) to the existing environment.
- Negligible – barely discernible improvement or deterioration to the existing environment.
- Neutral - no change in baseline conditions.

10.4.28 The significance of an effect (i.e. the level of an effect being ‘Significant’ in Environmental Impact Assessment (EIA) terms) on the significance of a heritage asset (Heritage ‘significance’), resulting from a direct or indirect physical impact, or an impact on its setting, is assessed by combining the magnitude of the change and the importance of the heritage asset.

10.4.29 The matrix in Table 10.3 provides a guide to decision-making, but is not a substitute for professional judgement and interpretation, particularly where the importance or effect magnitude levels are not clear or are borderline between categories. EIA significance may be described on a continuous scale from negligible to major; it is also common practice to identify effects as Significant or Not Significant and, in this sense, Major and Moderate effects are regarded as ‘Significant’ in EIA terms, whilst Minor and Negligible effects are ‘Not Significant’.



Table 10.3: Criteria for Assessing the Significance of Effects on Heritage Assets

		Baseline Sensitivity				
		Very High	High	Moderate	Low	Very Low
Magnitude of Change	Major Beneficial	Major Beneficial	Major-Moderate Beneficial	Moderate Beneficial	Moderate-Minor Beneficial	Minor Beneficial
	Moderate Beneficial	Major-Moderate Beneficial	Moderate Beneficial	Moderate-Minor Beneficial	Minor Beneficial	Minor-Negligible Beneficial
	Minor Beneficial	Moderate Beneficial	Moderate-Minor Beneficial	Minor Beneficial	Minor-Negligible Beneficial	Negligible
	Negligible Beneficial	Moderate-Minor Beneficial	Minor Beneficial	Minor-Negligible Beneficial	Negligible	Neutral
	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	Negligible Adverse	Moderate-Minor Adverse	Minor Adverse	Minor-Negligible Adverse	Negligible	Neutral
	Minor Adverse	Moderate Adverse	Moderate-Minor Adverse	Minor Adverse	Minor-Negligible Adverse	Negligible
	Moderate Adverse	Major-Moderate Adverse	Moderate Adverse	Moderate-Minor Adverse	Minor Adverse	Minor-Negligible adverse
	Major Adverse	Major Adverse	Major-Moderate Adverse	Moderate Adverse	Moderate-Minor Adverse	Minor Adverse

10.4.30 Simply combining value and magnitude of effect through a matrix may not, however, necessarily provide the appropriate category of significance of the effect. In particular, as Table 10.3 makes clear, effects may have an impact on the physicality, appreciation and / or setting of the heritage asset, landscape character area, or the value of the existing view. Therefore, the matrix-driven judgements are supported by qualitative assessment text describing the effects, and a final professional judgement about their significance is drawn. This is necessary because this is not a strict quantitative process and some of these considerations will depend on expert judgements. Essentially, the strict application of the matrix can lead to adverse impacts, to some degree. That initial sift of impact producing an adverse impacts, requires qualitative assessment to ascertain whether effects arising from the matrix are genuinely negative.

Assessment of the baseline

10.4.31 The baseline for the study area has been informed by a comprehensive desk-based study, based on all readily available documentary sources including;

- An examination of national, regional and local planning policies in relation to the built heritage and historic landscape;



- Descriptions of designated heritage assets in the National Heritage List for England, viewed on the Historic England website;
- Archaeological and architectural records from the National Record of the Historic Environment, viewed through the Heritage Gateway website; and
- A review of cartographic and archival evidence for the site and relevant assets.

10.4.32 This information has been supplemented by several site visits carried out on to examine the current condition of the Site and the baseline setting of heritage assets in the Study Area.

Assumption and Limitations

10.4.33 Much of the information used by the baseline assessment consists of secondary information compiled from a variety of sources. Unless otherwise stated, the assumption is made that this information is reasonably accurate.

10.5 Baseline Conditions

10.5.1 The baseline for the Study Area has been informed by a comprehensive desk-based study of readily available documentary sources.

10.5.2 The Study Area defined for this assessment as extending to 0.6 km from the Site. Owing to the urban nature of the Site, this is taken as the maximum extent of potentially significant effects on heritage as a result of changes in their settings. This does not exclude consideration given to views into the Study Area from outside this set area.

10.5.3 Although there are numerous built heritage assets within the local surrounding area, the location and significance of many of them results in them having no perceptible relationship with the Site. For this reason, only the heritage assets that may be considered to be affected by the proposed development of the Site have been considered further.

Heritage Assets within in Study Area

10.5.4 There are no Statutorily Listed Buildings, Registered Parks and Gardens or locally listed buildings within the application Site. The Site is, however, within the proximity of numerous designated assets within the vicinity of the site. Those whose settings may be regarded as being potentially affected by the Proposed Development are discussed further, below.



Sensitive Receptors

10.5.5 The sensitive receptors are listed below in Table 10.4 and Table 10.5, which include an assessment of significance for each asset, applying the methodology detailed within this chapter and as set out in the Bidwells Heritage Statement.

Table 10.4: Designed Heritage Assets			
Asset	Designation	Overall Significance	Baseline EIA Sensitivity
Castlefield Conservation Area	Conservation Area	Good	Moderate
Bridgewater Canal Offices	Grade II	Moderate / Good	Moderate
Middle Warehouse, at Former Castlefield Goods Yard	Grade II	Moderate / Good	Moderate
The Church of St George – Grade II* Listed Building	Grade II*	Good / High	High
Merchants Warehouse	Grade II	Moderate / Good	Moderate
Rochdale Canal Lock Number 92 and Castle Street Bridge	Grade II	Moderate / Good	Moderate
Castlefield Railway Viaduct	Grade II	Moderate / Good	Moderate
Castlefield Information Centre	Grade II	Moderate	Moderate
Former Entrance to Deansgate Goods Station including Nos. 223-233 Deansgate	Grade II	Moderate	Moderate
235-291 Deansgate	Grade II	Moderate	Moderate
Deansgate Goods Station and Attached Carriage Ramp	Grade II*	Good / High	High
G-Mex (Manchester Central Convention Complex)	Grade II*	Good / High	High
The Britons Protection Public House	Grade II	Moderate	Moderate
13-17 Albion Street	Grade II	Moderate	Moderate

Table 10.5: Non-Designated Heritage Assets			
Asset	Designation	Overall Significance	Baseline EIA Sensitivity
Dukes 92 Bar, 8 - 25 Castle St	Non-designated	Negligible / Low	Low
Bass Warehouse, 4 Castle Street	Non-designated	Negligible / Low	Low
Eastgate, 2 Castle Street	Non-designated	Negligible / Low	Low
The Atlas Bar, 376 Deansgate	Non-designated	Negligible / Low	Low
4 Jordan Street	Non-designated	Negligible	Low
5-7 Constance Street	Non-designated	Negligible	Low
1 Constance Street / 10a Little Peter Street	Non-designated	Negligible	Low
8-12 Hewitt Street / 21 Little Peter Street	Non-designated	Negligible / Low	Low
357-361 Deansgate	Non-designated	Negligible / Low	Low



10.6 Assessment of Effects

Design Solutions and Assumptions

- 10.6.1 The scheme assessed is as shown in the Corstorphine & Wright submission documents and drawings, including the Design & Access Statement (DAS). This should also be read in conjunction with the Heritage Statement prepared by Bidwells.
- 10.6.2 The preferred mitigation option is always to avoid or reduce impacts through design. The Proposed Development has sought to mitigate the impact on all the designated and non-designated assets in and around the Site through careful consideration of its design and appearance.
- 10.6.3 The replacement will provide a high-quality nodal point at the southern entrance into the City of Manchester. The building's detailed design, scale and massing have been carefully chosen to allow it to add to the secondary skyline found within the background of the Conservation Area. The height of the proposed building ensures that it acts as a visual bridge between the high rises of the Deansgate South development and the tall buildings constructed on the northern side of the Bridgewater Viaduct.
- 10.6.4 The proposed structure has been designed with a feature entrance at the junction with Deansgate, Chester Road and the Bridgewater Viaduct creating a far more active elevation that engages with surrounding area, adding a sense of connection with the area to the west of the Site, including with the Bridgewater Canal Offices.
- 10.6.5 Whilst the chosen materials ensure that it would be appropriate for its surrounding context, through referencing the surrounding colour palette. This allows the building to act as an evolutionary structure between the historic scale and construction materials/colour palette of the Castlefield Conservation Area and the modern structures of the Great Jackson Street Development Area. This ensures the building feels grounded within its context and reflects the character and historic evolution of the surrounding area.

Assessment of Effects

Construction

- 10.6.6 The Site, as it stands today, with open poor-quality hardscaping and lack of frontage development is in contrast with its former appearance. The lack of frontage contributes to the adverse impact the site makes to the Conservation Area and other assets. When considering the principle of the redevelopment of the Site, although it is



noted that this has already been accepted through the previous approval for the Site, it is considered that the development of the poor quality, vacant Site will result in a **Permanent Minor Beneficial Effect** to the setting of the Conservation Area.

10.6.7 There is potential for construction activities to have an indirect impact on heritage assets in the surrounding area through noise and dust, which may have adverse effects on the setting of heritage assets, and through movements of construction traffic, which may impact on Castlefield Conservation Area. As the Site is located on Chester Road and Deansgate, the adjacent assets already experience noise. As such, the potential for construction noise associated with the Proposed Development is not considered to result in additional adverse effects; thereby resulting in a **Permanent Neutral Effect**.

Operational Phase

10.6.8 The operational phase of the development is not considered to result in any additional direct physical impacts to assets. The operational phase does, however, have the potential to change the setting of heritage assets, impacting on assets both within and surrounding the Site.

Conservation Area

10.6.9 The Conservation Area has a very industrial character defined by the presence of both the Rochdale Canal and the railway in addition to the industrial structures, which historically would have been associated with these two pieces of infrastructure. The area has been densely developed with only two green spaces within the designation. Many of the structures are of a large scale and often have a warehouse aesthetic, adding to the very industrial appearance of the area.

10.6.10 The application Site is located immediately adjacent the Conservation Area's south-eastern boundary and has a very limited visual relationship due to the low scale of the Site in its current form to the presence of tall buildings along the northern side of Chester Road and the lower level of the Castlefield Canal Basin. The introduction of a taller building and greater mass will result in a reduction in the ability to appreciate the open skyline above the existing Site. As a result of the Site's increased presence arising from its mass, height and scale, there will be a **Permanent Minor - Negligible Adverse Effect (Not Significant)** on the Conservation Area.

Listed Buildings



- 10.6.11 There are twenty listed buildings / structures (three Grade II* and seventeen Grade II), where the Site makes a contribution to their setting, the significance and location of which is discussed and illustrated with the accompanying Heritage Statement prepared by Bidwells. These assets will have a greater awareness of the Site as a result of its increased mass, but for the large majority it will be seen in context of the new proposed high-rise developments and will not dominate the skyline. As such, the Proposed Development is considered to have a **Permanent Neutral Effect** on the setting of these assets.
- 10.6.12 With regard to the Former Castlefield Congregational Chapel, the introduction of bring a greater scale alongside Deansgate and, as a result, certain views towards the tower of the chapel will be affected by its prominence. As such, it is considered that there will be a **Permanent Minor Adverse Effect (Not Significant)** upon this asset.
- 10.6.13 The Bridgewater Canal Offices, which is Grade II listed, has the strongest visual connection with the Site. The Proposed Development will result in an increased scale of the buildings, but the redevelopment of the Site will repair the fragmented streetscape. The proposed structure has been designed with a feature entrance at the junction with Deansgate, Chester Road and the Bridgewater Viaduct creating a far more active elevation that engages with surrounding area, adding a sense of connection with the area to the west of the site, including with the Bridgewater Canal Offices. As a result, there will be **Permanent Minor Beneficial Effect (Not Significant)** on the setting of this building.

Non-designated Assets

- 10.6.14 There are eight non-designated assets within the vicinity of the Site, as with the designated assets their significance and location is detailed within the accompanying Heritage Statement prepared by Bidwells. There will be a newly created awareness of the site, due to the proposed height of the building. However, the building will be an additional structure in the already urban backdrop of their setting and it will be seen within the context of the Great Jackson Street Development Area. As such, the proposals are considered to have a **Permanent Neutral Effect** on the setting of these assets.

10.7 Mitigation

- 10.7.1 There are no additional mitigations to the scheme, in terms of built heritage, other than the embedded mitigation discussed above.



10.8 Residual Effects

10.8.1 When considering the development as a whole the residual effect of the Proposed Development upon the setting of the Conservation Area will be a **Permanent Neutral Effect**, with a **Permanent Minor Beneficial Effect** upon the setting of the Bridgewater Canal Offices in the long-term. The residual effects on the remainder of the assets is considered to be **Permanent Neutral Effects** in the long-term

10.9 Assessment of Cumulative Effects

10.9.1 The projects listed within the Table 10.6, below, have been considered in terms of their potential to result in cumulative effects in combination with the Proposed Development.

Table 10.6: Other Developments		
Schemes for Consideration Within Cumulative Impact Assessment		
Scheme	Description	Status
Castle Wharf. 113870/FO/2016	Construction of two residential apartment buildings with ancillary amenity facilities for residents including a gym, landscaped terrace and swimming pool, new public realm and landscaping including two new pedestrian connections to the Castlefield basin from Chester Road, basement car parking and related highway, access, servicing and associated works.	Under construction
Crown Street Phase 1. 119806/FO/2018	Erection of two tall buildings (51 storeys and 21 storeys) comprising 664no residential units (use class C3) and commercial space (A1, A3 or D1), provision of two levels of basement parking, alterations to surface level car park, landscaping, highway alterations, access and associated works.	Under construction
325 - 327 Deansgate. 125804/FO/2019	Demolition of existing buildings and structures on-site and erection of 22-storey building comprising apart-hotel (Use Class C1) with flexible commercial uses at ground floor and within existing viaduct arches (Use Class A1, A2, A3, A4, D2), access, landscaping and other associated works.	Planning permission not yet implemented
Land Bound By Silvercroft Street, Crown Street, And The Mancunian Way. 126668/FO/2020	Full planning permission for the erection of two 52-storey residential buildings (Use Class C3) each incorporating a podium accommodating residential amenity facilities and ground floor and first floor commercial units (Use Classes A1, A2, A3, or D1), private and public basement car parking, landscaping and a public park, servicing and access arrangements, highways improvements, and associated works (Phases A, B, and D). Outline planning permission (with all matters reserved) for an educational facility (Use Class D1) (Phase C).	Planning permission not yet implemented
Transition. 116850/FO/2017	Demolition of the existing buildings on the site and construction of three residential buildings, 32, 26 and 18 storeys in height, comprising	Planning permission not yet implemented



Table 10.6: Other Developments		
Schemes for Consideration Within Cumulative Impact Assessment		
Scheme	Description	Status
	a total of 399 residential units (C3) and 50 retirement living units (C2) with roof top ancillary restaurant; 675 sq.m of commercial floor space (Use Classes A1, A2, A3, A4, B1, D1 or D2); associated car and cycle parking within a basement level; public realm and landscaping; access and servicing arrangements; and other associated works.	
Deansgate Square. 111719/FO/2016/C1	Construction of four residential buildings, ancillary amenity building for residents accommodating a tennis court, swimming pool and gym facilities (Use Class C3), ground floor retail units (Use Classes A1, A2, or A3), amenity space for residents within residential buildings, new public realm and landscaping, basement car parking and related highway, access, servicing, engineering and associated works.	Under construction
River Street. 118683/FO/2017 and 122211/NMC/2018	<u>118683/FO/2017</u> Demolition of the existing structure and construction of a part 32, part 10 and part 5 storey building comprising 807 student bed spaces (sui generis), amenity space, landscaping, cycle provision and associated highways works <u>122211/NMC/2018</u> Non-Material Amendment to planning permission 118683/FO/2017 to allow the removal of the Level 04 plant room and addition of 1 no. Studio Bedroom in its place, resulting in an overall provision of 792 student bed spaces.	Under construction (due to complete Sept 2020)
Plot 9A First Street. 121462/FO/2018	Erection of a ground plus sixteen storey building comprising commercial office (Use Class B1); hotel (Use Class C1); standalone flexible, commercial space across part of the ground and first floor (Use Classes A1 (Shops), A2 (Professional and Financial Services), A3 (Restaurants and Cafes), A4 (Drinking Establishments, B1 (offices), and D2(Gymnasium); flexible ancillary commercial and retail uses at ground and first floor (Use Class B1, A3, A4); basement car park, landscaping and associated works.	Planning permission not yet implemented
Land Bounded By River Street To The North, Plot 10 To The East, Hulme Street To The South And Medlock Street To The West 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.	Planning permission not yet implemented



Table 10.6: Other Developments		
Schemes for Consideration Within Cumulative Impact Assessment		
Scheme	Description	Status
10-12 Whitworth Street West 111003/FO/2016/C1	Demolition of existing building at 10 - 12 Whitworth Street West, and redevelopment of the site for a new 35 storey residential building (Use Class C3) comprising 327 apartments, with associated residents' services, facilities and communal spaces: servicing, highways, public realm and associated works.	Planning permission not yet implemented
Axis. 106490/FO/2014/C1 and 115351/NMC/2017	<u>106490/FO/2014/C1</u> Construction of a lower ground plus 27 storey residential building (Class C3) with associated servicing arrangements, hard landscaping, pedestrian access bridge and associated works. <u>115351/NMC/2017</u> Non-Material Change to planning consent ref:106490/FO/2014/C1 (Construction of a lower ground plus 27 storey residential building (Class C3) with associated servicing arrangements, hard landscaping, pedestrian access bridge and associated works) including lowering the building parapet, revisions to glazing details, providing new parallel opening vents, increased depth of soffit and lowering of second floor cladding profile, height reduction of media screen, sub-station and door repositioning, alteration to column design, deletion of apartment bedroom, reconfiguration of bin store and amendment to the feature profile detail.	Under construction
Viadux. 115871/FO/2017 and 126868/JO/2020	<u>115871/FO/2017</u> Erection of a 40 storey building to form 375 residential apartments (Use Class C3a) and the erection of a 14 storey building for form offices (Use Class B1) (31,756 sqm) together with ground floor commercial space (Use Class A1, A3 or A4) (1010 sqm) with associated enclosed service yard, public realm including staircase and lift to connect with viaduct, car and le parking, landscaping and other associated works. <u>126868/JO/2020</u> Variation of planning conditions 2, 3, 21, 24, 25, 29, 30, 31, 32, 36 and 38 of planning permission 115871/FO/2017 (amended by 126604/NMC/2020) to allow for a reduction in overall height of the building by 2.5 metres, changes to the number and type of structural interventions into the listed arches, modification and alteration to the bridge over Great Bridgewater Street, alterations to the ground floor layout including enlargement of residents lobby together with re-location of the cycle store and reduction in car parking, alterations to the upper floor layout to remove 3 bedroom apartments and elevational alterations to main facade of the residential tower to	Under construction



Table 10.6: Other Developments		
Schemes for Consideration Within Cumulative Impact Assessment		
Scheme	Description	Status
	modify the fin arrangement together with alteration to the podium with the introduction of perforated panels.	
Potato Wharf. 114999/FO/2017	Erection of two residential buildings (Use Class C3) with a link building, comprising 191no apartments, residential amenity areas, car parking, bicycle parking, public realm and landscape works, access and servicing arrangements, and associated works, following demolition of the existing buildings and plant.	Under construction
Land Bounded by Arundel Street, Ellesmere Street, The A57 (M) Inner Ring Road (Mancunian Way) And Worsley Street 123261/FO/2019	Erection of a part 8 and 9 storey building located on Arundel Street and Worsley Street, a part 11 and 23-storey residential building located on the Mancunian Way and refurbishment and conversion of the existing DOT Building to form 355 residential apartments in total (Use Class C3a) together with commercial uses (Use Classes A1, A2, B1, D1 and D2) along with associated car parking, cycle parking, access, landscaping and other associated work.	Planning permission not yet implemented

10.9.2 The area is already characterised by a built form, which is a combination of new contemporary additions and historic built form of a varying scale and type and age. Consequently, the character of this area is varied and it is considered that the construction of the above developments would not result in a significant cumulative effect(s) on heritage assets when considering the Proposed Development.

10.10 Summary

10.10.1 The assessment has considered the potential effects of construction and operation on heritage assets within a 0.6 km Study Area. It has found that there are no construction phase effects on known heritage assets within the Study Area. It has also found that there is potential for operational phase effects on the setting to the heritage asset within the surrounding area. Following mitigation, with the exception of the Bridgewater Canal Offices and the Congregational Church, the operational effects are considered to be **Permanent Neutral-Beneficial Effect** in the long-term. In the case of the Bridgewater Canal Offices, the effect is considered to be **Permanent Minor Beneficial (Not Significant)**. In the case of the Castlefield Congregational Church, there would be a **Permanent Minor Adverse Effect (Not Significant)** on setting.



11 DAYLIGHT, SUNLIGHT & OVERSHADOWING

11.1 Introduction

11.1.1 This Chapter reports the likely significant effects of the Proposed Development in terms of Daylight, Sunlight & Overshadowing in the context of the Site and surrounding area. It considers the likely significant effects of daylight and sunlight amenity on the surrounding residential receptors.

11.1.2 This Chapter (and its associated figures and appendices) is not intended to be read as a standalone assessment and reference should be made to the front end of this ES (Chapters 1 – 6), as well as the final chapter, ‘Summary of Residual and Cumulative Effects’ (Chapter 14).

11.2 Legislation, Policy and Guidance

11.2.1 The relevant legislation, policy and guidance are listed below.

Legislative Framework

11.2.2 The applicable legislative framework is summarised as follows:

Revised National Planning Policy Framework 2019

11.2.3 The National Planning Policy Framework (NPPF) adopted on the 27 March 2012, and updated on 19 February 2019 stipulates that “...*planning policies and decisions should always seek to secure a good standard of amenity for existing and future occupants of land and buildings.*”

11.2.4 Paragraph 123 further states:

“Where there is an existing or anticipated shortage of land for meeting identified housing needs, it is especially important that planning policies and decisions avoid homes being built at low densities, and ensure that developments make optimal use of the potential of each site. In these circumstances:

[...]

c) In this context, when considering applications for housing, authorities should take a flexible approach in applying policies or guidance relating to daylight and sunlight, where they would otherwise inhibit making efficient use of a site (as long as the resulting scheme would provide acceptable living standards).”



National Planning Practice Guidance (2019)

11.2.5 The National Planning Practice Guidance (NPPG) – Making Effective Use of Land, published on 22 July 2019, states that:

“Where a planning application is submitted, local planning authorities will need to consider whether the proposed development would have an unreasonable impact on the daylight and sunlight levels enjoyed by neighbouring occupiers, as well as assessing whether daylight and sunlight within the development itself will provide satisfactory living conditions for future occupants.”

11.2.6 Paragraph 007 Reference ID: 66-007-20190722 also states:

“All developments should maintain acceptable living standards. What this means in practice, in relation to assessing appropriate levels of sunlight and daylight, will depend to some extent on the context for the development as well as its detailed design. For example in areas of high-density historic buildings, or city centre locations where tall modern buildings predominate, lower daylight and daylight and sunlight levels at some windows may be unavoidable if new developments are to be in keeping with the general form of their surroundings.”

Planning Policy

11.2.7 The applicable planning policy is summarised as follows.

Manchester Core Strategy (2012 – 2027)

11.2.8 Policy DM1 – Development Management – States that all developments should have regard to the effects on amenity including privacy, light, noise, vibration, air quality and odours.

11.2.9 Policy EN2 – Tall Buildings – States that, by their very size, tall buildings can have a significant impact on the local environment and its micro-climate. It is therefore expected that this impact be modelled and that submissions for tall buildings also include appropriate measures to create an attractive, pedestrian friendly local environment.



Guide to Development in Manchester Supplementary Planning Document (SPD) and Planning Guidance (Adopted April 2007)

11.2.10 The SPD sets out a series of design principles which should be considered and implemented where necessary, those measures relevant to this assessment are:

- Minimise reliance on energy-using equipment for heating, cooling, lighting and natural ventilation.
- Site layout and building design principles should maximise the capture and use of daylight and passive solar energy, whilst avoiding excessive solar gain in the summer.
- Consider the impacts of overshadowing.

Guidance

11.2.11 The applicable guidance is summarised as follows:

Building Research Establishment (BRE) 'Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice', Second Edition, 2011

11.2.12 The Building Research Establishment (BRE) Guidelines 'Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice 2011, 2nd edition' (released October 2011) provides advice on site layout planning to achieve good sunlighting and daylighting within buildings, and in the open spaces between them. It is intended for use by building designers, developers, consultants and Local Planning Authorities (LPAs). The advice it gives is not mandatory and should not be used as an instrument of planning policy, it states:

"This guide is a comprehensive revision of the 1991 edition of Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice. It is purely advisory and the numerical target values within it may be varied to meet the needs of the development and its location."

11.2.13 It also states:

"The advice is given here is not mandatory and the guide should not be seen as an instrument of planning policy; its aim is to help rather than constrain the designer. In special circumstances, the developer or planning authority may wish to use different target values... in an area with modern high rise buildings, a higher degree of obstruction maybe unavoidable if new developments are to match the height and proportions of existing building" (para.1.6).



11.2.14 In addition, the BRE Guidelines state (para. 1.3) that: *“it is intended to be read in conjunction with the interior daylighting recommendations in the British Standard 8206-2 Code of practice for daylighting, and in the CIBSE publication Lighting guide: daylighting and window design”*.

British Standard (BS) 8206-2:2008: ‘Lighting for Buildings – Part 2: Code of Practice for Daylighting’

The British Standard 8206 part 2 provides recommendations regarding the design for daylight in buildings and sets out various methods for assessing daylight. The document states:

“Daylighting gives to a building a unique variety and interest. An interior which looks gloomy, or which does not have a view to the outside when this could reasonably be expected, will be considered unsatisfactory by its users.”

11.3 Assessment Methodology and Significance Criteria

Methodology for Determining Baseline Conditions and Sensitive Receptors

Daylight and Sunlight

11.3.1 The BRE Guidelines suggest that residential properties have the highest requirement for daylight and sunlight and states that:

“the guidelines are intended for use for rooms in adjoining dwellings where light is required, including living rooms, kitchens and bedrooms.”

11.3.2 The following properties have been considered due to their proximity to the Site, and their use:

- Castle Wharf;
- Deansgate Quay; and
- West Tower, Deansgate Square.

11.3.3 The assessment has considered other adjacent residential properties and due to the distance and orientation from the proposed development, they are unlikely to be affected, so they have not been assessed in detail.

11.3.4 The coronavirus pandemic has not impacted the methodologies used in producing this assessment. As such, the outcomes and conclusions are unaffected and would be the same were the pandemic not present.

Scenarios Assessed



11.3.5 The following scenarios have been assessed and considered, and reported within the Chapter of the ES:

- Baseline; and
- Proposed.

11.3.6 Schemes under construction and schemes with planning consent but not under construction have both been included in the baseline, in line with the BRE Guide. No cumulative assessment is therefore required as the baseline scenario already considers any impact on existing surrounding receptors resulting from consented developments.

Methodology for Determining Demolition and Construction Effects

11.3.7 Owing to the evolving and changing nature of demolition and construction activities, the assessment of potential effects during demolition and construction of the Proposed Development on daylight and sunlight to surrounding properties has not been modelled. Instead, a qualitative assessment has been undertaken using professional judgement and experience.

11.3.8 Since the potential daylight and sunlight effects relating to demolition and construction works will vary throughout the construction programme and 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, sunlight and overshadowing.

Methodology for Determining Operational Effects

11.3.9 The following approaches have been undertaken to assess the effect on the sensitive receptors of surrounding properties when the Proposed Development is completed and operational:

Daylight:

- Vertical Sky Component (VSC); and
- No Sky Line (NSL) Method.

Sunlight:

- Annual Probable Sunlight Hours (APSH).

Outline Approach for Daylight and Sunlight



- 11.3.10 The technical analyses carried out to inform the daylight and sunlight assessments have been undertaken by creating a digital three-dimensional (3D) model of the existing Site and Proposed Development. The 3D model uses Waldram Diagrams to establish the VSC and 3D geometric calculations for daylight distribution.
- 11.3.11 Only those surrounding residential properties which have windows facing towards the Site have been included in the assessment. If a nearby residential property has no windows facing the Site, these properties would not be affected by the Proposed Development in terms of light.
- 11.3.12 If a window in a surrounding residential property faces the Site, but does not face within 90° of due south, it has been excluded from the APSH sunlight assessment, in line with the BRE Guide.

Daylight

Vertical Sky Component (VSC) Method

- 11.3.13 The VSC method of assessment is defined in the BRE Guidelines as the:
- “ratio of that part of illuminance at a point on a given vertical plane that is received directly from a CIE¹ standard overcast sky, to illuminate on a horizontal plane due to an unobstructed hemisphere of this sky”.*
- 11.3.14 This ratio is the percentage of the total unobstructed view that is available, once obstructions (e.g. the Proposed Development), are placed in front of the point of view.
- 11.3.15 The assessment is calculated from the centre of a window on the outward face and measures the amount of light available on a vertical wall or window following the introduction of visible barriers, such as buildings. The VSC has been calculated by using a 'Waldram Diagram'.
- 11.3.16 The Waldram Diagram is effectively a snapshot taken from that point of the sky in front of the window, together with all relevant obstructions to it, i.e. the buildings. For calculation purposes, trees may be ignored unless they form dense continuous belts.
- 11.3.17 The maximum VSC value is almost 40% for a completely unobstructed vertical wall or window. In terms of assessment criteria, the BRE Guidelines state that:

¹ The International Commission on Illumination (also known as the 'CIE' from its French title, the Commission Internationale de l'Eclairage).



“if the VSC, with the development in place, is both less than 27% and less than 0.8 times its former value, occupants of the existing building will notice the reduction in the amount of skylight. The area lit by the window may appear more gloomy and electric lighting will be needed more of the time”.

No Sky Line (NSL) Method

11.3.18 The BRE Guidelines provide that where room layouts are known, the effect on the daylight distribution can be calculated by plotting the NSL. In terms of the surrounding receptors, it has not been possible to obtain room layouts for all of the properties and therefore layouts have been assumed where information is not available.

11.3.19 The NSL method is a measure of the distribution of daylight at the ‘working plane’ within a room. The ‘working plane’ means a horizontal ‘desktop’ plane 0.85m in height for residential properties. The NSL divides those areas of the working plane which can receive direct sky light from those which cannot. If a significant area of the working plane lies beyond the NSL (i.e. it receives no direct sky light), then the distribution of daylight in the room will be poor and supplementary electric lighting may be required.

11.3.20 The potential effects of daylighting distribution in an existing building can be found by plotting the NSL in each of the main rooms. For houses, this will include living rooms, dining rooms and kitchens. Bedrooms should also be analysed, although they are less important. The BRE Guidelines identify that if the area of a room that does receive direct sky light is reduced to less than 0.8 times its former value, then this would be noticeable to its occupants.

11.3.21 BS 8206 Part 2 states (para 5.7) that the:

“uniformity of daylight is considered to be unsatisfactory if a significant part of the working plane (normally more than 20%) lies behind the no-sky line”.

11.3.22 Therefore, it is implied that an NSL of at least 80% would be considered satisfactory.

11.3.23 In regards to deep rooms which are lit by windows on one side, the BRE Guidelines state (para. 2.2.10):

“If an existing building contains rooms lit from one side only and greater than 5 m deep, then a greater movement of the no sky line may be unavoidable.”

Sunlight

Annual Probable Sunlight Hours (APSH) Method



11.3.24 Sunlight is measured using a sun indicator which contains 100 spots, each representing 1% of APSH. Therefore, where no obstruction exists the total annual probable sunlight hours would amount to 1392 and therefore each spot equates to 13.92 hours of the total annual sunlight hours.

11.3.25 The number of spots is calculated for the Baseline and Proposed Development scenarios during the year and also during the winter period, and a comparison made between the two. This provides a percentage of APSH for each of the time periods for each window assessed.

11.3.26 The BRE Guidelines note that:

- *“In housing, the main requirement for sunlight is in living rooms, where it is valued at any time of day, but especially in the afternoon.”*
- *“all main living rooms of dwellings...should be checked if they have a window facing within 90° of due south. Kitchens and bedrooms are less important, although care should be taken not to block too much sun”.*
- *“If the main living room to a dwelling has a main window facing within 90° of due north, but a secondary window facing within 90° of due south, sunlight to the secondary window should be checked.”*
- *“...a south facing window will, in general, receive most sunlight, while a north facing one will receive it only on a handful of occasions. East and west facing windows will receive sunlight only at certain times of day”.*

11.3.27 In regards to existing surrounding receptors, the BRE Guidelines provide that a window may be adversely affected if a point at the centre of the window receives for the whole year, less than 25% of the APSH, including at least 5% of the APSH during the winter months (21st September to 21st March) and less than 0.8 times its former sunlight hours during either period, and if there is a reduction in total APSH which is greater than 4%.

11.3.28 BS 8206 Part 2 (section 5.2) states that:

“Provided that the entry of sunlight is properly controlled, it is generally welcome in most buildings in the UK. Dissatisfaction can arise as much from the permanent exclusion of sunlight as from its excess. The provision of sunlight is important in dwellings, particularly during winter months. Sunlight is especially valued in habitable rooms used for long periods during the day.”



“Interiors in which the occupants have a reasonable expectation of direct sunlight should receive at least 25% of probable sunlight hours (see 2.10.2). At least 5% of probable sunlight hours should be received during the winter months, between 21 September and 21 March. Sunlight is taken to enter an interior when it reaches one or more window reference points.”

11.3.29 Therefore, an assessment of sunlight is only required for living rooms that face within 90 degrees of due south.

Summary of Criteria for Daylight and Sunlight

11.3.30 The BRE Guidelines provide the criteria in Table 11.1 below to calculate daylight and sunlight impact assessments, used to assess impacts on nearby receptors.

Table 11.1 : Daylight & Sunlight Impact Assessments	
Method	BRE Criteria
VSC	A window may be adversely affected if its VSC measured at the centre of the window is less than 27% and less than 0.8 times its former value.
NSL	A room may be adversely affected if the daylight distribution (NSL) is reduced beyond 0.8 times its existing area.
APSH	A window may be adversely affected if a point at the centre of the window received for the whole year, less than 25% of the APSH including at least 5% of the APSH during the winter months (21st September to 21st March) and less than 0.8 times its former sunlight hours during either period, and for existing neighbouring buildings, if there is a reduction in total APSH which is greater than 4%.

Significance of Effects

Significance Criteria

Daylight and Sunlight Magnitude of Impact

11.3.31 For daylight and sunlight, the BRE Guidelines outline the approach (within Appendix I) in terms of assigning criteria to assess the effects (para I3-I8):

“Adverse impacts occur when there is a significant decrease in the amount of skylight and sunlight reaching an existing building where it is required...The assessment of impact will depend on a combination of factors, and there is no simple rule of thumb that can be applied.”

“Where the loss of skylight or sunlight fully meets the guidelines, the impact is assessed as negligible or minor adverse. Where the loss of light is well within the guidelines, or only a small number of windows or limited area of open space lose light (within the guidelines), a classification of negligible impact is more appropriate. Where the loss of light is only just within the guidelines and a larger number of windows or open space



are affected, a minor adverse impact would be more appropriate, especially if there is a particularly strong requirement for daylight and sunlight in the affected building or open space.”

“Where the loss of skylight or sunlight does not meet the guidelines in this book, the impact is assessed as minor, moderate or major adverse. Factors tending towards a minor adverse impact include:

- Only a small number of windows are affected;*
- The loss of light is only marginally outside the guidelines;*
- An affected room has other sources of skylight or sunlight; and*
- The affected building only has a low level of requirement for skylight or sunlight.”*

11.3.32 The classification of major adverse is documented within Paragraph 7 of the BRE Guidelines:

“Factors tending towards a major adverse impact include:

- a large number of windows are affected;*
- the loss of light is substantially outside the guidelines;*
- all the windows in a particular property are affected; and*
- the affected indoor spaces have a particular strong requirement for skylight or sunlight, e.g. a living room in a dwelling”.*

“Beneficial impacts occur when there is a significant increase in the amount of skylight and sunlight reaching an existing building. Beneficial impacts should be worked out on the same principals as adverse impacts.”

11.3.33 Therefore, best practice guidance and professional judgment has been used to determine any impacts based on the guidance set out in Appendix I of the BRE Guidelines. Potential effects have been identified as beneficial, adverse or negligible, and their magnitude of impact have been set out as Minor, Moderate and Major.

11.3.34 The BRE Guidelines do not provide any guidance on what constitutes a moderate adverse impact. The initial numerical criteria for determining the magnitude of impact is based on percentage alterations, as follows:



Table 11.2: Daylight, Sunlight and Overshadowing Magnitude of Effect	
Magnitude of Impact	Percentage Alteration
Major	40%+
Moderate	30-39.9%
Minor	20-29.9%
Negligible	0-20%

Sensitivity of Identified Receptor

11.3.35 It is important that the location and nature of the Proposed Development site and surrounding is considered when determining the level of effect for any impacts identified. The BRE Guide is very clear that the targets provided are not mandatory. This scope and view should also be followed through to the sensitivity of the surrounding receptors. There should be an expectation that a higher degree of obstruction is inevitable in an area which has been identified as having clear development potential.

11.3.36 For these reasons, the surrounding receptors may have a lower sensitivity to change than those located in less dense areas. Sensitivity classification has been assigned on how the proposed receptor is able to accommodate or adapt to the effect of the Proposed Development and has been based on professional judgement and the scope of the BRE Guide.

11.3.37 The following receptors are defined as having a moderate sensitivity:

- Deansgate Quay;
- West Tower, Deansgate Square; and
- Castle Wharf.

Level of Effect

11.3.38 The level of any identified environmental effects has been determined by the assessment of their magnitude against their sensitivity. The table, below, illustrates how the sensitivity of the receptors and the magnitude of an impact are used to determine the level of effect.



Table 11.3: Effect Significance Matrix			
Magnitude	Sensitivity		
	High	Moderate	Low
Major	Major	Major	Moderate – Minor
Moderate	Moderate	Moderate	Minor
Minor	Minor	Minor	Minor – Negligible
Negligible	Negligible	Negligible	Negligible
Key	Significant in terms of EIA Regulations		
	Not Significant in terms of EIA Regulations		

11.3.39 Any effect that is assessed as being moderate or above is considered to be ‘Significant’ (in EIA terms) and any effect that is assessed as being Minor or below is considered to be ‘Not Significant’ (in EIA terms).

11.3.40 When assigning significance criteria for daylight and sunlight effects, professional judgement has been used. Consideration has been given to the proportion of rooms/windows affected, as well as the percentage alterations, absolute changes, sensitivity of the receptor, and any other relevant factors, such as there may be mitigating factors such as location and nature of development, balconies, overhangs or design features which may also affect the determination of assigning the criteria.

Limitations and Assumptions

11.3.41 Where actual room layouts were available, they have been considered when modelling the internal layouts within the surrounding properties. Where layout information was not available, assumptions have been made (from external observations) as to the use and internal configuration of the rooms behind the fenestration observed. In such cases, a standard 4.2 m (14 ft) room depth has been assumed, unless the building form dictated otherwise. This is common practice where access to buildings for surveying is unavailable. Obtaining these room layouts enables precise evaluation of the diffuse levels of daylight within each of the rooms via the NSL. Where access was not obtained, floor levels have been assumed for adjoining properties. This dictates the level of the working plane that is relevant for the NSL assessments.



11.4 Baseline Conditions

Daylight and Sunlight

11.4.1 The full Baseline Daylight and Sunlight results can be found in Appendices 11.1 and 11.2 and are summarised in Table 11.4 below.

11.4.2 A total of 934 windows serving 537 rooms within three buildings were assessed for VSC and NSL for daylight, and 151 rooms were assessed for APSH for sunlight within three buildings. Out of the 934 windows assessed for daylight, 434 (47%) meet the BRE guidelines for VSC. For NSL, 390 (73%) of the 537 rooms assessed meet the BRE criteria. For sunlight, 117 (78%) out of the 151 rooms assessed meet the BRE criteria for both Winter and Annual APSH. Overall, this is considered to be a moderate level of compliance given the city centre context of the Site.

Table 11.4: Baseline Daylight and Sunlight results to surrounding sensitive receptors

Address	Total No. windows that meet VSC criteria (>27%)		Total No. of rooms that receive NSL in excess of 80%		Total no. of rooms that meet APSH criteria	
	Pass	Total	Pass	Total	Pass	Total
Castle Wharf	36	455	151	278	71	100
Deansgate Quay	0	62	27	43	19	24
West Tower	398	417	212	216	27	27
Total	434	934	390	537	117	151

11.5 Assessment of Effects

Design Solutions and Assumptions

11.5.1 The proposal has considered daylight and sunlight to surrounding properties throughout the design process. No specific pre-mitigation is required.

Assessment of Effects

Daylight to Surrounding Sensitive Receptors

11.5.2 The full Proposed Development daylight results can be found within Appendices 11.1 and 11.2, and are summarised in Table 11.5 and Table 11.6, below.

11.5.3 A total of 934 windows serving 537 rooms were assessed for daylight within three buildings considered sensitive receptors. The buildings are discussed in more detail, below.



Table 11.5: Summary of VSC Daylight Results

Address	VSC				
	Below BRE Guidelines				
	Total No. of Windows	No. of Windows that meet BRE	20-29.9% Reduction	30-39.9% Reduction	>40% Reduction
Castle Wharf	455	236	63	45	111
Deansgate Quay	62	12	0	0	50
West Tower	417	310	55	52	0
Total	934	558	118	97	161

Table 11.6: Summary of NSL Daylight Results

Address	NSL				
	Below BRE Guidelines				
	Total No. of Rooms	No. of Rooms That Meet BRE	20-29.9% Reduction	30-39.9% Reduction	>40% Reduction
Castle Wharf	278	124	67	45	40
Deansgate Quay	43	14	2	0	27
West Tower	216	169	27	18	2
Total	537	309	96	63	69

Castle Wharf

11.5.4 A total of 455 windows serving 278 rooms were assessed for daylight within this property. For VSC, 236 (52%) of the 455 windows assessed will meet the BRE criteria. For NSL, 126 (45%) of the 278 rooms assessed will meet the BRE criteria.

11.5.5 Only 8% of windows and 54% of rooms comply with the VSC and NSL daylight targets in the baseline scenario, so there are low baseline levels. This means that only relatively small changes in the daylight levels represent large proportional changes. This is evidenced by the fact that the average baseline VSC level with is 17.0%, and the average level with the proposed development built out is 13.7%. 116 (50%) windows and 108 (71%) rooms which do not meet the BRE criteria for VSC and NSL daylight serve bedrooms, which are considered to have a lesser requirement for daylight by the BRE as they are not principal habitable rooms and are typically used at night.



11.5.6 It should also be noted that the results are only for the elevations overlooking the proposed development, that have the potential to be affected, and not the other elevations, which will be unaffected by the proposed development. This is a relatively small proportion in context to the entire building.

11.5.7 The sensitivity of the receptor is moderate and the magnitude of adverse impact is minor adverse. As such, the level of effect without mitigation measures in place is minor adverse, which is Not Significant.

Deansgate Quay

11.5.8 A total of 62 windows serving 43 rooms were assessed for daylight within this property. For VSC, 12 (20%) of the 62 windows assessed will meet the BRE criteria. For NSL, 14 (33%) of the 43 rooms assessed will meet the BRE criteria. 19 of the windows/rooms which do not meet the BRE criteria for VSC and NSL daylight are bedrooms. Bedrooms are considered to have a lesser requirement for daylight by the BRE.

11.5.9 It is well established that the published targets within the BRE Guide are based on low rise, suburban development. The NPPG – Making Efficient Use of Land published on 29th November 2016, updated 1st October 2019, Paragraph 007 Reference ID: 66-007-20190722 states:

“All developments should maintain acceptable living standards. What this means in practice, in relation to assessing appropriate levels of sunlight and daylight, will depend to some extent on the context for the development as well as its detailed design. For example, in areas of high-density historic buildings, or city centre locations where tall modern buildings predominate, lower daylight and sunlight levels at some windows may be unavoidable if new developments are to be in keeping with the general form of their surroundings.”

11.5.10 This is a key point to consider in respect of the Proposed Development and its impact on surrounding properties, particularly as it is situated in Manchester City Centre. The Manchester Core Strategy 2012-2027 sets out development principles for the city centre in Policy CC 6 (p60), which states the following:

“City Centre development will generally be high-density. It is a location where land should be used to its maximum efficiency. The appropriate scale, massing and height of development in the City Centre will significantly exceed what is appropriate elsewhere in the City.”



- 11.5.11 The area has a greater emerging density and an expectation for high rise, dense urban development than at the time the surrounding residential buildings were constructed. Since this time, the Great Jackson Street Development Framework has been endorsed, which has resulted in several tall buildings being erected in the locality, including a previously approved 13-storey application on the development site. For the Proposed Development to relate better to the density of the emerging context, and to meet the expectations of Policy CC 6, deviations on the published BRE targets are inevitable.
- 11.5.12 This is also acknowledged in the BRE Guide, where it states that the levels of daylight and sunlight will be different in these locations to low rise, suburban development. It would be unrealistic for the surrounding residential properties to expect to maintain similar levels of daylight and sunlight as those currently experienced, if the Proposed Development is to meet the requirements of the Manchester Core Strategy and Great Jackson Street Development Framework.
- 11.5.13 The emerging density surrounding the development site is pertinent when reviewing the results to Deansgate Quay in context. The progression of the Great Jackson Street Framework and the erection of tall buildings (e.g. West Tower and Castle Wharf) in close proximity to the Site have resulted in a cumulative reduction of daylight to Deansgate Quay. Prior to West Tower being built, the average retained VSC levels to the windows in Deansgate Quay overlooking the Proposed Development site were 25.75%. In the baseline scenario, which includes Castle Wharf and Deansgate Square, the averaged retained VSC levels have reduced to 14.94%. Cumulatively, these schemes have substantially reduced existing levels of daylight to Deansgate Quay and have placed a greater burden on the Site to maintain these.
- 11.5.14 Given the low baseline figures, it means that only relatively small changes in the daylight levels represent large proportional changes. This is evidenced when reviewing the retained VSC levels of the previous planning application (115591/FO/2017) for a 13-storey residential building on the site against the proposed development. Retained VSC levels to Deansgate Quay with the previous consent and both the West Tower and Castle Wharf developments in place are approximately 9%, whilst the levels will be 5% with the Proposed Development constructed. It should also be noted that the previous planning application did not include West Tower or Castle Wharf in the baseline scenario as they were not yet consented. Deansgate Quay received greater levels of daylight at that time and was, therefore, less sensitive to changes in light brought about by the previous consent. Furthermore, it is evident that, were the previous



consent to be constructed now, the retained VSC levels between this scheme and the Proposed Development would be comparable.

- 11.5.15 The impacts of the Castle Wharf development on surrounding sensitive receptors is also comparable to the Proposed Development. At the time Castle Wharf was consented, it had a similar impact on the scheme adjacent to it, known as Castlegate. 2/30 (6%) of windows on the elevation of Castlegate facing the Castle Wharf site would meet the VSC daylight criteria, and the average retained VSC levels would be reduced from 27.16% to 10.24%, a 17% VSC reduction. With the Proposed Development in place, the retained VSC levels are reduced from 14.94% to 5.05%, a 10% VSC reduction.
- 11.5.16 The design of Deansgate Quay should also be considered. It is built close to its site boundary, with several deep, single aspect rooms facing the Proposed Development site. A number are recessed and positioned beneath balconies which makes it difficult for daylight to penetrate living spaces and places. The BRE discusses the neighbourliness of surrounding properties, stating that *“another important issue is whether the existing building is itself a good neighbour, standing a reasonable distance from the boundary and taking no more than its fair share of light”*. In this instance, Deansgate South is not considered a ‘good neighbour’ given its design.
- 11.5.17 It should also be noted that the results are only for the elevations overlooking the Proposed Development, that have the potential to be affected, and not the other elevations, which will be unaffected by the Proposed Development. This represents approximately 20% of windows to the entire building, which is a relatively small proportion.
- 11.5.18 In summary, the magnitude of impacts to Deansgate Quay is considered to be lower for the following reasons:
- The emerging density around the site, and erection of West Tower and Castle Wharf, have resulted in a cumulative reduction in daylight to Deansgate South;
 - Were the previous consent to be constructed now, using these developments in the baseline, the retained VSC levels to Deansgate South would be comparable to those with the Proposed Development in place;
 - The Castle Wharf development had a greater impact on retained VSC levels to the adjacent Castlegate development at the time it was consented than the Proposed Development will have on Deansgate Quay;



- Deansgate Quay is built up to the site boundary with deep, single aspect rooms facing the development site, thus making it unneighbourly; and
- Only the windows facing the Proposed Development site have been assessed, which is a small proportion to the property overall.

11.5.19 The sensitivity of the receptor is moderate and the magnitude of adverse impact is moderate adverse. As such, the level of effect without mitigation measures in place is moderate adverse, which is Not Significant.

West Tower

11.5.20 A total of 417 windows serving 216 rooms were assessed for daylight within this property. For VSC, 310 (74%) of the 417 windows assessed will meet the BRE criteria. For NSL, 169 (78%) of the 216 rooms assessed will meet the BRE criteria. For VSC daylight, 70 (65%) of windows which do not meet the criteria serve bedrooms, which are considered by the BRE to have a lesser requirement for daylight.

11.5.21 The remaining windows all serve living kitchen diners. Paragraph 2.2.6 of the BRE Guide states that *“if a room has two or more windows of equal size, the mean of their VSCs can be taken”*. All windows serving living kitchen diners which do not meet the criteria have alternative windows serving the same room. As such, whilst some windows do not meet the BRE target, when the mean VSC is calculated to the rooms, all living kitchen diners to West Tower meet the BRE target.

11.5.22 For NSL, all of the rooms which do not meet the BRE criteria serve bedrooms, which are considered to have a lesser requirement for daylight. All the living kitchen diners assessed in West Tower meet the NSL criteria.

11.5.23 The sensitivity of the receptor is moderate and the magnitude of adverse impact is minor adverse. As such, the level of effect without mitigation measures in place is minor adverse, which is Not Significant.

Sunlight to Surrounding Sensitive Receptors

11.5.24 The full Proposed Development sunlight results can be found within Appendices 11.1 and 11.2 and are summarised in Table 11.7 and Table 11.8, below.

11.5.25 A total of 279 windows serving 151 rooms were assessed for sunlight within three buildings considered sensitive receptors. The buildings are discussed in more detail below.



Table 11.7: Summary of Annual Sunlight Results

Address	APSH				
	Below threshold for Total Annual PSH				
	Total No. of Rooms	No. of Rooms That Meet BRE	20-30% Reduction	30-40% Reduction	>40% Reduction
Castle Wharf	100	70	5	2	6
Deansgate Quay	24	7	0	0	17
West Tower	27	27	0	0	0
Total	151	104	5	2	23

Table 11.8: Summary of Winter Sunlight Results

Address	APSH				
	Below Threshold for Winter PSH				
	Total No. of Rooms	No. of Rooms That Meet BRE	20-30% Reduction	30-40% Reduction	>40% Reduction
Castle Wharf	100	70	0	0	28
Deansgate Quay	24	7	0	0	15
West Tower	27	27	0	0	0
Total	151	104	0	0	43

Castle Wharf

11.5.26 100 rooms were assessed for sunlight within this property. 70 (70%) of the 100 rooms assessed will meet the BRE criteria.

11.5.27 Five of the rooms which do not meet the APSH criteria fall marginally short of the target and are reduced by 20-30%. Furthermore, 17 rooms meet the annual APSH targets, but not winter, which is considered minor in significance given the low sensitivity of the building.

11.5.28 The sensitivity of the receptor is moderate and the magnitude of adverse impact is minor adverse. As such, the level of effect without mitigation measures in place is minor adverse, which is Not Significant.

Deansgate Quay

11.5.29 A total of 24 rooms were assessed for sunlight within this property. 7 (30%) of the 24 rooms assessed will meet the BRE criteria.



- 11.5.30 The design of Deansgate Quay is such that it is built close to the Proposed Development site boundary, with several single aspect rooms facing the Site. This places a high burden on the development site to maintain existing levels. Furthermore, the existing levels are already low, with just five rooms meeting the APSH target criteria in the baseline scenario.
- 11.5.31 The cumulative impact of the emerging density and height in the immediate locality has resulted in lower sunlight levels in the baseline scenario, thus increasing the property's sensitivity to change. This is evidenced by the fact that, were the previous consent to be constructed now with both the West Tower and Castle Wharf developments in place, 8/24 (33%) of rooms would meet the APSH criteria.
- 11.5.32 In order for the site to meet the requirements of the Manchester Core Strategy and Great Jackson Street Development Framework, some deviations from the APSH criteria are inevitable, particularly in a city centre location where the expectation for sunlight is lower than a suburban scenario upon which the BRE targets are predicated.
- 11.5.33 The sensitivity of the receptor is moderate and the magnitude of adverse impact is moderate adverse. As such, the level of effect without mitigation measures in place is moderate adverse, which is Not Significant.

West Tower

- 11.5.34 A total of 27 rooms were assessed for sunlight within this property. For VSC, 27 (100%) of the 27 rooms assessed will meet the BRE criteria.
- 11.5.35 The sensitivity of the receptor is moderate and the magnitude of adverse impact is negligible. As such, the level of effect without mitigation measures in place is negligible, which is Not Significant.

11.6 Mitigation

Demolition and Construction

- 11.6.1 The potential daylight and sunlight effects during demolition are negligible to the surrounding sensitive receptors.
- 11.6.2 The potential daylight and sunlight effects during construction would gradually increase in magnitude as the massing of the Proposed Development increases. When considering the construction of the Proposed Development, the effects will be noticeable, but such effects will be less than that of the completed Proposed Development. Therefore, no mitigation is considered necessary.



Completed Development

11.6.3 The design of the Proposed Development has evolved to minimise the impact on the existing surrounding properties' daylight and sunlight.

11.6.4 Whilst the BRE benchmarks are widely used, these criteria should not be seen as an instrument of planning policy. As stated in the BRE Guide:

'.....The guide is intended for building designers and their clients, consultants and planning officials. The advice given here is not mandatory and the guide should not be seen as an instrument of planning policy; its aim is to help rather than constrain the designer. Although it gives numerical guidelines, these should be interpreted flexibly since natural lighting is only one of many factors in sit layout design. In special circumstances the developer or planning authority may wish to use different target values. For example, in a historic city centre, or in an area with modern high rise buildings, a higher degree of obstruction may be unavoidable if new developments are to match the height and proportions of existing buildings.....'

11.6.5 It is important to set some additional background to the BRE Guide, so that the results of the assessment can be fully considered.

11.6.6 The Guide aims to provide advice on site layout planning to achieve good daylight and sunlight. The advice given in the Guide is not mandatory and it should not be seen as an instrument of planning policy; its aim is to help rather than constrain the designer. Although it gives numerical guidelines, these should be interpreted flexibly since natural lighting is only one of many factors in site layout and design.

11.6.7 The Guide also recognises that in an urban area, with modern high rise buildings, a higher degree of obstruction may be unavoidable, if new developments are to match the height and proportions of other existing surrounding buildings.

11.6.8 For these reasons, the surrounding receptors may have a lower sensitivity to change in an urban location, than those located in suburban, less dense areas. Consequently, given the context of the Site and when considering relevant policy and guidance, no mitigation is considered necessary.

11.7 Residual Effects

11.7.1 As no mitigation measures are considered necessary the residual effect on daylight and sunlight is negligible to moderate adverse in significance, as summarised in Table



11.9 below. In accordance with section 11.3, these effects are considered to be **Not Significant**.

Table 11.9: Residual Effects Summary			
Description of Effect	Initial Effect	Mitigation	Residual Effect
Construction			
Daylight	Negligible	None required	Negligible
Sunlight	Negligible	None required	Negligible
Completed Development			
Daylight	Negligible – Moderate Adverse	None required	Minor Adverse – Moderate Adverse
Sunlight	Negligible – Moderate Adverse	None required	Negligible – Moderate Adverse

11.8 Assessment of Cumulative Effects

11.8.1 Consented schemes within the area around the Proposed Development have been included in the assessment and the results are presented in the discussion of the sensitive receptors.

11.9 Summary

11.9.1 An assessment has been undertaken to establish the likely significant effects of the Proposed Development upon the amount of daylight and sunlight received by properties adjacent to the Site.

11.9.2 To assess the surrounding existing properties, the BRE Guidelines provide two main methods for assessing daylight: VSC and NSL. The VSC method measures the amount of light available on a vertical wall or window following the introduction of barriers such as buildings. The NSL method is a measure of the distribution of daylight at the 'working plane' within a room (i.e. a horizontal 'desktop' plane of 0.85 m in height). The NSL divides those areas of working plane in a room which receive direct sky light through the windows from those areas of the working plane which cannot. Where all of the windows meet the VSC and all of the rooms meet the NSL criteria within a property the effect is considered to be negligible.

11.9.3 For the assessment of sunlight, the approach considers the APSH for a reference point on a window (i.e. if a window point can receive at least 25% APSH, then the room should still receive enough sunlight). Windows are checked to see if they are facing



90° due south, with the emphasis on main living rooms and other rooms such as the kitchen and bedrooms being less important.

11.9.4 Three buildings within the surrounding area were identified as having the potential to be impacted on by the proposed development. A total of 934 windows serving 537 rooms within the development have been assessed for daylight and 151 rooms have been assessed for sunlight.

11.9.5 In the Baseline Scenario, out of the 934 windows assessed for daylight, 434 (47%) meet the BRE guidelines for VSC. 390 (73%) of the 537 rooms assessed meet the BRE criteria for NSL daylight. For sunlight, 117 (78%) out of the 151 rooms assessed meet the BRE criteria for both Winter and Annual APSH.

11.9.6 In the Proposed Scenario, with regard to daylight, out of the 934 windows assessed for daylight, 558 (60%) meet the BRE guidelines for VSC. 309 (58%) of the 537 rooms assessed meet the BRE criteria for NSL. The level of residual effects assessed are 'Minor' Adverse to 'Moderate' Adverse and are, therefore, considered to be **Not Significant**. Given the context of the Site, and as discussed in section 11.6, no mitigation is considered necessary.

11.9.7 For sunlight, 104 (69%) of the 151 rooms assessed meet the BRE criteria for both Winter and Annual PSH. The level of residual effects assessed are 'Negligible' to 'Minor' Adverse and are, therefore, considered to be **Not Significant**. Given the context of the Site, and as discussed in section 11.6, no mitigation is considered necessary.



12 WIND MICROCLIMATE

12.1 Introduction

12.1.1 This Chapter reports the likely significant effects of the Proposed Development in terms of wind microclimate in the context of the Site and surrounding area. In particular it considers the likely significant effects of changes in wind microclimate on pedestrian activities within and around the Proposed Development.

12.1.2 This Chapter (and its associated figures and appendices) is not intended to be read as a standalone assessment and reference should be made to the front end of this ES (Chapters 1 – 6), as well as the final chapter, ‘Summary of Residual and Cumulative Effects’ (Chapter 14).

12.2 Legislation, Policy and Guidance

12.2.1 The relevant legislation, policy and guidance are listed below.

Legislative Framework

12.2.2 There is no legislation relating to the impacts on wind microclimate.

Planning Policy

12.2.3 The applicable planning policy is summarised as follows:

- The National Planning Policy Framework (NPPF) was published in March 2012 and revised in February 2019 and establishes a presumption in favour of sustainable development. There are no direct policies relating to wind microclimate within the NPPF.
- Local guidance comes in the form of the Manchester Core Strategy 2012 to 2027. Policy EN 2 relates to tall buildings and states that *“By their very size tall buildings can have a significant impact on the local environment and its micro-climate. It is therefore expected that this impact be modelled and that submissions for tall buildings also include appropriate measures to create an attractive, pedestrian friendly local environment.”*. Paragraph 12.14 of the strategy goes on to say that *“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

12.2.4 The applicable guidance is summarised as follows:

- Wind Microclimate Guidelines for Developments in the City of London – City of London Corporation and RWDI.

12.3 Assessment Methodology and Significance Criteria

Scope of the Assessment

12.3.1 This assessment considers the likely significant effects of changes in wind microclimate on pedestrian activities within and around the Proposed Development.

12.3.2 The scope of this assessment has been established through the EIA Scoping process, as set out in Chapter 2.

Extent of the Study Area

12.3.3 The wind model covers an area that extends to 650m radius from the Site boundary in order to capture all upstream and downstream wind effects. The full computational domain is shown in Figure 12.1 below.



Figure 12.1: Computation Domain



Assessment Methodology

- 12.3.4 To identify the likely effects of the Proposed Development on the pedestrian level wind environment, a 3D Computational Fluid Dynamic (CFD) model of the Proposed Development and surrounding wider area has been created. This section describes the methodology for the creation of this model and the inputs used.
- 12.3.5 Wind directions always indicate the direction that the wind blows from. For instance, a wind direction of 90 degrees (°) denotes a wind blowing from the east.
- 12.3.6 Simulations of the microclimate have been conducted using OpenFOAM CFD software. CFD simulation of likely wind patterns requires the generation of a three-dimensional computer model of the site and surrounding buildings.
- 12.3.7 A 3D model of the Proposed Development and terrain was provided by Gordan Ingram Associates (GIA).
- 12.3.8 Porous structures and vegetation have been excluded from the safety and comfort modelling. However, these will be discussed as part of any mitigation strategy should one be required.
- 12.3.9 OpenFOAM CFD software has been used to obtain a solution to the fundamental equations of fluid motion as applied to each cell in the model through intensely computational numerical processing. A computational 'mesh' has been created to represent the geometry by dividing the domain into a large number of cell volumes. During the simulation, the values of each variable are determined in each cell of the mesh and so a comprehensive assessment of velocity and scalar variation within the calculation domain is obtained.
- 12.3.10 The dependent variables are as follows:
- **Velocities in the three co-ordinate directions (X, Y, Z);**
 - **Pressure (P);**
 - **Turbulence Kinetic Energy (k);**
 - **Turbulence Dissipation Rate (ϵ); and**
 - **Turbulence Specific Dissipation (ω).**
- 12.3.11 To improve the resolution of the results, the mesh has been concentrated in the areas of most interest (at pedestrian level around the Proposed Development) and around



any significant small-scale flow features. This ensures greater accuracy of the variables under investigation.

12.3.12 The modelling domain is cuboid with inlet and outlet boundary conditions specified for the relevant portions of the domain for the wind direction being modelled.

12.3.13 The inlet boundary condition is adjusted for each wind direction to account for the threshold wind speed for each wind direction at 20m above ground level.

12.3.14 The atmospheric boundary layer (ABL) is also approximated for each wind direction. The ABL is defined as the part of the atmosphere that is directly influenced by the earth's surface. Surface heating, surface roughness, and especially surface friction are the main actors on the ABL mechanism. The main consequence of this is that the earth continuously extracts momentum from the wind and the resulting flow is turbulent.

12.3.15 The effect of the ABL is approximated within OpenFOAM using the following equation:

$$U = \left[\frac{U^*}{K} \right] * \ln \left[\frac{z - z_{Ground} + Z_0}{Z_0} \right]$$

12.3.16 Where:

- **U^* is the frictional velocity;**
- **K is Karman's Constant;**
- **z_0 is the surface roughness length;**
- **z is the vertical coordinate; and**
- **z_{Ground} is the minimum coordinate value in z-direction.**

12.3.17 No-slip wall functions for wind speed have been applied to both the terrain and building surfaces as part of the modelling process. Porous structures and vegetation have been excluded from the safety and comfort modelling. However, these will be discussed as part of any mitigation strategy should one be required.

Interpretation

12.3.18 The methods used to interpret the results of the modelling, detailed above, and to forecast potential effects on the environment are detailed below.

12.3.19 The receptors considered within this assessment are pedestrians carrying out their usual activities within the area of wind influence of the Proposed Development. These activities are broken down into categories as per the Lawson Criteria.



12.3.20 The Lawson Criteria provide threshold wind speeds which should not be exceeded 95% of the time for given pedestrian activities to be carried out comfortably. This assessment uses the London Docklands Development Corporation (LDDC) version of the criteria, as outlined in the City of London planning advice note, which are reproduced in Table 12.1 and 12.2, below.

Table 12-1: Lawsons LDDC Criteria - Comfort		
Comfort Category	Threshold (m/s)	Description
Frequent Sitting	2.5	Acceptable for frequent outdoor sitting use, e.g. restaurant, cafe
Occasional Sitting	4	Acceptable for occasional outdoor seating, e.g. general public outdoor spaces, balconies and terraces intended for occasional use, etc.
Standing	6	Acceptable for entrances, bus stops, covered walkways or passageways beneath buildings
Walking	8	Acceptable for external pavements, walkways
Uncomfortable	>8	Not comfortable for regular pedestrian access

12.3.21 In addition, a safety threshold is set for the wind speed exceeded twice per year or 0.022% of the time from any wind direction.

Table 12-2: Lawsons LDDC Criteria - Safety		
Comfort Category	Threshold (m/s)	Description
Unsafe	>15	Winds above this threshold will pose safety risks, particularly for more vulnerable pedestrians (elderly, cyclists, etc.)

Significance Criteria

12.3.22 The significance criteria to measure the impact on pedestrians from wind microclimate are presented below in Table 12.3.

12.3.23 Effects that are classified as moderate or above are considered to be **significant**. Effects classified as below moderate are considered to be **not significant**.



Table 12.3: Significance Criteria		
Effect	Trigger	Mitigation Required
Very Large	Conditions are 'unsafe' or 'uncomfortable'	Yes
Large	Conditions are 3 categories windier than desired	Yes
Moderate	Conditions are 2 categories windier than desired	Yes
Slight	Conditions are 1 category windier than desired	No
Neutral	Conditions are calmer than required for the intended pedestrian use (by at least one comfort category).	No

Limitations

12.3.24 In common with other forms of modelling, such as the use of wind tunnels, there are various limitations that can affect the accuracy of modelling carried out in support of this assessment.

- CFD modelling is a mathematical approximation of real-world conditions and is not to be considered an exact representation of conditions on site at any specific point in time. Instead, it uses time-averaged data that gives a good understanding of flow across the calculation domain under commonly occurring conditions. It is an excellent tool for assessing likely issues in relation to pedestrian comfort and safety as it balances accuracy with visualisation tools;
- The CFD simulation is steady state and does not explicitly quantify short-term gusts;
- Certain landscaping features, including porous structures under 8m in height, have not been included within the 3D model;
- The consented buildings in the area have been included in the 3D model, however, if their designs were to change this could impact upon the wind speeds at the application site;
- The 3D model does not include those buildings currently in planning that have not yet been consented; and
- Analysis is based on virtual met mast wind data, provided by the Met Office and covers a 30-year period. It is assumed to be representative of the wind conditions present at the application site. Future increases in wind speed, and gusting and increased volatility in weather patterns as a result of climate change or other unforeseen factors are not accounted for in the modelling.



12.4 Baseline Conditions

12.4.1 The Site is currently composed of an area of brownfield land. There are no known problems arising from strong wind conditions affecting the public. Further information regarding the current site conditions are set out in Chapter 3.

Sensitive Receptors

12.4.2 The receptors within a wind microclimate assessment are the pedestrians using the public realm and outdoor facilities within and surrounding the Proposed Development.

12.5 Assessment of Effects

Design Solutions and Assumptions

12.5.1 Within and immediately surrounding the Proposed Development area there are multiple locations where there are high wind speeds present. In some cases, embedded mitigation, in the form of trees, will reduce the wind speeds experienced. Landscaping has not been included in the CFD model as it is difficult to accurately quantify the effect of landscaping features, such as trees. However, it is acknowledged that trees will have an overall effect in lowering wind speeds within the pedestrian environment. As landscaping features have not been included with the CFD model, expert judgement has been used to establish how landscaping will affect wind speeds.

Assessment of Effects

12.5.2 This section highlights some of the exceedances identified at the Proposed Development and establishes their significance criteria.

12.5.3 All directional results for both safety and comfort modelling are contained with Appendix 12.1 and 12.2.

Safety

Bridgewater Viaduct (A56)

12.5.4 Analysis of the CFD model indicates the production of a funnelling effect of wind along the A56 Bridgewater viaduct, generating areas of high wind speed between the Proposed Development and the development to the north of the A56. A number of safety criteria exceedances are observed in this area.

12.5.5 Direction 20° indicates a very small area of safety exceedance located on the north side of the A56 as seen in Figures 12.2 and 12.3.

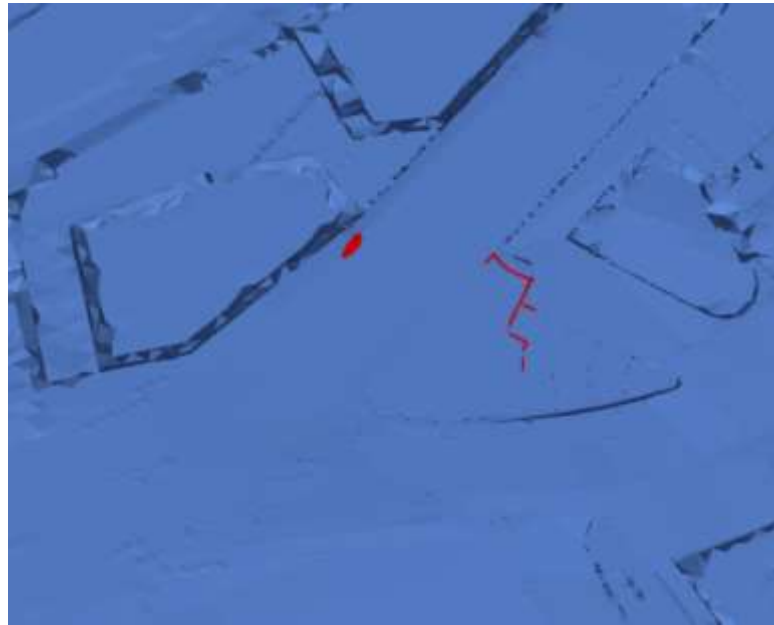


Figure 12.2: Safety 20°

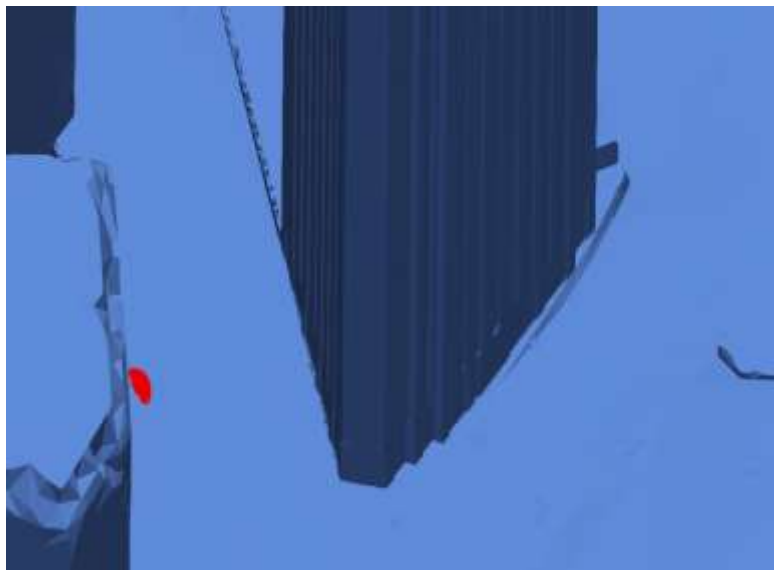


Figure 12.3 – Safety 20°

12.5.6 Direction 30° identifies an area of safety exceedance located directly to the north of the Proposed Development on the south side of the A56 as seen in Figure 12.4 and 12.5. A large area of this exceedance is located on the main carriageway itself, however may also prove an issue for cyclists and pedestrians as the south side pavement is intersected.

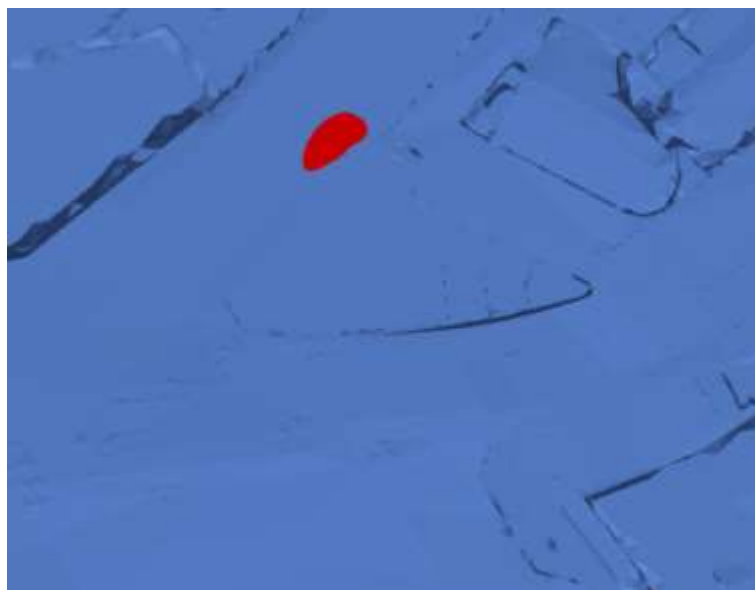


Figure 12.4 – Safety 30°

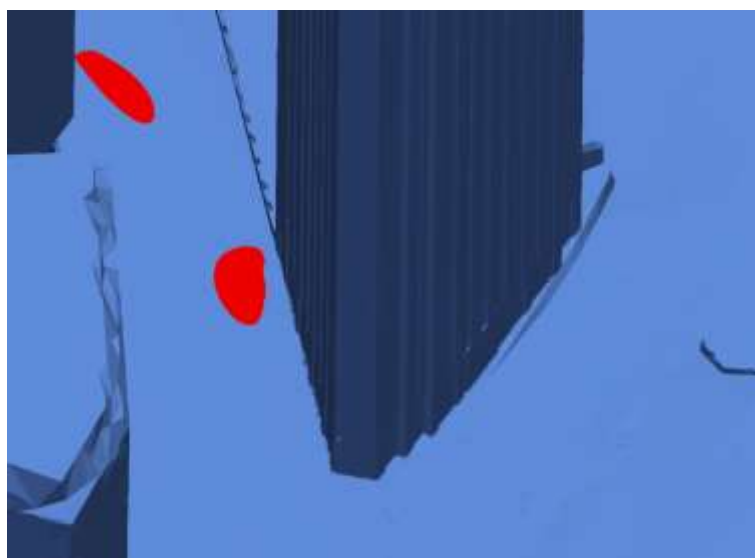


Figure 12.5 – Safety 30°

12.5.7 Wind from 70° indicates a large exceedance along the A56 to the northwest of the development as seen in Figure 12.6 and 12.7. This exceedance is largely located within the central area of the A56 carriageway, however may present an issue for cyclists.

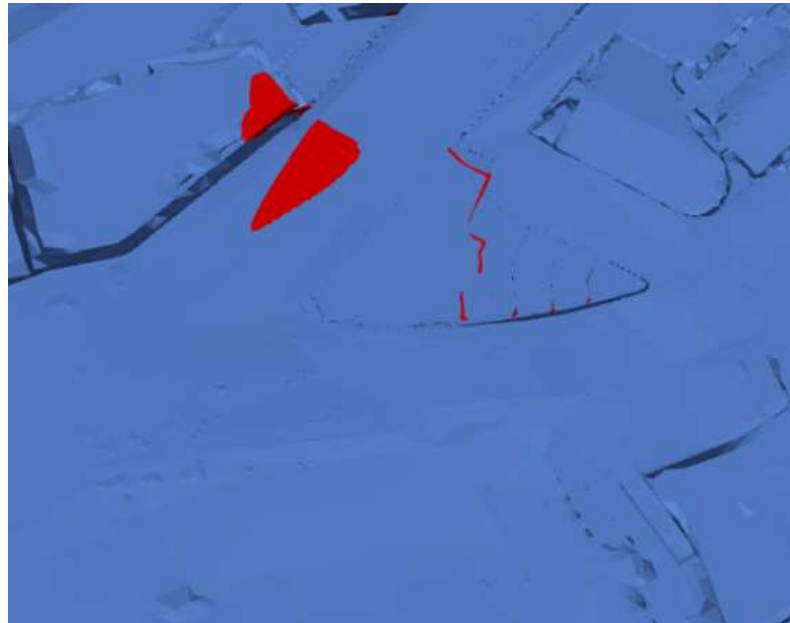


Figure 12.6 – Safety 70°

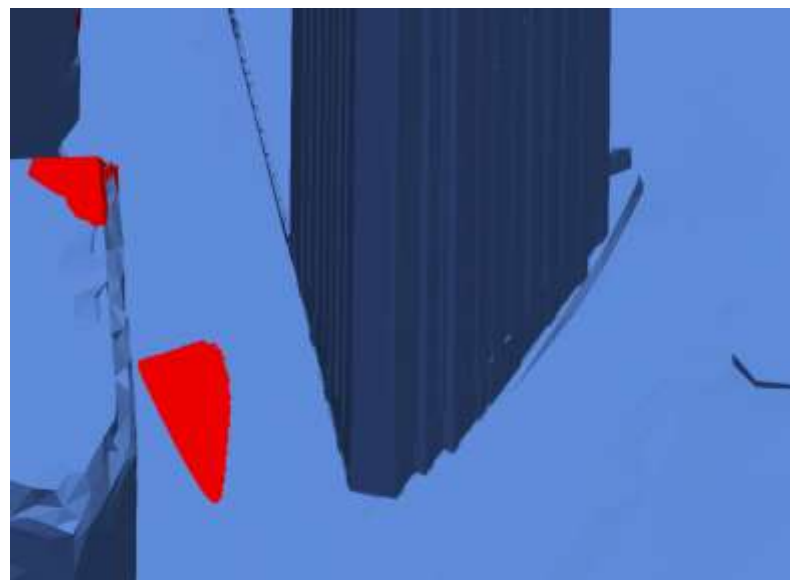


Figure 12.7 – Safety 70°

12.5.8 The significance of the effect in these areas are **Very Large** and therefore **Significant**. Mitigation is required.

Rooftop and External Terraces

12.5.9 No safety exceedances were observed on the main areas of the rooftop and the three external terraces. All exceedances in these areas were identified along the outsides of the 1.5m high parapet walls indicating that the parapet walls are currently mitigating against any safety exceedances within the main rooftop and external terrace areas.

12.5.10 The significance of the effect in these areas are **Neutral** and therefore **Not Significant**. Mitigation is not required.

12.5.11 No other safety exceedances were identified within the Proposed Development and immediate surrounding area.

Comfort

Bridgewater Viaduct (A56)

12.5.12 Due to a funnelling effect between the existing buildings and the Proposed Development, wind directions from 20°, 30°, 70°, 80°, 180°, 190°, 200°, 220°, 210°, 230°, 240° and 270° show increased wind speeds along the A56 Bridgewater Viaduct immediately to the north of the Proposed Development which could have an impact on pedestrians in the area as seen in Figures 12.8 and 12.9. Wind speeds in the aforementioned directions are approximately 8-10m/s with a small area measuring approximately 11-12m/s in direction 260°. Therefore, in these directions wind speeds fall within the comfort criteria of Uncomfortable, meaning that these wind speeds would not be acceptable for the intended pedestrian use of walking for a large part of pavements in this area.

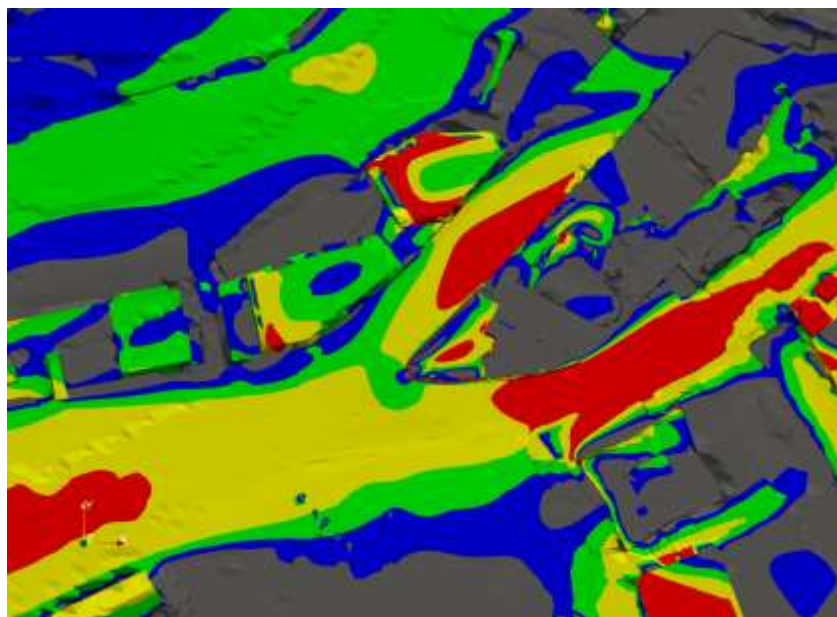


Figure 12.8 – Comfort 260°

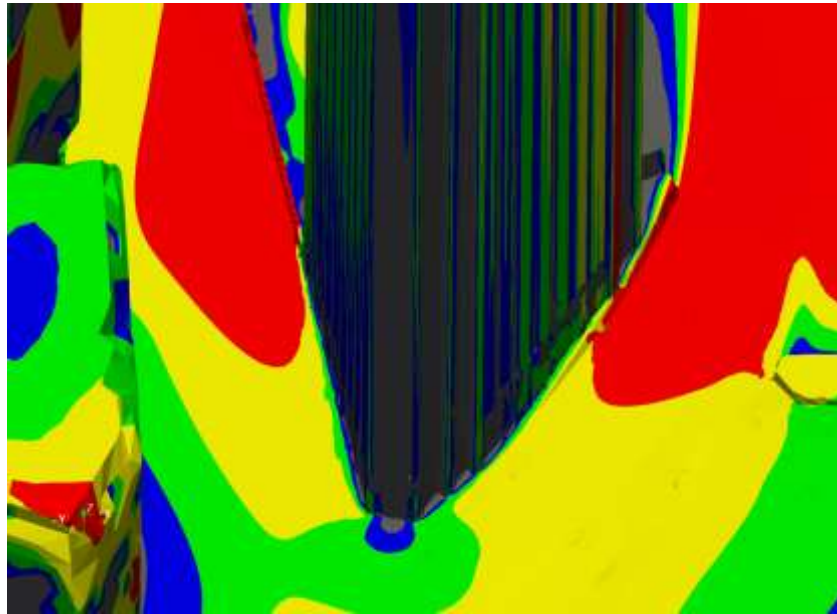


Figure 12.9 – Comfort 260°

12.5.13 The significance of the effect in these areas are **Very Large** and therefore **Significant**. Mitigation is required.

Deansgate Road

12.5.14 Due to a funnelling effect between the Proposed Development and the Deansgate Square development to the south, directions 240°, 260° and 270° indicate wind speeds of >8m/s within the Deansgate Road area immediately to the south of the Proposed Development.

12.5.15 Closer analysis of directions 240°, 260° and 270° show a wind speeds of approximately 8-10m/s, 8-11m/s and 8-11m/s respectively and therefore would be identified as being uncomfortable for the intended pedestrian use of walking.

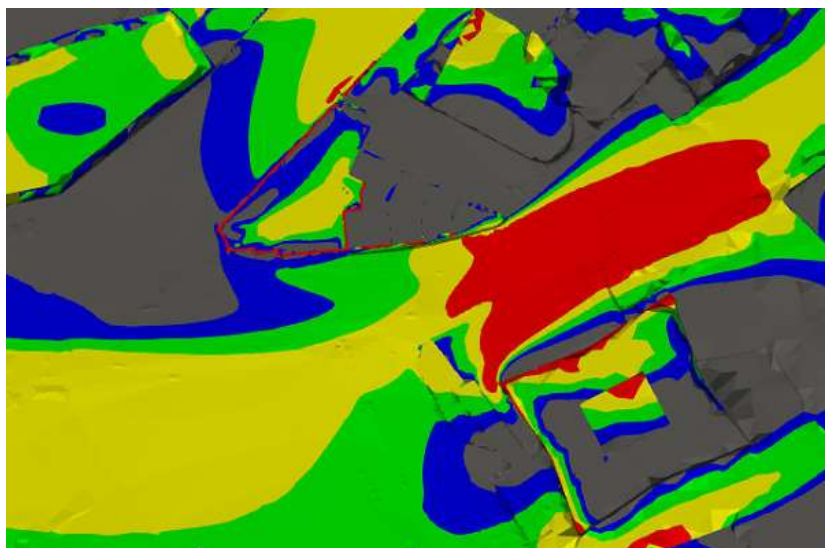


Figure 12.10 – Comfort 270°

- 12.5.16 The significance of the effect in these areas is identified as **Very Large** and therefore **Significant**. Mitigation is required.

External Roof Terraces

- 12.5.17 In general the three external roof terraces located on the 22nd, 24th and 26th floors experience comfort levels of Frequent Sitting criteria (0-2.5m/s), Occasional Sitting (2.5-4m/s) and Standing criteria (4-6m/s) which are acceptable for the intended pedestrian use. In directions 70° and 80°, very small, isolated areas of Walking criteria (6-8m/s) are identified along the far southern edges of the terraces on the 22nd and 24th floors and within the centre of terrace on the 26th floor.
- 12.5.18 The three external terrace areas in general will experience comfort levels suitable for their intended use, however as there are very small, isolated areas of one category windier than desired, the significance of the effect is identified as **Slight** and therefore **Not Significant**. Mitigation is not required.
- 12.5.19 It is understood that the rooftop area of the Proposed Development will not be used for public access. The rooftop area does however, contain equipment such as generators, condensers, PV arrays and smoke vent fans which will all have to be maintained. The necessary health and safety measures should be implemented for any maintenance person working on the rooftop. This may include not carrying out maintenance works on the rooftop during periods of high winds.



Main Entrance

- 12.5.20 The main entrance located within the west of the Proposed Development is generally identified as being within acceptable comfort levels for main entrances at 0-6m/s. The comfort level for the main entrance is exceeded however, from direction 230° where speeds increase to Walking levels (6-8m/s). In general, for directions 180° to 240°, the funnelling effect generated along the A56 Bridgewater Viaduct creates a zone immediately to the north of the main entrance where comfort criteria levels are at Strolling criteria speeds.
- 12.5.21 As a small number of directions give a comfort category one windier than desired, the significance of the effect in this area is identified as **Slight** and therefore **Not Significant**. Mitigation is not required.

Car Park

- 12.5.22 In the car park are immediately to the east of the Proposed Development, wind speeds 0-6m/s were generally recorded meaning the area is suitable for its intended pedestrian use. Direction 70° however, indicated an area of Walking criteria (6-8m/s) at the entrance to the car park, which is slightly windier than desired.
- 12.5.23 As the comfort category for direction 70° showed gave a comfort category of one more than desired, the significance of the effect in these areas are **Slight** and therefore **Not Significant**. Mitigation is not required.

12.6 Mitigation

Bridgewater Viaduct (A56)

- 12.6.1 Embedded mitigation is included along the pavement immediately to the north of the Proposed Development in the form of tree planting with four specifically positioned trees. Wind Microclimate Guidelines for Developments in the City of London, which has been used as guidance for this assessment, states it is prudent to ignore landscape elements that are smaller than 8m in height and therefore the effect that these trees will have on the wind microclimate cannot be modelled. From our experience in previous Wind Microclimate assessments we anticipate that the planting of trees in this area will allow the break-up of wind flow channelled between the Proposed Development and the development to the north of the A56. This will therefore reduce wind speeds to safer and more comfortable levels for both pedestrians and cyclists. It is predicted that with the embedded mitigation in place, isolated areas of safety exceedance will be lowered to speeds of less than 15m/s which will eliminate these



exceedance areas. It is also predicted that pedestrian areas which were identified as uncomfortable ($>8\text{m/s}$), will, with the embedded mitigation implemented, be reduced to wind speeds of $<8\text{m/s}$ and will therefor fall within the comfort categories, which are acceptable for the pedestrian uses throughout this area.

Deansgate Road

- 12.6.2 Mitigation for higher wind speeds than desired is already present in this area in the form of two trees located on the pavement immediately to the south of the Proposed Development and a number of trees, vegetation and a small porous screen located immediately to the north of the Deansgate Square development. The Proposed Development will also include three additional trees which will be planted along the pavement immediately to the south, up to the layby area. Again, the Wind Microclimate Guidelines for Developments in the City of London, which have been used as guidance for this assessment states it is prudent to ignore landscape elements that are smaller the 8m in height and therefore the effect that all of the aforementioned landscaping features located in this area, has not been modelled. Based on our experience with similar issues on previous Wind Microclimate assessments, we anticipate that wind speeds within this area will be sufficiently reduced by these combined mitigation factors to more comfortable levels for both pedestrians and cyclists. With the embedded mitigation implemented, it is predicted that pedestrian areas which were identified as uncomfortable ($>8\text{m/s}$), will be reduced to wind speeds of $<8\text{m/s}$ and will therefor fall within comfort categories, which are acceptable for the pedestrian uses throughout this area.
- 12.6.3 The use of trees within both Bridgewater Viaduct (A56) and Deansgate Road as natural wind mitigation measure is based on the fact that the porous nature of trees allow the soft dispersal of high strength winds and therefore reduce the energy and the speed of the wind. The aim is to allow some wind to pass through the area rather than completely block the wind, which could cause potential turbulence on the windward side.
- 12.6.4 The trees planted will have a managed height of 6m and a canopy of between 1.5-3m. Due to their the proximity to both the A56 and Deansgate Road, the trees will be maintained to ensure that tree growth does not represent a hazard to road users. Any tree loss due to disease or damage will be replaced to maintain wind mitigation effectiveness.



12.7 Residual Effects

Bridgewater Viaduct (A56)

12.7.1 Following implementation of the embedded mitigation in the form of tree planting along the pavement directly to the north of the Proposed Development, it is predicted that isolated areas of safety exceedance will be lowered to speeds of less than 15m/s which will eliminate these exceedance areas. It is also predicted that pedestrian areas which were identified as uncomfortable (>8m/s), will be reduced to wind speeds of <8m/s and will therefore fall within comfort categories, which are acceptable for the pedestrian uses within this area. It is anticipated that the significance of effect in this area in terms of both safety and comfort criteria will be **Slight** and therefore **Not Significant**. No additional mitigation measures are required.

Deansgate Road

- 12.7.2 Three trees will be planted along the pavement directly to the south of the Proposed Development as part of the embedded mitigation strategy. The additional trees in combination with trees currently present to the south of the site and the trees, raised vegetation areas and small porous screen located to the north of the Deansgate Square development will act to lower the significance of effect in the Deansgate Road area to **Slight** and therefore **Not Significant**. It is predicted that pedestrian areas which were identified as uncomfortable (>8m/s), will be reduced to wind speeds of <8m/s and will therefore fall within the comfort categories, which are acceptable for the pedestrian uses throughout this area. No additional mitigation measures are required.
- 12.7.3 Whilst successful mitigation will go a long way to reducing the effects of high wind speeds, it can never eliminate the risks completely. If wind speeds increase throughout the lifetime of the development due to climate change it may be that extra mitigation may be needed. Additional mitigation, if required in future, may be required in the form of additional tree planting.
- 12.7.4 There may be still areas where pedestrians are uncomfortable due to wind speeds. If these areas are encountered, wind speed monitoring will be required and these areas may require further mitigation possibly in the form of additional tree planting.

12.8 Assessment of Cumulative Effects

12.8.1 Cumulative developments will have an impact on the wind speeds experienced at the Proposed Development. The key cumulative developments are the development directly to the northwest of the Proposed Development located on the northern side



of the A56 and the Deansgate Square Development located to the south on the southern side of Deansgate Road.

12.8.2 The development to the north of the A56 appears to be creating a funnel with the Proposed Development along the A56 which creates higher wind speeds in this area. The Deansgate Square development appears to be shielding the Proposed Development from winds from the south and southeast, although it is indicated that wind is being funnelled between the Proposed Development and the Deansgate Square development along Deansgate Road particularly from winds from a westerly direction.

12.8.3 The potential cumulative effects have already been considered as part of the main assessment, by including cumulative developments within the modelling domain. The cumulative effects are as set out in the residual effects section.

12.9 Summary

12.9.1 Two areas within the immediate vicinity of the Proposed Development were identified as having significant effects. These include the area along Bridgewater Viaduct (A56) to the north and the Deansgate area to the south of the Proposed Development.

12.9.2 Following detailed CFD wind microclimate modelling a number of safety exceedances and a comfort exceedance were identified along Bridgewater Viaduct (A56) as a result of the funnelling of wind between the Proposed Development and the development to the north of the A56. The significance of this effect was seen as **Very Large (Significant)** and as a result, mitigation will be required. Mitigation for this effect has already been included within the Proposed Development design in the form of tree planting along the pavement immediately to the north of the Proposed Development. We anticipate that these specifically positioned trees will allow the break-up of wind flowing through this area to safer and more comfortable levels for both pedestrians and cyclists. It is anticipated that the mitigation in this area will reduce the significance of effect to **Slight (Not Significant)**.

12.9.3 An area of Deansgate Road was identified as having a wind speed of 8-11m/s for directions from 240°, 260° and 270° meaning that this area was identified as uncomfortable for its intended pedestrian use of walking. It was also identified that this area would also be uncomfortable for cyclists. The significance of this effect was seen as **Very Large (Significant)** and mitigation will be required. It has been established that mitigation already present in this area in the form of two trees located on the pavement immediately to the south of the Proposed Development and a



number of trees, vegetation and a porous screen located immediately to the north of the Deansgate Square development. Embedded mitigation has also been included within the Proposed Development design in the form of three additional trees which will be planted along the pavement immediately to the south of the Proposed Development up to the layby area. It is anticipated that wind speeds within this area will be sufficiently reduced by these combined mitigation factors to more comfortable levels for both pedestrians and cyclists. It is anticipated that the combined mitigation in this area will reduce the significance of effect to **Slight (Not Significant)**.

- 12.9.4 Small safety exceedances were identified along the external walls of the parapets on the rooftop and the external terraces on the 22nd, 24th and 26th floors. No safety exceedances or major comfort exceedances were identified on the external terraces indicating that the current designed parapets are working correctly.
- 12.9.5 No other safety exceedances were encountered either within or immediately out with the Proposed Development.
- 12.9.6 It is understood that the rooftop area will not have public access. This area will be used for maintenance of generators, condensers and smoke vents etc. Health and Safety precautions should be established for maintenance personnel including restricted access to the rooftop during periods of high winds.



13 SOCIO-ECONOMIC

13.1 Introduction

13.1.1 This Chapter provides an assessment of the likely significant socio-economic effects of the Proposed Development in the context of the Site, Manchester and the wider sub-regional geography.

13.1.2 It has been prepared by Cushman & Wakefield and provides a bespoke analysis to estimate the potential effects on the local economy, population and services during the construction and operational phases of the Proposed Development relative to the baseline conditions. Consideration is also given to appropriate mitigation measures in response to any adverse effects where required.

13.1.3 This Chapter (and its associated figures and appendices) is not intended to be read as a standalone assessment and reference should be made to the front end of this ES (Chapters 1 – 6), as well as the final chapter, ‘Summary of Residual and Cumulative Effects’ (Chapter 14).

13.2 Legislation, Policy and Guidance

13.2.1 The following section describes the relevant legislation, policy and guidance to which regard has been had in undertaking the assessments.

National Level

National Planning Policy Framework

13.2.2 A revised version of the National Planning Policy Framework (NPPF) was published in February 2019. The NPPF is a material consideration in the determination of all planning applications.

13.2.3 Chapter 2 of the NPPF sets out that the purpose of the planning system is to contribute to the achievement of sustainable development which includes both economic and social objectives:

an economic objective – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure; and

a social objective – to support strong, vibrant and healthy communities, 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 a well-designed and safe built environment, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being.

13.2.4 Chapter 6 of the document sets out the approach to building a strong, competitive economy and states that planning policies and decisions should help create the conditions in which businesses can invest, expand and adapt. Significant weight should be placed on the need to support economic growth and productivity, taking into account both local business needs and wider opportunities for development.

13.2.5 Promoting healthy and safe communities is also a key consideration. To provide the social, recreational and cultural facilities and services the community needs, planning policies and decisions should ensure an integrated approach to considering the location of housing, economic uses and community facilities and services.

City-Regional Level

The Greater Manchester Spatial Framework

13.2.6 The Greater Manchester Spatial Framework (GMSF) is a Development Plan Document being prepared jointly between nine of the ten Greater Manchester Local Planning Authorities. The GMSF will set out the approach to housing and employment land across Greater Manchester for the next 20 years.

13.2.7 The draft GMSF was consulted on from October 2016 to January 2017. The draft plan set out the scope of the plan, spatial strategy, strategic policies and proposed allocations. The application Site is not subject of any draft land use allocations.

13.2.8 A second draft was consulted on between January to March 2019. Following Stockport's subsequent decision to withdraw from the GMSF process, the GMCA decided in December 2020 to proceed with a revised version of the plan for the remaining 9 Greater Manchester authorities. The revised plan will be consulted on in June 2021.

13.2.9 The draft Publication version is available to view online and three of the key objectives of the Plan are to ensure a thriving and productive economy in all parts of Greater Manchester; to maximise the potential arising from the national and international assets (including encouraging graduates to stay in Greater Manchester); and to promote the health and wellbeing of communities.



13.2.10 **Policy GM-E 5** seeks to support the continued growth and success of the university sector, including through continuing to develop Greater Manchester as the UK's best destination for students.

Local Planning Policy

The Core Strategy

13.2.11 The Core Strategy was adopted in 2012 and covers the period to 2027. The Core Strategy is the key document within Manchester's Development Plan.

13.2.12 The applicable planning policy is summarised as follows:

- **Policy CC1 (Primary Economic Development Focus: City Centre and Fringe)** – states that a provision of a range of economic development uses, such as retail, leisure, entertainment, cultural and tourism facilities will be encouraged in the City Centre, in line with Policy C1, to support the development of a vibrant employment location attractive to businesses, employees and visitors to the City Centre.
- **Policy CC6 (City Centre High Density Development)** - states that City Centre development will generally be high density and 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.
- **Policy CC10 (A Place for Everyone)** - states that development which promotes high standards of accessibility to buildings and across spaces will be supported. The City Centre will be a location which appeals to a wide range of residents and visitors.
- **Policy H12 (Purpose Built Student Accommodation)** - states that provision of new purpose-built student accommodation will be supported where the development satisfies the criteria listed in the policy.

The Great Jackson Street Spatial Development Framework

13.2.13 The Great Jackson Street Strategic Regeneration Framework (The Framework) was adopted in 2018 and guides the comprehensive regeneration of the Great Jackson Street area. The application Site forms part of the designated framework area.

13.2.14 The redevelopment of the framework area is noted to provide an opportunity to introduce a new residential led neighbourhood with scale and form of development that is appropriate to its gateway location.



- 13.2.15 The Framework advises that the area should come forward with a range of accommodation types to create a sustainable mixed community.
- 13.2.16 The economic and market analysis set out in the Framework highlights an identified need for high quality, well managed apartments across a range of sizes and typologies that cater for an increasingly diverse population in the City Centre.
- 13.2.17 A variety of building heights are also encouraged in the area to ensure a varied and stimulating built landscape. It is noted that buildings should step down in height towards the centre of the Framework area with the buildings of greatest height found at the perimeter.

Our Manchester Strategy 2016 - 2035

- 13.2.18 The Manchester Strategy sets a long-term vision for Manchester's future and describes how it will be achieved.
- 13.2.19 The strategy acknowledges that Manchester is in the top tier of international cities for higher education with around 20,000 students graduating every year with an increasing number choosing to stay to live and work in the city.
- 13.2.20 The strategy advises that delivering high-density housing developments will ensure that more people accessing jobs live within the city, and that the best use of the space is made, limiting the requirement for green belt development.
- 13.2.21 Care will also be taken to ensure that homes are good quality and that the scale and heights of buildings are appropriate. This will be guided by the planning process.
- 13.2.22 The strategy advises that Manchester is developing the highest density housing in the places that are best connected by public transport. This type of urban development allows the city to grow more sustainably and responds to people's desire to be well connected by public transport.

13.3 Assessment Methodology and Significance Criteria

Scope of the Assessment

- 13.3.1 The Deansgate South site currently comprises a long term vacant and derelict site at the junction of Deansgate South and Bridgewater Viaduct in Manchester City Centre. As such, it provides no socio-economic benefit to the local community.
- 13.3.2 The Proposed Development set out within the planning application seeks to deliver a 27-storey landmark building incorporating 534 high quality student beds together



with 639 sq m of supporting amenity space. The scheme has the ability to play an essential role in the evolution of this area of the city centre, whilst bringing additional socio-economic benefits, all of which furthers the city's status as one of the top five university cities within the UK.

13.3.3 The majority of the socio-economic impacts derived from the Proposed Development are anticipated to have the most significant impact within the local area, with some lesser scale impacts across the wider Greater Manchester sub-region and North West region.

13.3.4 This assessment of the likely socio-economic benefits of the Proposed Development considers a range of potential impacts throughout the construction and operational phases of the scheme:

- Housing Provision - including Student Housing
- Economic Activity and Employment
- Education – Qualifications and Skills
- Economy – including Productivity and Local Expenditure
- Healthcare – GP and Dental Provision
- Crime

13.3.5 Further detail on the methodology of this assessment is set out later in this section.

Scoping Process

13.3.6 Manchester City Council adopted a Scoping Opinion (Appendix 2.2) on 18th November 2020, within which they requested that socio-economic impact be scoped into the ES. MCC stated the following in respect of demographic, socio-economics and health:

13.3.7 *"It is considered that the demographic, socio-economic and health impacts of this scheme are significant enough to warrant assessment through the EIA process. This should include an assessment of direct and indirect construction and operational effects on the local and regional environment, including the economy, housing provision, student housing, education, employment, health and healthcare, crime, and on-going regeneration within the City."*

13.3.8 Each of the identified socio-economic factors identified within this Scoping Opinion are appropriately assessed and considered within this Chapter.



Effects Not Considered within the Scope

13.3.9 Given the temporary nature of the construction phase of the Proposed Development, and the negligible demand construction workers are likely to place on housing, education and health care during the works, these factors have been scoped out of the construction phase of this socio-economic assessment. In addition, appropriate security and mitigation measures can justify the scoping out of the consideration of the impact on crime during the construction phase.

13.3.10 It is recognised that whilst there may be some use of accommodation and health facilities by workers during the construction phase, this is likely to be limited and temporary in nature, and as such would not represent a significant or sustained socio-economic impact.

13.3.11 The following table summarises the scope of this socio-economic assessment by development phase:

Impact	Construction Phase	Operational Phase
Housing Provision	No	Yes
Employment	Yes	Yes
Education	No	Yes
Economy - Productivity	Yes	Yes
Economy – Local Expenditure	No	Yes
Healthcare	No	Yes
Crime	No	Yes

Extent of the Study Area

13.3.12 The study areas utilised within this assessment, for both defining the baseline conditions and the assessment of potential socio-economic impacts, are broadly defined by three spatial scales:

- The application Site
- The local impact area – Manchester local authority area
- The wider impact area – Greater Manchester Combined Authority area including the 10 constituent local authorities of Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Stockport, Tameside, Trafford and Wigan

13.3.13 The selection of study areas has been informed by the availability and reliability of the latest publicly available data at a variety of spatial scales, alongside the strategic



planning context and Cushman & Wakefield's professional experience and judgement of operational housing market and economic areas.

13.3.14 Whilst consistency in the use of these study areas has been sought where possible, given the wide range of socio-economic impacts assessed and the subsequent availability of data, some different study areas are used as required in some assessment cases. For example, the Deansgate and Piccadilly electoral wards, distance radii or policing area. This issue is identified in the limitations section. Benchmarking to the regional (North West) national scale (England/UK) has also been referenced where beneficial to the analysis.

Consultation Undertaken to Date

13.3.15 This assessment has not required the undertaking of any consultations.

Assessment Methodology

13.3.16 The method of baseline data collection and assessment is in accordance with current guidance and industry best practice.

13.3.17 As a desk based assessment, a range of published and publicly data from reliable sources have been relied upon. These are clearly referenced throughout this chapter and at the baseline stage include:

- Information provided by the applicant
- Office for National Statistics (ONS)
- Higher Education Statistics Agency (HESA)
- NatWest Student Living Index
- Visit England
- NHS Choices
- Home Office and Police.UK

13.3.18 The estimation and assessment of anticipated socio-economic impacts for both the construction and operational phase have been derived from the specification of the Proposed Development, reliable published data sources, and Government and industry guidance. The approach to assessment and data sources for each impact is set out as follows:



Impact	Assessment Methodology
Construction Phase	
Construction Employment	As detailed construction costs are not yet available from the Applicant, median Building Cost Information Service (BCIS) cost data for 'student residences and halls of residence' as at November 2020 at the Manchester level (£1,870 per sqm/£173 per sq ft) has been applied to the total floorspace established for the Proposed Development (15,011 sqm/161,578 sq ft) to provide an estimated total construction cost of £28,070,570. This has been divided by the average annual turnover per employee in the North West construction sector (£145,050) based on ONS Business Population Estimates (2017) to provide an estimated number of jobs directly created by the Proposed Development if it were to be completed in a single year. Dividing this figure by the anticipated 2.5 year (30 month) construction period calculates the estimated gross FTE construction jobs. Leakage and displacement considerations are applied in line with Homes and Communities Agency Additionality Guide (4th Addition). Given the proximity of the Proposed Development to the Manchester administrative boundary, leakage effects are considered medium (25%) at the Manchester scale but low (10%) for GM. Displacement is assessed as low at 25%. A composite multiplier of 1.1 at the Manchester and 1.33 at the GM scale has been applied to account for indirect employment effects generated as a result of supply chain linkages and local spend during the construction period.
Economy – Productivity	The latest available (2108) ONS GVA per capita estimate at the Manchester local authority level (£41,177) is applied to the estimated FTE construction jobs per annum figure to provide an indication of the income generated to the economy through the construction phase of the proposed development.
Operational Phase	
Student Housing & Population	The Schedule of Accommodation for the Proposed Development establishes the number of rooms and occupancy. One person per bed space is assumed.
Employment	Direct operational phase employment has been estimated by the Applicant based upon their experience of similar schemes and their FTE requirement for jobs such as caretaker, security and concierge staff. Leakage and displacement considerations are applied in line with Homes and Communities Agency Additionality Guide (4th Addition). Given the proximity of the Proposed Development to the Manchester administrative boundary, leakage effects are considered medium (25%) at the Manchester scale but very low (5%) for GM. Displacement is assessed as low-medium at 35%. A composite multiplier of 1.3 at the Manchester and 1.4 at the GM scale has been applied to account for additionality effects.



Impact	Assessment Methodology
	Indirect FTE employment per annum generated by the uptake of part-time term time jobs by new residents has been estimated based on Natwest's Student Living Index findings in respect of the proportion of UK students with a part time job (36%) and average hours worked by Manchester students (10.7 hours per month) and an average 37.5 hour average working week.
Education	The Proposed Development will not directly enhance the skills and education of its residents and therefore the impact on education is assessed qualitatively based on professional experience of the likely effects on providing the supporting infrastructure required for students to excel at their studies and for the city to remain competitive as a university destination through the attract and retain students.
Economy – Productivity	The latest available (2108) ONS GVA per capita estimate at the Manchester local authority level (£41,177) is applied to the estimated permanent net FTE jobs created through the on-going operation of the Proposed Development to provide an indication of the uplift in productivity generated to the economy.
Economy – Local Expenditure	The latest Student Income and Expenditure Study (Department for Education, 2014/15) used by Government to track student expenditure and debt is applied to the new population of resident students at the Proposed Development to estimate local annual expenditure. Visitor spend is estimated based on a conservative assumption of one overnight visit per new resident per annum applied to Visit Britain visitor spend data at the Manchester Local Authority level.
Healthcare	NHS Digital statistics from the GP Workforce Census together with information on acceptance of new patients at existing GP and dental surgeries to determine capacity to serve new student population.
Crime	The assessment of the effects of development on crime are considered qualitatively based on the baseline crime data indicating the type of offences in the local area and the scope to 'design out' crime through scheme design information as provided by the applicant and applied through professional experience.

Significance Criteria

13.3.19 For the purpose of this assessment, the level of the socio-economic effects generated by the Proposed Development are deemed to range from negligible to beneficial/adverse to a minor, moderate or major degree at the local and wider scale:

- **Majorly Beneficial** – Significant positive socio-economic impact at the local scale and moderate or significant benefits at the wider scale
- **Moderately Beneficial** – Modest socio-economic improvement at the local scale



- **Minor Beneficial** – Small positive impact on local socio-economic indicators
- **Negligible** – No real change in socio-economic indicators as a result of development
- **Minor Adverse** – Small negative impact on local socio-economic indicators
- **Moderately Adverse** – Modest socio-economic disincentive at the local scale
- **Majorly Adverse** – Significant adverse socio-economic impact at the local scale and moderate or significant disbenefits at the wider scale

13.3.20 Major effects are considered to be significant for the purposes of this EIA.

13.3.21 The significance criteria are qualitative in approach but informed by data derived from the baseline assessment and quantitative assessment of construction and operational phase impacts. Based on professional experience and judgement, consideration is given to the scale and duration of the socio-economic effect at each spatial scale relative to the baseline; the value of the impact; and the ability to adapt to and/or mitigate the potential benefit or adverse effect.

Limitations

13.3.22 There are a number of limitations associated with estimating and assessing the socio-economic impacts of physical development. These are discussed throughout this Chapter and can be summarised as follows:

- As a desk based assessment, great reliance is placed on published data, information and guidance – the true impacts of development will not be known until after delivery, when project specific monitoring and evaluation is undertaken.
- Data is limited by its availability to desired dates and administrative boundaries meaning different study areas and dates are used for different assessments, but consistency is sought where possible.
- Housing markets and economic areas do not conform to administrative boundaries but the availability of reliable data to these spatial scales has had to determine the study areas of this assessment.
- Qualitative assessments are based on professional experience and judgement.
- Some impact assessments are based upon information provided by the applicant including schedule of accommodation and construction costs. It is assumed that



this information is correct and reliable but recognised that it is subject to potential change as the scheme progresses.

- A lack of formal guidance to assessing the socio-economic impacts of development means an element of subjectivity is unavoidable.

13.3.23 The assessment of the socio-economic impacts of the Proposed Development is considered as robust as can be within the context of the identified limitations above.

13.4 Baseline Conditions

13.4.1 The current (2020) socio-economic status of the Site and its local and wider context represent the baseline conditions against which the scale and significance of the socio-economic impacts of the Proposed Development can be established and assessed.

13.4.2 There is not anticipated to be any change in the baseline conditions of the Site between now and the time of commencement of construction works for the Proposed Development (anticipated second quarter of 2022).

13.4.3 The baseline position of each of the potential socio-economic impacts identified within the scope of assessment is considered in turn within this section.

Population

13.4.4 The Site currently comprises a vacant brownfield site and as such has no population.

13.4.5 The latest available ONS Mid-Year Population Estimates (2019) provide data on population and age structure within each of the study areas. The data indicates a resident population of 552,900 people within the Manchester Local Authority Area.

13.4.6 Over the last five years (2014-2019) Manchester's population has increased by over 34,000 people representing a notably faster rate of growth (6.6%) than that of the wider Greater Manchester (3.9%); North West region (2.9%) and England (3.6%) trend.

13.4.7 The majority of Manchester's resident population (70.5%) is of working age (16-64 years). This compares favourably to that of Greater Manchester (63.6%); the North West (62.1%); and England (62.4%) and is reflective of its role as a major Regional Centre.

13.4.8 Of particular relevance to the Proposed Development, and demonstrating the importance of Manchester as a university city, is the relatively high proportion of the resident population within the 18-24 year age bracket (15.6%) compared to the Greater Manchester (9.2%); regional (8.6%); and national (8.4%) rates.



13.4.9 The Proposed Development is anticipated to be completed and accepting of new resident students by September 2024. ONS 2018 Based Sub-National Population Projections indicate that Manchester's working age population is anticipated to grow by 1.9% to 2024, a faster rate of growth than the North West (1.2%) and England (1.8%).

13.4.10 The provision of sufficient and suitable housing to accommodate the scale and type of population growth witnessed and anticipated in Manchester is a key consideration in meeting both housing needs and the City's economic growth aspirations. The strategic policy context further supports the drive to deliver significant new housing across the City.

Housing Provision

13.4.11 The Site comprises a vacant brownfield site and as such currently provides no housing.

13.4.12 At the time of the 2011 ONS Census, there were 8,052 households within the City Centre Ward (now split into Deansgate and Piccadilly Ward). Reflecting the central urban location, the majority of these were privately rented (65%) – a significantly higher rate than that of Manchester Local Authority area (28%) and the wider spatial areas (15% in the North West to 17% nationally) where the dominant tenure is owner occupation (60%+). Owner occupation in the City Centre ward was just 26% in 2011.

13.4.13 In terms of household composition, the latest (2018) ONS data indicates that both the Manchester Local Authority area and Greater Manchester had a slightly higher proportion of single person households (34%) and lower rate of households with two or more adults (38%) than the national English average of 31% and 41% respectively. The rate of households with dependent children in is aligned across the three spatial areas of study at 28%.

13.4.14 Manchester City Council's latest Annual Monitoring Report (2018) indicates an average of 1,408 housing completions per annum across the District between 2009/10 and 2017/18. In 2017/18 net housing completions (which takes account of demolitions) were 2,986 units - considerably higher than previous annual completions and significantly above the 2017/18 target of 2,400 units per annum¹.

¹ Housing Delivery Test Measurement Rule Book transitional arrangements state that in the absence of an up to date adopted local plan the 2017-18 housing requirement is to be based on projected household growth from 2014-based household projections, using an annual average growth over ten years from 2017-2027.



Student Population and Housing

- 13.4.15 Data from the Higher Education Statistics Agency (HESA) indicates that 2.38 million students enrolled on a higher education course in the UK during the 2018/19 academic year. Around 20% of enrolments were from students from outside of the UK. International students bring a significant economic contribution to the UK and are more likely to choose private sector accommodation.
- 13.4.16 Accounting for 3% of the UK total, 73,300 students enrolled on a higher education course at the University of Manchester (40,250) and Manchester Metropolitan University (33,050) in the 2018/19 academic year. Whilst outside of the Manchester Local Authority area, a further 20,815 enrolments were made to the University of Salford. The positioning of the Proposed Development on the south western edge of the City Centre could also appeal to students studying in Salford.
- 13.4.17 As of June 2020, the ONS Annual Population Survey identifies a total of 43,600 residents of Manchester who are economically inactive (not working or seeking work) owing to being a student. Whilst it is recognised that not all of the 73,300 students enrolled at Manchester's universities will live within the City boundary, this is likely to be an under-representation of the City's total student population as many students do choose to engage in the labour market during their university studies.
- 13.4.18 HESA research also provides data on the term time accommodation of full time (including sandwich year) students. Nationally, during the 2018/19 academic year, a third (33%) of students were living in temporary rented accommodation such as annual house shares. A further 20% were living at home with a parent/guardian; 17% in their own owner or rented residences; 15% in a provider maintained property (19% for first year students); and 8% in private sector halls such as that anticipated by the Proposed Development.
- 13.4.19 Research by Cushman & Wakefield's specialist Student Accommodation Advisory Team predicts that the demand for student accommodation in Manchester could grow by 8,445 students between 2018/19 and 2029/30. However, based on the current development pipeline, the number of student beds is only anticipated to increase by 3,917 over the same period. As a result, in the order of 4,528 students could be forced into private market rented accommodation, thus heightening pressure on the housing market, reducing Council Tax revenue and potentially impacting the student experience. The shortage in supply of new purpose built



student accommodation in Manchester can already be witnessed by the highest level of rental growth of any major market since 2013 at an average of 4.5% per annum (2.1% higher than inflation).

Economic Activity and Employment

13.4.20 The scale of the potential local labour force can be measured by the proportion of those who are economically active. This group includes all those who are in employment, including self-employed, or unemployed but actively seeking work. Those who are economically inactive are not seeking employment for a variety of reasons.

13.4.21 The latest data from the ONS Annual Population Survey (Jul 2019 – June 2020) indicates that 73.1% of Manchester's working age population (16-64 years) are economically active and 67.8% are in employment. This is a notably lower rate than that of the wider Greater Manchester, North West and national benchmark averages where the economic activity and employment rates exceed 77% and 73% respectively.

13.4.22 Correspondingly, the unemployment rate amongst 16-64 year olds in Manchester is higher at 7.3% than that of Greater Manchester (5.0%); the North West (3.9%); and England (4.0%).

Table 13.1 Economic Activity and Employment - % Working Age Population (2020)				
	Manchester	Greater Manchester	North West	England
Economically Active	73.1	77.1	78.3	79.7
In Employment	67.8	73.3	75.2	76.5
Unemployment Rate	7.3	5.0	3.9	4.0
Economically Inactive	26.9	22.9	21.7	20.3
Economically Inactive: Student	41.7	28.8	24.6	26.3

Source: ONS Annual Population Survey (July 2019 – June 2020)

13.4.23 Of particular relevance to the Proposed Development, the majority of those who are economically inactive in Manchester (41.7%) are not seeking employment due to being a student. This is significantly higher than the wider benchmark areas which range from 24.6% in the North West to 28.8% across Greater Manchester and is reflective of the City's strength as a University destination and high concentration of student population.



13.4.24 The ONS Business Register and Employment Survey identifies the industry of those in employment. As at 2019, the most significant sector of employment within Manchester was Professional, Scientific and Technical Activities (13.6% of employee jobs) - a higher proportion than the wider spatial areas (9-10%). Health employs the second largest proportion of jobs in Manchester at 12.4% which is similar to Greater Manchester and national rate but lower than the North West (14.2%).

Table 13.2 Significant Industries of Employment in Manchester, 2019 (%)				
Industry	Manchester	Greater Manchester	North West	England
Professional, scientific & technical	13.6	9.9	8.8	9.1
Health	12.4	12.8	14.2	12.7
Business administration & support services	11.9	10.1	8.6	9
Education	9.9	8.4	8	8.7
Retail	8.7	9.7	10	9.2

Source: ONS Business Register and Employment Survey (2019)

13.4.25 In respect of construction, 2% of Manchester jobs, equating to 8,000 people were employed within this sector in 2019. This rate is less than half that of the wider benchmarks of between 4.3% across Greater Manchester and 4.68% nationally.

13.4.26 The employment figures demonstrate a high proportion of people employed in high value industrial sectors and roles. This indicates a skilled and educated workforce and could be interpreted to reflect the large universities and higher educational facilities within the Local Authority and surrounding areas.

Education

13.4.27 Qualification levels provide a useful indicator of the skills of the local labour market. The latest ONS Annual Population Survey indicates that in 2019 43.7% of Manchester's working age population (16-64 year olds) had achieved NVQ4+ level qualifications. This is notably higher than that of Greater Manchester (36.6%) in Greater Manchester; the North West 36.1%) and England (40%).

13.4.28 NVQs are focused on practical skills but the highest NVQ level 6 is equivalent to an academic Bachelors degree, while Levels 4 and 5 equate to the first and second years of a Bachelors degree respectively. The higher qualification rate (NVQ4+) achieved in Manchester could be a reflection of how the Manchester Universities are supporting the local population to attain higher level qualifications and skills.



Productivity

13.4.29 Gross value added (GVA) is a measure of productivity based on the income generated to the economy through the production of goods and services. The ONS produces annual total GVA and GVA per capita estimates to the local authority level.

13.4.30 In 2018 (latest available data), Manchester generated a total economic output of £22.5 million equating to £41,177 gross GVA per head of population. This is considerably higher than the wider benchmarks which range from a GVA of £25,118 per head in the North West to £29,356 per head nationally and is reflective of the higher value service sector industries that are prevalent within the City.

13.4.31 Manchester's annual growth in GVA also exceeded that of Greater Manchester (3.3%); the North West (3.2%) and England (3.1%) at 3.6%.

Table 13.3 GVA Productivity (2018)				
	Manchester	Greater Manchester	North West	England
Total GVA Per Head	£41,177	£25,249	£25,118	£29,356
Total GVA (£ million)	£22,550	£71,015	£183,162	£1,643,271

Source: ONS Regional GVA

Local Expenditure

13.4.32 After the costs of accommodation, retail spend accounts for much of the expenditure within a local economy. Based on CACI Retail Footprint Expenditure data from 2019/20 total retail spend reached £54 million for convenience goods and comparison goods in Manchester City Centre. As would be anticipated for a major regional city, comparison spend exceeded (55%) that of convenience spending (45%), but at a similar rate to that of the wider benchmarks. Leisure service expenditure reached 13.8 million in Manchester City Centre in 2019/20.

13.4.33 There is associated expenditure on food, social and other living costs linked to the provision of student accommodation. The Natwest Student Living Index (July 2020) provides the following findings for Manchester students in terms of their current earnings:

- Average weekly income from term time work is £70 - £75
- Average weekly income from out of term holiday work is £122
- Manchester students take on a moderate level of part time monthly work (10.7 hours per month) compared to the national student average of 12.8 hours per



month.

- 13.4.34 The latest Natwest data indicates that Manchester students spend their earnings on a range of expenses each month including alcohol (£27), groceries (£74) and household bills (£18). Manchester students spend slightly above average on going out at £37 per month compared to the national average of £33 per month.
- 13.4.35 The Proposed Development will also support Manchester's important visitor and tourism economy through the attraction and spend of visiting friends and family to the new resident student population.
- 13.4.36 Visit Britain data estimates that the Manchester Local Authority area attracted an average of 29.7m day visits per year between 2017 and 2019. The spend associated with these day visits averaged £1,513m per year, or £51 per person per year. Marketing data shows that a staying visitor in paid for accommodation in Greater Manchester spent an average of £130 per person per day including accommodation and £84 excluding accommodation. This includes spending in shops, restaurants, entertainment venues, at attractions and on local transport within Greater Manchester.

Health Care

- 13.4.37 In terms of health care, the new population generated by the Proposed Development is likely to have the most significant impact on General Practitioner (GP) and dental provision at the local scale. In each case, a 1 mile radius from the Proposed Development is considered a reasonable walking distance for the purposes of this assessment.
- 13.4.38 There are currently 9 GP practices within a 1 mile radius of the Proposed Development with a total of 44 GPs and 96,014 registered patients (where information is available). All but one GP practice is currently accepting new NHS patients.

Table 13.4 GP Provision within 1 Mile of Proposed Development (Nov 2020)				
GP Practice	Distance (Miles)	No. of GPs	Patients on Roll	Accepting New Patients
The Arch Medical Practice	0.4	13	19,303	Yes
Cornbrook Medical Practice	0.5	9	13,951	Yes
The Docs	0.6	3	8,120	Yes
Cornbrook MP: Boundary Surgery	0.7	-	-	Yes
Brackfriars Medical Practice	0.7	1	11,268	Yes
City Health Centre	0.8	9	13,189	Yes
Trinity Medical Centre	0.8	6	3,589	Yes



Table 13.4 GP Provision within 1 Mile of Proposed Development (Nov 2020)				
GP Practice	Distance (Miles)	No. of GPs	Patients on Roll	Accepting New Patients
Limelight Health & Wellbeing Hub	0.9	3	7,731	Yes
University Health Centre	1.0	-	18,863	No
Total:	9	44	96,014	

Source: NHS Choices

13.4.39 The latest NHS Digital statistics from the GP Workforce Census indicates that as at September 2020, there were 35,434 FTE equivalent GPs in England serving 60.39 million registered patients, equating to a GP to patient ratio of 1,704.

13.4.40 Where data is available the GP to patient ratio at the practices within 1 mile of the Proposed Development is 1,753 which is in keeping with the national average indicating a sufficient provision of GPs in the local area.

13.4.41 In terms of dental services, there are currently 10 dental practices with 45 dentists operating within a 1 mile radius of the Proposed Development. Just 3 are accepting new patients (where information is available).

Table 13.5 Dentist within 1 Mile of Proposed Development (Nov 2020)			
Dental Practice	Distance (Miles)	No. of Dentists	Accepting New Patients?
207 Dental Care	0.4	5	No
City Centre Dental Practice	0.7	6	Yes
Bupa Dental Care	0.7	9	Yes
Manchester DP Ltd	0.7	-	No
Revive Dental Care	0.7	3	Yes
Ocean Dental	0.8	9	No
Parsonage Dental Practice	0.9	-	-
Salford Community Health	0.9	-	-
Archway Dental Practice	1	3	No
My Dentist	1	10	No
Total:		45	

Source: NHS Choices

13.4.42 Given the historic and anticipated rate of population growth across the City, and the resulting likely increase in demand for local GP and dental services, this baseline position could change over the course of the delivery of the Proposed Development. The ability for the supply of health care provision to respond to and meet this demand will determine whether or not the capacity will improve or worsen from the current baseline.



Crime

- 13.4.43 The Proposed Development falls within the ‘Southern Gateway’ neighbourhood policing area. The national website for policing (Police.UK) does not identify any current policing priorities for this area but indicates that most common crimes over the last three years (Nov 2017 to Sept 2020) to be violence and sexual offences (1,219 incidents); theft (1,192); anti-social behaviour (1,031); vehicle crime (848); and public order (518) offences.
- 13.4.44 Home office data for ‘police recorded crime shows that, for Greater Manchester, of the total recorded crime offences for the years 2020-21 (278,374) theft offences comprised the greatest proportion of these (c.103,692/37%) which is reflective of figures for the North West (31%) and England (34%). The second most prevalent type of crime at the Greater Manchester level was violence against the person which is the most prevalent crime category across the North West and England. Burglary offences in Greater Manchester are slightly more prevalent, comprising a higher percentage (9%) of total crime in comparison to the North West (7%) and England (7%).

13.5 Assessment of Effects

- 13.5.1 This section sets out the assessment of effects for each identified economic and social indicator under each relevant phase of the Proposed Development – construction and operational.

Assessment of Construction Phase Effects

- 13.5.2 The potential temporary socio-economic impacts of the construction phase of the Proposed Development, including construction employment and productivity are assessed within the following section.

Employment

- 13.5.3 Whilst construction jobs are transitory in nature and therefore not a permanent project output, the jobs created and safeguarded within the sector during construction will have a positive economic benefit.
- 13.5.4 The estimation of construction jobs has been calculated in accordance with the approach set out in the Assessment Methodology, informed by estimated construction costs, employee turnover within the construction sector and anticipated development programme. The calculation suggests that the Proposed Development could generate 194 FTE gross job years, equating to 78 FTE gross construction jobs per



annum over the 2.5 year build programme. This represents an average annual employment figure given that the nature and scale of construction jobs required will vary over the course of the development programme.

- 13.5.5 The baseline identified 8,000 jobs in construction in Manchester in 2019, representing 2% of the district's jobs. The construction jobs generated by the Proposed Development will temporarily uplift this figure by 1% for the two and a half years of development, but recognising that some of these jobs will replace those on current construction schemes and/or include jobs from outside of the Manchester area. Further, unemployment rates within Manchester were high compared to the wider benchmark averages. The construction employment could positively support some of this cohort into paid work during the build period.
- 13.5.6 Applying leakage and displacement considerations to the temporary construction jobs in line with Homes and Communities Agency Additionality Guide (4th Addition), together with a composite multiplier to take account of the additional indirect employment generated through supply chain linkages and additional spend during construction generates a net employment figure of 48 FTE per annum at the Manchester and 70 FTE per annum at the Greater Manchester scale for the 2.5 years during construction.
- 13.5.7 The generation of direct and induced construction employment during the construction phase of the Proposed Development will have a temporary but major beneficial impact at the very local scale and a **moderate beneficial** effect at the Manchester and GM level.

Productivity

- 13.5.8 The construction phase of the Proposed Development will contribute to the economy in the form of GVA. The baseline identified Manchester generated a total economic output of £22.5 million equating to £41,177 gross GVA per head of population in 2018. Applying this to the net construction jobs provides an estimated £2 million GVA per annum into the Manchester economy over the two and a half year construction phase.
- 13.5.9 This constitutes a short term **moderate beneficial** impact to the Manchester economy as a result of the physical delivery of the Proposed Development.



Assessment of Operational Phase Effects

- 13.5.10 The longer-term operational phase impacts generated following completion and occupation of the Proposed Development are assessed within the following section.

Student Housing and Population

- 13.5.11 The Proposed Development incorporates a mix of room sizes from one bed studios to 6 bed social studios. On the assumption that the Proposed Development will be fully occupied on completion and accommodate one person per bed-space, the 272 unit 534 bed-space scheme will generate a new resident student population of up to 534 people across a range of ages, including those who are economically active. Given that there are currently no residents at the Site these will be net additional bed spaces and residents.
- 13.5.12 The Proposed Development will provide a positive contribution to accommodating the scale and type of population growth witnessed and anticipated in Manchester, whilst serving to diversify the local housing offer and improve choice within this part of the City – a key requirement to meeting economic growth aspirations.
- 13.5.13 A moderate beneficial impact will be made to diversifying local student housing provision. Whilst relatively minor in terms of the scale of Manchester's large total student population, just 8% of full time student occupy similar private sector halls whilst a third are in temporary rented accommodation. The new high quality development proposed has the potential to support this gap in the market, better meet student needs and potentially release student occupied homes elsewhere in the City back into an increasingly supply constrained housing market, thus increasing Council Tax receipts to the public purse.
- 13.5.14 The Proposed Development is consequently considered to have a permanent **moderate beneficial impact** on student housing and population at the local site and Manchester scale. The beneficial impact at the wider sub-regional scale will be minor.

Employment

- 13.5.15 The purpose built student accommodation of the Proposed Development is estimated to generate 20 direct gross FTE jobs based on data provided by the Applicant based on experience staffing similar schemes. This will include employees such as concierge, security and caretaker staff. There will also be cleaners and maintenance staff which



would be provided by subcontractors, however in order to provide a conservative estimate of employment such jobs have not been estimated.

- 13.5.16 Additionally, it is likely that supplementary temporary staff will be employed to manage large student arrival and departure days at the beginning and end of each academic term. These additional temporary staff have not been taken into consideration within this assessment.
- 13.5.17 Applying leakage, displacement and additionality considerations to the anticipated 20 FTE gross direct jobs created through the operational phase of the Proposed Development provides a net FTE job figure of 13 at the Manchester level and 17 at the sub-regional scale. This represents a **negligible benefit** of development at the Manchester and sub-regional scale.
- 13.5.18 Indirect employment effects will also be generated by the Proposed Development through the uptake of jobs by the new student residents. Of the potential 534 students accommodated within the scheme, it is estimated based on baseline evidence that 192 (36%) will hold a part-time job during term time and will work on average 10.7 hours per month, generating a total of 2,057 hours worked per month. This equates to an estimated 13.6 FTE jobs based on a 150 hour working month (37.5 hour working week) that would be supported by students living within the Proposed Development.
- 13.5.19 Therefore, there is a long term **minor beneficial** impact on the wider population as a result of student employment levels.

Productivity

- 13.5.20 The jobs created and sustained through the operation phase of the Proposed Development will contribute to the economy in the form of GVA uplift. Applying Manchester's average £41,177 gross GVA per head of population established in the baseline to the estimated net direct jobs created at the scheme provides an estimated £0.53 million GVA per annum uplift to the economy at the City scale and £0.7 million at the Greater Manchester level. This benefit will persist year on year owing to the continued operation of the Proposed Development.
- 13.5.21 The impact of direct employment through the operation of the Proposed Development on local productivity and wealth creation is positive. However, the magnitude of GVA uplift is small relative to the productivity of the City and wider benchmarks established within the baseline. As such, the impact is considered to



present a direct and long term **minor beneficial** effect at the local level and sub-regional scale.

Education

- 13.5.22 The Proposed Development will not directly enhance the skills and education of its residents. However, the provision of an additional 272 new high quality student housing units with the capacity to accommodate up to 534 students within the Proposed Scheme will support Manchester's ability to attract and retain its large student population.
- 13.5.23 The scheme provides the supporting infrastructure required for students to have the best chance of excelling during their studies given ease of accessibility to both Manchester's universities and that of Salford together with a safe, high quality and well managed environment in which to study. In turn, the Proposed Development will increase accommodation choices for students in the City and enhance the reputation and attractiveness of Manchester as a higher education destination, thus retaining its international competitiveness.
- 13.5.24 The impact of the Proposed Development on education has been assessed qualitatively and is considered to be indirectly **moderate beneficial** at the Manchester scale.

Local Expenditure

- 13.5.25 The additional new students (up to 534) residing at the Proposed Development will generate additional local expenditure on living expenses, food, retail and leisure activities.
- 13.5.26 The Student Income and Expenditure Study estimates that full time students spend on average £6,956 per annum on living costs which includes food, personal items, entertainment, household goods, non-course travel and other living costs. An average of £512 per annum is spent on direct course costs such as books, computers and equipment, as well as £404 per annum on facilitation costs (course related travel). This generates an average total annual expenditure per student of approximately £7,875.
- 13.5.27 Assuming the Proposed Development is fully occupied with full time students with average UK expenditure, it is possible to calculate that the total likely expenditure will be in the order of £4.2 million per annum. In the context of CACI Retail Footprint Expenditure data, existing convenience, comparison and leisure expenditure in the



City Centre is £67.8 million, therefore the additional expenditure represents a 6.2% increase which would benefit local businesses, as well as bringing positive supply chain effects to the Manchester area.

- 13.5.28 The effect of additional expenditure during the operational phase is considered to be of **moderate beneficial** significance to the City Centre and Manchester economies, and permanent in nature.
- 13.5.29 Further, students living in the Proposed Development will receive visits from friends and family which will generate additional expenditure which can be attributed to the Proposed Development.
- 13.5.30 It can be conservatively assumed that each student will receive one visit per year. Visitors to the Manchester Local Authority or Greater Manchester area spend on average £51 -£130 per day depending if they are visiting for the day or staying for the night in paid for accommodation. An increase in the number of visits to Manchester as a result of the student accommodation could therefore generate an additional £27,234 - £69,420 per annum in additional tourist expenditure. This includes spending in shops, restaurants, entertainment venues, at attractions and on local transport.
- 13.5.31 Whilst this is clearly a long term economic benefit to the City, it's impact may be considered **negligible** relative to the scale of Manchester's visitor and tourism spend identified within the baseline.

Healthcare

- 13.5.32 Specific capacity data for GP and dentist surgeries is not available from NHS sources. Therefore, as a 'worst case scenario' it is assumed that all students moving into the Proposed Development will need to register with a GP and Dentist.
- 13.5.33 Within 1 mile of the Site there are 8 GP surgeries and at least 3 dental surgeries accepting new NHS patients. The anticipated number of residents at the Proposed Development is 534. This would mean on average an additional 67 patients per GP surgery and a maximum of 178 new patients per dental surgery to absorb the additional population.
- 13.5.34 It is considered that the majority of the additional demand could be absorbed by the existing healthcare facilities. In addition, data indicates that there are other medical facilities accepting new patients slightly outside the study area which could potentially serve the Proposed Development which is in a highly accessible location and well



served by public transport. Furthermore, the targeted demographic of the Proposed Development is a younger age group who are considered less likely to put pressure on healthcare services in the same way that an older demographic might.

- 13.5.35 The impact of the Proposed Development on healthcare provision is assessed to be **minor adverse** at the local level.

Crime

- 13.5.36 The Site is a long term cleared and vacant brownfield site in the 'Southern Gateway' policing area of the City. The Proposed Development will create a high quality physical environment, with a new active population that will generate activity and visibility throughout the day. This will provide a significant positive impact on perceptions, feelings of safety and fear of crime on site and in the streets immediately surrounding the scheme.
- 13.5.37 The Proposed Development will provide on-site management services including 24 hour security, therefore significantly improving safety and security on site for new residents. Further, building to Secured by Design standards will incorporate measures to 'design out' crime through appropriate lighting, natural surveillance, active frontages and CCTV.
- 13.5.38 Each of these factors will have a notable positive impact on some of the most prevalent types of crimes within the Southern Gateway policing area, in particular theft; anti-social behaviour; vehicle crime; and public order offences. As such, the implementation of the Proposed Development can be considered to have a permanent **minor beneficial** impact on crime at the local level, but a more significant advantage at the site specific scale.

13.6 Mitigation

- 13.6.1 The socio-economic impacts of the Proposed Development throughout both the construction and operational phase have been assessed to be of between minor adverse to major beneficial. There are no significant adverse effects of development anticipated in socio-economic terms. Therefore, it is considered that no mitigation measures are required in respect of either the construction or operational phase of the Proposed Development.



13.7 Residual Effects

13.7.1 The residual post-mitigation effects of both the construction and operational phase of the Proposed Development on the local (Manchester) impact area are summarised in the table below (Table 13.6).

13.7.2 As set out within the summary table, there are not anticipated to be any significant residual socio-economic effects as a result of the Proposed Development.

13.8 Assessment of Cumulative Effects

Inter-cumulative Effects

13.8.1 Manchester is a rapidly growing and changing city, and as such, the Proposed Development will not be delivered in isolation. The socio-economic effects of the subject scheme together with that of other recent, on-going or proposed developments and/or initiatives may result in the cumulative exaggeration of some effects during both the construction and operational phase. These are considered qualitatively as follows:

- **Construction Phase** – Where developments come forward simultaneously or overlap in the locality, there is potential for cumulative benefits in construction employment and spend within the local supply chain as labour and materials are drawn together spatially to create a ‘cluster’ of inter-reliant activity that can support economies of scale, create synergy and in turn enhance productivity and output in the form of GVA. This could create a temporary but moderate benefit. Further, enhanced skills and experience acquired by employees during the construction phase could improve their employability on other local developments, in turn contributing to a longer term reduction in Manchester’s higher unemployment rate.
- **Operational Phase** – The cumulative impact of housing delivery in the local area from the Proposed Development and other schemes will have the combined benefit of contributing to Manchester’s housing delivery targets and related economic growth aspirations. Together, the schemes will diversify and enhance the mix and quality of the City’s housing offer, consequently having a catalytic effect of attracting more residents, increasing footfall and spend, and creating more jobs, thus raising perceptions of Manchester as a place to live, study and work and in turn, increasing sale and rental values, enhancing market confidence



and encouraging further investment and physical development.

The cumulative impact on increased population, job creation and local spend from the proposed and other local developments, is likely to create a synergy and ‘critical mass’ of socio-economic benefits that is sufficient to encourage new local businesses to be established and enable existing businesses to be sustained and to grow resulting in further indirect benefits in the form of additional employment and productivity.

The impact of the Proposed Development on local health care facilities has been considered in isolation within this assessment. In practice, the delivery of other local development schemes will have a cumulative impact on the demand for health services and capacity of those services to meet that demand which could be a minor adverse cumulative effect.

Intra-cumulative Effects

13.8.2 The socio-economic effects of the Proposed Development will have an inter-cumulative relationship with other impacts assessed within this ES. The increased resident population at the Site, the jobs created and additional spend generated will all impact upon demand for private and public transport; together with environmental considerations including ecology, noise and air pollution. Each of these effects is considered in detail within the relevant Environmental Statement Chapter.

13.8.3 Due to the overall low level of effects identified it is considered unlikely that there will be significant intra-cumulative effects in relation to socio-economics

13.9 Summary

13.9.1 This Chapter has provided an assessment of the likely socio-economic effects of the Proposed Development in the context of the Site, Manchester and the wider sub-regional geography during the construction and operational phases of the scheme relative to the baseline conditions.

13.9.2 The table below summarises the findings of the analysis including the anticipated socio-economic outputs and scale of beneficial or adverse effect in respect of each indicator.

13.9.3 Overall, the analysis demonstrates that the Proposed Development is not anticipated to have any significant adverse socio-economic effects, but a series of predominantly moderate beneficial effects on the local and sub-regional area.



Table 13.6 Summary of Socio-Economic Effects			
Indicator	Impact	Local (Manchester) Effect	Wider (GM) Effect
Construction Phase			
Employment	78 FTE gross jobs per annum for 2.5 years	Moderately Beneficial	Moderately Beneficial
Economy – Productivity	£2m GVA per annum for 2.5 years	Moderately Beneficial	Minor Beneficial
Operational Phase			
Housing Provision	272 student units 534 new residents	Moderately Beneficial	Minor Beneficial
Employment	20 FTE gross jobs	Minor Beneficial	Negligible Benefit
Education	-	Moderately Beneficial	Moderately Beneficial
Economy: Productivity	£0.5-£0.7m GVA per annum	Minor Beneficial	Minor Beneficial
Economy: Local Expenditure	£4.2m per annum	Moderately Beneficial	Minor Beneficial
Healthcare	-	Minor Adverse	Negligible Adverse
Crime	-	Minor Beneficial	Negligible Benefit



14 SUMMARY OF RESIDUAL AND CUMULATIVE EFFECTS

14.1 Residual Effects

14.1.1 A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects, i.e. the mitigation measures, has been set out within each technical chapter. These measures have been used to reduce impacts to the lowest practicable level consistent with the overall objectives of the scheme.

14.1.2 Each technical chapter has assessed the effectiveness of these measures in order to identify the residual effects.

14.1.3 Following the implementation of the mitigation measures outlined within each technical chapter, the majority of residual environmental effects have been assessed as being not significant, as summarised within Table 14.1 below. Further details are provided within the relevant technical chapter.

Table 14.1: Summary of Significant Residual Effects	
Technical Chapter	Significant Residual Effects?
Noise	No
Air Quality	No
Townscape & Visual	Yes (<i>adverse and beneficial</i>)
Built Heritage	No
Daylight & Sunlight	No
Wind Microclimate	No
Socio-Economics	No

14.1.4 As stated above within Table 14.1, the Proposed Development will result in residual significant effects in relation to townscape and visual impacts.

14.1.5 During construction, the visual effects are likely to be significant adverse due to high visibility of a crane and disruption of the streetscape. However, the resulting significant effects would be temporary and short term (less than 5 years). A Construction Method Statement (CMS) will be implemented to ensure that the adverse residual cumulative effects upon the townscape are not significant.

14.1.6 Following completion, the Proposed Development will result in significant beneficial effects on the local streetscape. Ultimately the Proposed Development will replace the derelict site, which depreciates the local streetscape, with an innovative and high-quality architecture that responds appropriately to the surrounding context and improves the street experience at a considerable gateway into the city of Manchester.



Given the Proposed Development will enhance the currently derelict Site with a building of appropriateness and high aesthetic qualities there will be significant beneficial visual effects from Deansgate and the Salford Trail.

14.1.7 The assessment of visual effects did however identify that ramblers and road users at Rochdale Canal will experience a significant adverse residual visual effect. At Rochdale Canal Tow, views of the Proposed Development, of which will comprise modern architecture, will compete with existing heritage assets and therefore detract from distinctive features of the view. In this instance, the high quality of the proposed architecture is not considered sufficient to compensate the loss of appreciation of a valuable historic townscape.

14.2 Cumulative Effects

14.2.1 Schedule 4 of the EIA Regulations states that an ES must include a description of the likely significant effects of the development, including reference to possible cumulative effects.

14.2.2 When considering potential significant cumulative impacts, the assessments have (where appropriate) considered:

- Intra-cumulative effects; and
- Inter-cumulative effects.

14.2.3 An assessment of the potential cumulative effects was undertaken within each of the technical chapters.

14.2.4 A summary of the cumulative effects of the scheme are provided below and within Table 14.2, with further details provided within each technical chapter.

Intra-cumulative effects

14.2.5 The EIA has taken into consideration where a significant residual impact is expected to occur on a particular receptor as a consequence of collective actions, aspects or effects of the Proposed Development.

14.2.6 Owing to the fact the only significant adverse residual effects relate to visual effects, and the general low level of effects overall, it is unlikely that any single receptor would experience significant adverse intra-cumulative effects as a result of a combination of the one or more of the effects identified within this ES. As such, it is not considered that the receptors identified within the technical chapters would experience any other adverse effects which could potentially result in significant cumulative effects.



Inter-cumulative effects

14.2.7 In relation to inter-cumulative effects, the EIA has considered committed developments in the area surrounding the Site which, in conjunction with the proposed development, could collectively impose a significant impact on the environment.

14.2.8 Further details on the schemes considered are set out within Chapter 2.

Table 14.2 Summary of Cumulative Effects	
Technical Chapter	Summary of Cumulative Effects
Noise	As the Proposed Development does not increase predicted traffic flows, there is no change to the impact or cumulative effects due to road traffic noise from nearby developments. Should construction of any of the committed developments occur at the same time as the construction of the Proposed Development this will be controlled by the local authority. As such, it is not considered likely that there will be any significant cumulative effects on Noise.
Air Quality	It is assumed that all developments will implement industry standard mitigation and therefore it is unlikely that cumulative impacts from dust generation, during construction, will arise. As there is no additional traffic associated with the Proposed Development any cumulative impact resulting from surrounding developments on local sensitive receptor locations is not considered to be a result of the Proposed Development. Cumulative traffic impacts from committed developments do have the potential to increase pollutant concentrations in the vicinity of the Proposed Development and could cause future site users to be exposed to poor air quality. An assessment of future exposure at the Proposed Development was included in the main assessment which didn't identify any significant effects.
Townscape & Visual	As the existing area surrounding the Site is already characterised by modern built form and given the existing high-density townscape at the periphery of Castlefield Conservation Area, introduced by the Great Jackson Street Development Framework, it is considered that the Proposed Development will not add to or combine with the identified cumulative developments to create a significant cumulative townscape effect. The visual effects during the construction phase are likely to be significant due to high visibility of the crane and disruption of the streetscape. However, the resulting significant effects would be, by definition, temporary, short term (less than 5 years) and potentially staggered through time based on the construction programme of each additional proposal. In terms of the cumulative visual effects, users of the Cheshire Ring Canal Walk will experience significant effects due to the competition between the increasing urban character of modern architecture and existing heritage features, which causing the accidental visual loss of a distinctive

Table 14.2 Summary of Cumulative Effects	
Technical Chapter	Summary of Cumulative Effects
	feature (i.e. the railway viaduct). Users of Hulme Park will also experience a significant adverse effect due to the densified skyline of tall buildings which will detriment the intrinsic open nature of the view. Significant visual effects will also occur along Whitworth Street West due to the loss of heritage visual amenity. Notably, in these last two instances, the contribution of the Proposed Development to the significant effect is virtually none as the scale and height of the additional proposals cause most of the visual impact. Overall, it is noted that there would be some significant cumulative effects in visual terms; although the majority of the identified viewpoints will experience a neutral or beneficial effect, as the proposed skyline expansion appears appropriate to the existing context and respectful of the historical value of the identified views.
Built Heritage	The area is already characterised by a built form, which is a combination of new contemporary additions and historic built form of a varying scale and type and age. Consequently, the character of this area is varied, and it is not considered likely that there will be any significant cumulative effects on heritage assets when considering the Proposed Development.
Daylight & Sunlight	Cumulative schemes within the area around the Proposed Development have been included in the main assessment which didn't identify any significant effects. Therefore, it is not considered likely that there will be any significant cumulative effects on Daylight & Sunlight.
Wind Microclimate	Cumulative developments will have an impact on the wind speeds experienced at the Proposed Development. The development to the north of the A56 appears to be creating a funnel with the Proposed Development along the A56 which creates higher wind speeds in this area. The Deansgate Square development appears to be shielding the Proposed Development from winds from the south and southeast, although it is indicated that wind is being funnelled between the Proposed Development and the Deansgate Square development along Deansgate Road particularly from winds from a westerly direction. Following the implementation of mitigation in the form of tree planting it is not considered that these cumulative effects will be significant.
Socio-Economics	During construction there is potential for cumulative benefits in construction employment and spend within the local supply chain. Further, enhanced skills and experience acquired by employees during the construction phase could improve their employability on other local developments, in turn contributing to a longer-term reduction in Manchester's higher unemployment rate.

Table 14.2 Summary of Cumulative Effects	
Technical Chapter	Summary of Cumulative Effects
	The cumulative impact of housing delivery in the local area will benefit Manchester's housing delivery targets and related economic growth aspirations. This will diversify and enhance the mix and quality of the City's housing offer, consequently attracting more residents, increasing footfall and spend, and creating more jobs, thus raising perceptions of Manchester as a place to live, study and work and in turn, increasing sale and rental values, enhancing market confidence and encouraging further investment and physical development. The cumulative impact from increased population, job creation and local spend will encourage new local businesses to be established and enable existing businesses to be sustained and to grow resulting in further indirect benefits in the form of additional employment and productivity. The delivery of other local development schemes will have a cumulative impact on the demand for health services and capacity of those services to meet that demand which could be a minor adverse cumulative effect (not significant). In summary it is not considered that there will be significant cumulative socio-economic effects.

NEXT STEPS

Correspondence

This ES has been submitted to Manchester City Council (MCC) for the respective Planning Officers to consider in consultation with the relevant stakeholders in the context of planning policy, prior to making a recommendation to the planning committee on the planning application.

During the period of determination, MCC will contact the relevant government bodies and agencies, and other consultees regarding the Proposed Development. Members of the public are also invited to make comments on the planning application.

Comments can be sent to:

Planning
Strategic Development Directorate
Manchester City Council
P O Box 532
Manchester
M60 2LA

Email: planning@manchester.gov.uk

Online¹: <https://pa.manchester.gov.uk/online-applications/>

Feedback from these discussions will be taken into account by the MCC in reaching the decision on the planning application.

Copies of the Environmental Statement

The ES, including a copy of the planning application documents and NTS, will be available to view online on the MCC planning website: <https://www.manchester.gov.uk/planning>

Hardcopies or CDs of the ES and NTS are also available and are charged at £25 per CD and £450 per hard copy plus P+P.

¹ To comment on an application, select the 'Make a Comment' button or click the Comments tab once you have found the application using the search function.



Coronavirus Amendments

The Town and Country Planning (Local Planning, Development Management Procedure, Listed Buildings etc. (England) (Coronavirus) (Amendment) Regulations 2020/1398 (“the further Coronavirus Amendment regs”) allows for the publicity and inspection of documents (including an ES) to be undertaken electronically.

As set out above, the application documents can be accessed on MCC’s planning website.

STATEMENT OF EXPERTISE

This Environmental Statement has been prepared by competent experts, and the following statement outlines the relevant expertise and qualifications of the EIA Co-ordinator and the lead author of each technical chapter.

Environmental Statement

The ES has been prepared and co-ordinated by Susan Raine, BSc MSc PIEMA, Associate Director at Wardell Armstrong LLP. Susan has an MSc in Environmental Impact Assessment and Management from the University of Manchester and is also a Practitioner member of the Institute of Environmental Management and Assessment (IEMA). Susan has extensive experience in the co-ordination of EIAs and the preparation of ESs for a range of developments.

Wardell Armstrong LLP is a registrant of the IEMA EIA Quality Mark, demonstrating their commitment to excellence in their EIA activities. Susan manages Wardell Armstrong's registration to the EIA Quality Mark, ensuring the high standard of the scheme is adhered to.

Noise

The Noise Chapter has been prepared and co-ordinated by Weigang Wei, technical specialist at Apex Acoustics Ltd. Weigang has a PhD in Environmental Noise from Ghent University Belgium. Weigang is a full member of the Institute of Acoustics (MIOA). Weigang has extensive experience in the co-ordination of EIAs and the preparation of ESs for a range of developments.

Apex Acoustics Ltd is an award-winning independent acoustic consultancy founded in 2006. Apex Acoustics operates from 3 locations across the UK and employs 20 dedicated consultants, demonstrating their commitment to excellence in their EIA activities.

Air Quality

The Air Quality Chapter has been prepared by Lewis Ellison MSc (Hons), Air Quality Consultant and Conal Kearney BEng (Hons) MSc MEnvSci MIAQM, Head of Noise and Air at Ensaf Consultants.

Lewis has an MSc in Geological Oceanography from the Bangor University and has extensive experience in the production of Air Quality Assessments both as stand-alone assessment and as part of larger Environmental Statements for a wide range of UK clients and sectors.

Conal has a BEng in Civil and Structural Engineering from the University of Bradford and MSc in Environmental Pollution Control from Birmingham City University. Conal is also a member of both the Institute of Environmental Sciences and the Institute of Air Quality Management. Conal has over 20 years' experience in the production and project management of Air Quality Assessments in support of planning applications for a wide range of UK clients and sectors.

Townscape & Visual

The Townscape and Visual Chapter has been prepared by Martina Sechi (BSc BE MALA CMLI), Principal Landscape Architect at Bidwells LLP. Martina has a Masters in Landscape Architecture and is also a Chartered Member of the Landscape Institute. She has contributed to a comprehensive range of landscape assessment projects, including Landscape and Visual Impact Assessment and Townscape Visual Impact Assessment as part of ES.

Build Heritage

The Built Heritage Chapter has been prepared by Kate Hannelly-Brown (BSc (Hons) MSc IHBC) Associate Heritage and Design at Bidwells LLP. Kate has an MSc in Historic Conservation from Oxford Brookes University and is also a full member of the Institute of Historic Buildings Conservation (IHBC). Kate has significant experience of projects of varying scale and type across the UK, including the provision of ES chapters on a number of complex, heritage-related developments. She has detailed knowledge of both the urban and rural historic environment and ensures that her advice is based on a proper understanding of the site and the issues.

Daylight & Sunlight

The Daylight & Sunlight Chapter has been prepared by Michael Beatty. Michael is a chartered surveyor and Associate Partner of GIA in Manchester, with over 5 years' experience specialising in the preparation of daylight and sunlight ES chapters. GIA are the largest specialist daylight and sunlight advisor in the UK, with over 25 years of specialisation and

expertise. Most recently, Michael has prepared ES chapters for a major mixed-use regeneration scheme in Birmingham, spanning a 2-acre site, and a new arena complex in Gateshead, both for public/private sector joint venture clients. Michael has prepared ES chapters for several large developments around the country, with particular focus on Manchester and Salford, for a range of private and public sector clients.

Wind Microclimate

The Wind Microclimate Chapter has been prepared by lead author Paul Evans Bsc(Hons) CEnv MEI, Service Area Director (Energy and Climate Change) at Wardell Armstrong LLP.

Paul is a chartered environmentalist with the Energy Institute. He has over 17 years' experience working exclusively in the fields of renewable energy and climate change and has been involved in several innovative and unique projects. He has completed numerous EIAs for a wide variety of national and international projects and has also developed energy strategies for large scale housing developments across the UK.

Socio-Economics

The Socio Economics Chapter has been prepared by Heather Standidge, BA(Hons) MSc MIED, Associate Director at Cushman & Wakefield. Heather has an MSc in Local and Regional Economic Development and is a Member of the Institute of Economic Development (MIED). With over 15 years' regeneration experience with a specialism in the economics of development, Heather has undertaken numerous analyses of the socio-economic benefits to support both planning applications and business cases for public sector funding across all property sectors.

Cushman & Wakefield is a global leader in commercial real estate services. Our global network of developers, investors and occupiers and in-depth knowledge of the key property sectors, is distilled to the local level by our development consulting team who have an in-depth appreciation of the local policy, economic and property context to provide clients with robust and bespoke recommendations that support delivery of development whilst maximising benefits to the local area including the community.

REFERENCE LIST

Schedule 4 of the EIA Regulations states that a reference list of the sources used in the preparation of the Environmental Statement should be included. References are included within the respective chapters where relevant, and a complete list is provided below.

Noise

British Standard 4142:2014+A1:2019: Methods for rating and assessing industrial and commercial sound (BS 4142, 2019)

British Standard 5228: Code of Practice for Noise and Vibration Control on Construction and Open Sites (BS 5288-1, 5288-2, 2014)

British Standard 6472-1 'Guide to evaluation of human exposure to vibration in buildings' (6472-1, 2008)

British Standard 7385 Part 2: Evaluation and measurement for vibration in buildings – Part 2: Guide to damage levels from ground borne vibration' (BS 7385-2, 1993)

British Standard 8233:2014: Sound Insulation and Noise Reduction for Buildings (BS 8233, 2014)

Calculation of Road Traffic Noise (CRTN, 1988)

Design Manual for Roads and Bridges (DMRB, 2019)

Environmental Protection Act (1990)

GD03 Information for Developers City Wide Support: Environmental Protection (2015)

Guidance for Environmental Noise Impact Assessment, Institute of Environmental Management and Assessment (IEMA 2014)

Manchester City Council Planning & Noise Technical Guidance (2015)

National Planning Policy Framework (NPPF, 2019)

Noise Policy Statement for England (NPSE, 2010)

Planning Practice Guidance (PPG, 2019)

The Control of Pollution Act (1974), Part III

The Town and Country Planning (Environmental Impact Assessment) Regulations (EIA, 2017 Regulations)

Air Quality

Background Mapping data for local authorities (2018). Available at: <https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2018>

Greater Manchester Combined Authority 2019 Air quality Annual Status Report

Guidance on the Assessment of Dust from Demolition and Construction, Institute of Air Quality Management, (2016)

Land-Use Planning and Development Control: Planning for Air Quality, EPUK and IAQM, (January 2017)

Local Air Quality Management Technical Guidance 2016 LAQM (TG16), DEFRA, (February 2018)

The Air Quality Strategy for England, Scotland, Wales and Northern Ireland, DEFRA, (2007)

Townscape & Visual

Aerial photography: Google Maps. Available at: <http://maps.google.co.uk>

Great Jackson Street Development Framework (May 2018 update, Deloitte Real Estate)

Guide to Development in Manchester Supplementary Planning Document and Planning Guidance (April 2007)

‘Guidelines for Landscape and Visual Impact Assessment’, (GLVIA3) produced by the Landscape Institute with the Institute of Environmental Management and Assessment (Third Edition, 2013)

Local Development Framework: Strategic Level City-Wide Urban Characterisation for Core Strategy (November 2010, Design, Conservation & Project Team, Planning Service)

Manchester’s Local Development Framework, Core Strategy Development Plan Document (July 2012)

Multi-Agency Geographic Information for the Countryside (MAGIC): Web-based interactive GIS mapping site. Available at: www.magic.gov.uk

National Planning Policy Framework (February 2019)

Natural England, National Landscape Character profiles

Ordnance Survey 1:10,000 scale Application Site-centred digital raster map

'Residential Visual Amenity Assessment' (RVAA), Technical Guidance Note 2/19, by the Landscape Institute (15 March 2019)

'Tall Buildings', Historic England Advice Note 4, by Historic England (December 2015)

'Townscape Character Assessment', Technical Information Note 05/2017, by the Landscape Institute (5 December 2017)

'Visual Representation of Development Proposals'. Technical Guidance Note 06/19, by the Landscape Institute (17 September 2019)

Manchester City Council (MCC): Castlefield Conservation Area. Available at: https://secure.manchester.gov.uk/info/511/conservation_areas/972/castlefield_conservation_area

Built Heritage

Britain from Above (1934). Aerials

Highways Agency, Transport Scotland, the Welsh Assembly Government and the department for Regional Development Northern Ireland (2018). Design Manual for Roads and Bridges.

Historic England (2019). Analysing Significance in Heritage Assets Advice Note 12

Historic England (2008). Conservation Principles: Policies and Guidance

Historic England (2016). Making Changes to Heritage Assets Advice Note 2

Historic England (2015). Managing Significance in Decision Taking in the Historic Environment
Historic Environment Good Practice Advice (GPA) in Planning Note 2

Historic England (2015). Tall Buildings Historic Advice Note 4

Historic England. The National Heritage List for England. Available at <https://historicengland.org.uk/advice/hpg/heritage-assets/nhle/>

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Manchester University Library (1941). Record of Location of Aerial Bombs on the City of Manchester by Manchester Council City Architect's Department

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Ministry of Housing, Communities & Local Government (2019). Planning Practice Guidance

National Ordnance Survey (1848-1977). Historic Maps

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Daylight & Sunlight

BS 8206-2:2008 (2008). 'Lighting for Buildings – Part 2: Code of Practice for Daylighting'. BSI British Standards.

Daylighting and window design: Lighting Guide LG10, published November 2014. CIBSE.

Guide to Development in Manchester Supplementary Planning Document and Planning Guidance, adopted April 2007. Manchester City Council

Littlefair, P J (2011). 'Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice'. Building Research Establishment (BRE).

Manchester's Local Development Framework – Core Strategy Development Plan Document, adopted 11th July 2012. Manchester City Council

The National Planning Policy Framework (NPPF) (Revised), adopted 27th March 2012. Ministry of Housing, Communities & Local Government

The National Planning Practice Guidance (NPPG) – Making Efficient Use of Land, published 22nd July 2019. Ministry of Housing, Communities & Local Government

Wind Microclimate

Manchester Core Strategy 2012 to 2027

The National Planning Policy Framework (NPPF) (February 2019)

Wind Microclimate Guidelines for Developments in the City of London – City of London Corporation and RWDI

Socio-Economics

Building Cost Information Service (BCIS) cost data

CACI, Retail Footprint Expenditure Data (2019/20)

Department for Education, Student Income and Expenditure Study (2014/15)

Higher Education Statistics Agency (HESA) data (2018/19)

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<https://www.police.uk/>

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ONS, Annual Population Survey (July 2019 – June 2020)

ONS, Business Population Estimates (2017)

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ONS, Regional GVA (2018)

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