AVISON YOUNG

Environmental Statement Volume 2: Main Text

Proposed Residential-Led Development

Land bound by Rochdale Road, Shellard Road, Harrowby Drive, Johnny King Close, Thornton Street North, Stretton Close and Marston Street, Collyhurst, Manchester

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Avison Young

Environmental Statement Volume 2 – Main Text

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1. Introduction

Introduction

1.1 Far East Consortium International Limited ('FEC') and Manchester City Council ('MCC')(hereafter referred to as the 'Applicants') is seeking to obtain planning permission for a residential-led development on land bound by Rochdale Road, Shellard Road, Harrowby Drive, Johnny King Close, Thornton Street North, Stretton Close and Marston Street, Collyhurst, Manchester, known as 'Collyhurst Village' (hereafter referred to as the 'site'). The site is located within the administrative authority of MCC. The planning application to which this Environmental Statement (ES) directly relates is a full planning application for a proposed residential development at the site.

1.2 The planning application boundary is shown edged red on an Ordnance Survey (OS) base map presented at **Drawing Ref. 8871-BA-SC-XX-DR-A-(01)100** within **Volume 2a: Main Text Figures**. The site is described in detail in Chapter 3: Site Description. A detailed description of the development is provided in Chapter 5: The Proposed Development, which is supported by a series of plans and drawings.

1.3 Avison Young has been commissioned by the Applicants to co-ordinate the Environmental Impact Assessment (EIA) process and produce the ES for the proposed development which has been produced by competent EIA experts who specialise in the coordination of the EIA process and production of ESs. As such, this ES has been coordinated by Avison Young's environmental management team who are members of the Institute of Environmental Management and Assessment (IEMA). The ES aims to provide sufficient information to enable MCC to make an informed decision on whether to grant planning permission.

The Site

1.4 The site is irregular in shape and occupies approximately 4.7 hectares ('ha') in area.

1.5 The site comprises 29 residential dwellings, a convenience shop, areas of hardstanding, amenity grassland and trees. The site is bound to the west by Rochdale Road (A664), to the north by an unnamed footpath, woodland and a car dealership, to the east by Anslow Close, Churnet Street and Thornton Street North and to the south by Shellard Road. Paget Street bisects the centre of the site in an east / west orientation.

Development Proposals

Outline of the Proposed Development

1.6 Environmental constraints and potential adverse effects have been identified throughout the EIA process and, as a result, mitigation measures have been incorporated into the proposals through design. Where

environmental mitigation measures have not been integrated into the proposals through design, it is expected that the requisite mitigation measures will be secured by appropriate planning conditions where relevant. These have been identified where appropriate in each technical chapter (Chapters 7-14) and summarised in Chapter 16: Summary of Mitigation and Residual Effects.

1.7 The proposals comprise circa 244 high quality homes at Collyhurst Village which is located in the Collyhurst Village neighbourhood of the Northern Gateway Strategic Regeneration Framework. Collyhurst Village will comprise a mix of tenures including shared ownership.

1.8 The proposed development incorporates high-quality residential apartments, townhouses, maisonettes and commercial space that complement and enhance the character of the surrounding area as well as setting a tone for the future regeneration of the Collyhurst Village neighbourhood.

1.9 Demolition of the 29 existing residential dwellings and shop on the Collyhurst Village site will also be applied for. It should be noted that the residential dwellings will be demolished after new social housing on site has been constructed.

1.10 The development will also feature commercial uses facing Rochdale Road and a new park.

1.11 The full description of development on the planning application form for the proposed development is:

"Full planning application proposing the demolition of the existing 29 residential properties, the Collyhurst Village Store, and associated car parking on Thornton Street North, Harrowby Drive, Johnny King Close, Anslow Close and Churnet Street and erection of a residential led-development comprising 3 and 4 storey houses; 2no 5 and 6 storey apartment buildings (Use Class C3) with ground floor flexible commercial units (Use Class E); and the creation of a new park with associated car parking, cycle and refuse storage, landscaping, public realm and infrastructure"

The Planning Application and Environmental Impact Assessment

EIA Context

1.12 EIA is a systematic process by which information about the scope and likely environmental effects of a proposed development are assessed and presented to the Local Planning Authority (LPA), relevant stakeholders and the public to inform the decision on whether the development should be granted planning permission.

1.13 The proposed development constitutes 'EIA development' under the Town and Country Planning (Environmental Impact Assessment) (England) Regulations 2017 (SI 2017/571) (hereafter referred to as the 'EIA Regulations'). Criteria for establishing the need for an EIA are set out in Schedules 1 and 2 of the EIA Regulations. The proposed development falls under Schedule 2, Category 10 'Infrastructure Projects', Subsection (b) 'Urban Development Projects'.

1.14 This document is the ES which reports the findings of the EIA and supports the planning application for the proposed development. It has been prepared by Avison Young with technical contributions from a range of specialist consultants experienced in EIA (see **Appendix 1.1**).

The Planning Application and the Environmental Statement

1.15 This ES relates to the planning application which is defined by the description of the development and the detailed plans for development that accompany the application.

The Planning Application Package

i. Covering letter;

ii. Application form, relevant land ownership certificate (duly signed) and relevant planning application fee;

iii. Site Location Plan prepared by Buttress;

iv. Full set of application drawings for approval prepared by Buttress (please see the Drawing Schedule at Appendix II);

v. DAS (including Landscape Design and Access Section and Refuse Management Strategy) prepared by Buttress;

vi. Statement of Community Involvement prepared by Counter Context;

vii. Ecology Report prepared by TEP Including Bat Activity Survey, Bat Roost Survey, Biodiversity Net Gain Calculation and Invasive Plant Species Survey);

viii. Phase II Ground Investigations prepared by Civic Engineers;

ix. TV Reception Survey prepared by GTech;

x. Crime Impact Statement prepared by Greater Manchester Police;

xi. Archaeology Assessment prepared by Salford Archaeology;

xii. Heritage Assessment prepared by Salford Archaeology;

xiii. Tree Survey and Arboricultural Impact Assessment prepared by Amenity Tree Care;

xiv. Lighting Assessment prepared by Watt; and

xv. Environmental Statement prepared by Avison Young.

The Environmental Statement

1.16 The ES is divided into four volumes and the contents outlined below:

- **Volume 1: Non-Technical Summary** – A document providing a synopsis of the ES without utilising technical language. The summary includes a description of the development, the potential environmental effects associated with the development and the measures proposed to mitigate these impacts.

- **Volume 2: Main Text –** This volume contains the main body of text of the ES, split into chapters. It provides an introduction, the approach to assessment, the assessment of alternatives, a description of the proposed development, a review of relevant planning policy, a series of technical assessments relating to specific environmental topics including cumulative and combined effects and a summary of residual effects.
- **Volume 2a: Main Text Figures** – This volume contains the figures which are provided to support the main text ES Chapters.
- **Volume 3: Appendices** – This volume contains supporting information and a collection of technical reports upon which the conclusions of the ES are based.

Environmental Statement Availability

1.17 The Non-Technical Summary, ES and Appendices are available for viewing at MCC Offices. Further copies of the ES and Technical Appendices are available on CD at a cost of £25 from Avison Young. Contact details are as follows:

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M2 1DW

Contact: Richard Kevan

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Lloyd Street
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2. Approach

Introduction

2.1 This chapter describes the methodology used to undertake the EIA in accordance with the Town and Country Planning (Environmental Impact Assessment) (England) Regulations 2017 (SI 2017/571) and National Planning Practice Guidance (NPPG).

2.2 The chapter begins with a description of the general approach to assessment and EIA regulatory compliance, including how the planning application and EIA are linked. EIA procedure and methodology is presented, then the stakeholder consultation process is explained, and the consultees listed, before the spatial and temporal scope of the assessment is discussed.

2.3 Following this, the criteria used for impact prediction, assessing significance and implementing and securing mitigation measures are explained, along with any limitations and assumptions. With regard to the methodologies and assumptions for the technical assessments, each chapter has its own specific assessment methodology and assumptions, which are explained within the relevant sections.

2.4 A wide range of experience, resources and skills have been coordinated in order to bring together this application and the project team, along with their professional roles, is presented at the end of this chapter.

EIA Procedure and Methodology

EIA and Regulatory Compliance

2.5 The EIA Regulations, supported by precedents in UK case law, have established the legal framework for the process of EIA and the contents of environmental statements. The planning application is submitted in full and the application description of development, plans and schedule of accommodation provides sufficient detail to identify, predict and assess the significance of any potential environmental impacts.

EIA Assessment Parameters

2.6 The EIA is based on the written description of the proposed development including construction timescales, the site red line application boundary (**Drawing Ref. 8871-BA-SC-XX-DR-A-(01)100**) and the quantum of development (see: Chapter 5: The Proposed Development). These parameters, along with detailed plans and elevations submitted for approval as part of the application, allow the likely significant effects of the proposals to be fully assessed and appropriate mitigation measures secured.

2.7 The Design and Access Statement produced by Buttress (January 2020) which accompanies the planning application, presents further information about the proposed development.

Screening

2.8 Regulation 6 of the 2017 EIA Regulations makes provision for a developer to request a 'Screening Opinion' from the Local Planning Authority (LPA) to ascertain whether an EIA is required if a development is classed as a Schedule 2 development. This decision is based on the likelihood of significant environmental effects arising in relation to the development proposals. In this instance, it is considered that the proposals constitute 'EIA Development' due to the scale, nature and location of the proposed development. Accordingly, a request for a formal EIA Screening Opinion has not been submitted.

Scoping

2.9 Scoping is a process that, through research and consultation, identifies the environmental issues that require assessment as part of the EIA. This essentially refines the focus of the EIA on the environmental aspects which are likely to be subject to significant environmental impacts whilst also ensuring that no potentially significant areas are overlooked. In accordance with Schedule 4 of the EIA Regulations, likely significant effects of the development on the environment should be considered, in particular effects on; population, human health, biodiversity (fauna and flora), land, soil, water, air, climate, material assets, cultural heritage, landscape and the inter-relationship between the above factors.

2.10 In accordance with Regulation 15 of the 2017 EIA Regulations, a formal request for a Scoping Opinion was made to MCC on 13th March 2020, accompanied by an EIA Scoping Report which set out those topics identified as requiring assessment through the EIA process in line with Schedule 4 of the EIA Regulations.

2.11 A formal Scoping Opinion was issued by MCC on 20th April 2020. Consultation responses received as part of the scoping exercise are noted in Table 2.1 below. The scoping responses received confirmed the proposed approach to assessment for a number of the topics 'scoped into' the assessment. A copy of the EIA Scoping Report can be found at **Appendix 2.1** and a copy of the Scoping Opinion received from MCC can be found at **Appendix 2.2**.

2.12 The scoping process concluded that there were potentially significant environmental effects in relation to the below topics and that these should be included in the EIA:

- Townscape and Visual;
- Drainage and Flood Risk;
- Transport and Access;
- Air Quality;

- Noise and Vibration;
- Socioeconomics;
- Human Health; and
- Climate Change.

2.13 MCC's Scoping Opinion confirmed that the proposed approach to assessment was acceptable for a number of the above topics. MCC also provided comments on the proposed scope of specific topics. In particular, MCC requested that some additional topics were scoped into the EIA, namely drainage and flood risk, human health and climate change. A summary of the comments provided in the Scoping Opinion and where these are addressed in the ES is set out in Table 2.1.

2.14 A number of other technical topics were 'scoped out' of the EIA and identified as not significant. This approach was approved through the MCC scoping process (see **Appendix 2.2**). A description of the non-significant topics and reasons for scoping these out of the EIA is provided in Table 2.2.

2.15 It should be noted that the EIA Scoping Report was prepared which included two application sites which was to be covered by one 'global' EIA. The first application for up to 300 dwellings known as Collyhurst Village (which this application relates to) and a second application for 30 residential dwellings known as Collyhurst South. It was subsequently decided that the two sites should be applied for separately with the Collyhurst South site being applied for at a later date and as such is not assessed within this ES. For robustness, the scope of the EIA has been prepared in line with the agreed scope for the wider site as per the Scoping Opinion received in April 2020.

Table 2.1: Comments on EIA Scope

Consultee	Summary of Comments	Actions
Manchester City Council (MCC)	**General Comments** For planning purposes, the development site is located in a Strategic Housing Location (policy H2) of the Manchester Core Strategy (2012) together with forming a key component of the North Gateway Strategic Development Framework (SRF). The significance of the site should be reflected throughout the ES. The Environmental Chapters must therefore consider the impacts of the Proposed Development on this context in order to determine any wider significant environmental impacts. **Air Quality** MCC state that "*Potential construction effects should consider any impacts on air quality from the use of plant and equipment together with the impact from emissions from construction vehicles and construction workers vehicles in and around the development site.*"	Each technical chapter contains an 'In Combination Effects' section which assesses the potential impact of the proposed development in combination with the wider Northern Gateway SRF A qualitative construction dust assessment was undertaken in accordance with the Institute of Air Quality Management (IAQM) document 'Guidance on the Assessment of Dust from Demolition and Construction V1.1'. In regard to the consideration of construction vehicles, it is considered unlikely that vehicle exhaust emissions from on-site plant and site traffic will have a significant impact on local air quality, given the size and nature of the proposed

Consultee	Summary of Comments	Actions
	MCC note that "*The likely impacts of air quality on climate change require consideration within this chapter of the ES. This should include consideration of the extent that the Proposed Development will contribute to greenhouse gas emissions, either through vehicles accessing the development during construction and the operation of the development, through to the wider operations of the development and running of the new homes. Impacts on air quality should also be considered in the context of the broader Northern Gateway proposals.*" **Socioeconomics** MCC note that the approach to the socioeconomic assessment is acceptable. **Noise and Vibration** MCC note that the approach to the noise and vibration assessment is acceptable. **Townscape and Visual** MCC note that the approach to the townscape and visual impact assessment (TVIA) is acceptable. At the time of writing the scoping opinion, the viewpoints for the TVIA had not been identified and as such MCC reserved the right to comment further once the viewpoints had been identified.	development. As such, this was not considered further within the assessment. The impacts on climate change as a result of emissions originating from the proposed development at the construction and operational stages are covered in Chapter 14: Climate Change. Noted Noted Following consultation with MCC, the viewpoints were identified and agreed.

Consultee	Summary of Comments	Actions
	Drainage and Flood Risk MCC state that "*Due to the scale of the Proposed Development, a full flood risk (FRA) assessment should be carried out.*" *MCC continue to note that "It is essential that the ES considers how surface water from the Proposed Development will be captured, treated and disposed of both during the construction and operational phases.* *There is potential run off and discharge during the construction process which has the potential to impact on the canal, which could impact upon water quality."* MCC state that the ES and any strategy for surface water management during the operational phase, the Proposed Development needs to follow the drainage hierarchy: • Infiltration into ground; • Connection to the watercourse; • Connection to discharge water sewer; and (as a last resort); • Connection to the combined sewer. MCC note that "*Presence of made ground on the site is suspected. Site investigations and percolation tests in line with BRE 365 Digest should be undertaken as part of ES to*	An FRA is included at Chapter 9: Flood Risk and Drainage. A Drainage Strategy is presented within **Appendix 8.1** which is notes how surface water runoff will be captured, treated and disposed of both during the construction and operational phases. See Chapter 8: Flood Risk and Drainage. The Drainage Strategy (see **Appendix 8.1**) has been developed in line with the drainage hierarchy. Infiltration testing was carried out as part of the Phase 2 Geo-environmental Investigation which is submitted in support of the planning

Consultee	Summary of Comments	Actions
	assess feasibility of infiltration into the ground as a method of surface water disposal."	application. This has informed the Drainage Strategy (see **Appendix 8.1**).
	MCC note that "*due to the presence of the Moston Brook in culvert, if infiltration on the site is not possible, the ES should give consideration to the next discharging point for surface water which is the watercourse. Any works within or adjacent to the watercourse that would affect it would require consent from the Environment Agency."*	See **Appendix 8.1** for details of surface water discharge from site.
	MCC "*strongly recommends the use of sustainable drainage systems (SuDS) as part of controlling surface water and no exacerbating existing conditions.*	SuDS features have been proposed as part of the proposed development (see Chapter 8: Flood Risk and Drainage).
	The ES should consider SuDS as a method to control surface water as close to its source as possible."	
	MCC state that "*The ES should consider controlling surface water through the use of SuDS in the interest of climate change and the overall sustainability of the Proposed Development and reducing any likely significant impacts on the wider area but also helping to inform how drainage will be dealt with across the Northern Gateway."*	The proposed Drainage Strategy has been developed to manage surface water flows up to the 1 in 100-year storm event plus 40% allowance for climate change (see **Appendix 8.1**).
	MCC note that "*Green roofs, green walls, tree planting and other forms of green infrastructure should be considered to allow for the adaption to climate change in such a heavily urbainsed area.*"	Extensive tree planting and green infrastructure is included within the proposed landscaping of the development (see the Design and Access Statement submitted in

Consultee	Summary of Comments	Actions
	Transport and Access MCC state that the Transport Assessment (TA) should "*provide a description of the current base traffic conditions in the area. In terms of highway safety, there will need to be an analysis of injury accidents during a recent five year period together with commentary on any underlying patters of injury accidents which may affect this development or exacerbated*" "*There will also need to be traffic and queue surveys (weekdays) and the scope agreed with the City Council, as Local Planning Authority. A clear estimate of the level of new traffic likely to be associated with the development, based on an inspection of similar (and similarly-located) developments across the UK (excluding London) via the TRIGS (or similar) database should be undertaken*." MCC state there should be "*a clearly defined methodology for determining the distribution / assignment of development trips onto the network i.e. understanding of where such new traffic is likely to distribute to/from, based on data sources such a Census Journey-to-Work statistics and/or vehicle turning proportions at nearby junctions.*" MCC note that there "*should also be an assessment of traffic levels and impacts at the specified year of opening of the development, and at a future year at least five years later, with due regard for traffic growth (if any) together with an understanding of the likely impacts of the proposed development considered alongside any other nearby*	support of the application). The TA provides a description of the baseline conditions on site and the surrounding area (see Chapter 9: Transport and Access and **Appendix 9.1**) The Transport chapter (Chapter 9) and the TA (**Appendix 9.1**) provide full details of the existing traffic conditions and the likely impacts as a result if the proposed development. See Chapter 9: Transport and Access and **Appendix 9.1** for details of the methodology used for the TA. Noted. Due to the distribution of traffic from the site showing there to be no junctions experiencing more than 30 two-way trips during the peak hour (a threshold the MCC have for carrying out traffic analysis and

Consultee	Summary of Comments	Actions
	committed developments."	junction modelling) it was determined that no analysis was required for future years. This has been agreed with MCC.
	MCC state that "*An increase of about 30vehs/hr at a junction is an appropriate threshold for considering the necessity of a traffic impact assessment; this is in preference to a percentage increase threshold, which tends to favour development in already heavily -trafficked areas*."	Noted
	MCC note that "*The scope of the junctions to be assessed by detailed modelling should be agreed with the City Council, as Local Planning Authority/Local Highway Authority, in advance and will depend upon the outcome of the trip assessment and distribution exercise. It is advised that a trip generation and distribution exercise should be issued before submission of the planning application*."	The scope of the TA has been agreed with MCC.
	"There should be clear details of proposed vehicular access arrangements including general servicing arrangements. An engineering drawing should be supplied showing the changes to the road network to fully understand the impact of the proposed development. A swept path analysis should be provided for any vehicular access.	Details of the access arrangements are included within the TA as well as swept path analysis (see **Appendix 9.1**)
	It will also be necessary to do a review of Traffic Regulation Orders on the surrounding streets in the vicinity of the development sites.	A review of the Traffic Regulation Orders has been undertaken as part of the TA (see **Appendix 9.1**)
	There should also be an assessment of the likely environmental/traffic impacts of HGVs	A full construction phase assessment has been

Consultee	Summary of Comments	Actions
	during the construction process. The TA should also include a comprehensive review of the existing provision in the vicinity of the site for all pedestrians and cycling facilities including those with disabilities. In addition to walking distances and pedestrian desire lines, pedestrian environment (including footway condition and widths) and pedestrian safety and security should be considered." MCC note that "*A Travel Plan document incorporating actions that are aimed at encouraging sustainable travel during both the construction and operational phases of the Proposed Development is an essential component and the effects should be evaluated through the ES*." MCC state that "*Air quality, climate change and human health impacts should be measured within this chapter of the ES as part of the incorporation of measures from the travel plan and any other mitigation measures to support public transport and other infrastructure. This would also demonstrate that the car parking and the capacity of the highway network is not exacerbated beyond existing baseline conditions both within the regional and city centres and wider Northern Gateway area, during the construction and operational phrases of the Proposed Development.*" **Climate Change** MCC note that there are potential for significant impacts on climate change at the construction and operational phases and as such should be scoped into the EIA. Impacts and mitigation measures noted in the other chapters of the ES should be	provided in Chapter 9: Transport and Access. An assessment of the pedestrian and cycling facilities is provided in Chapter 9: Transport and Access and within the TA (**Appendix 9.1**). A Travel Plan is provided at **Appendix 9.2** of this ES. Impacts on air quality, climate change and human health as a result of transport are covered in chapters 10, 11 and 13 of this ES. Climate change has been scoped into the EIA and is presented at Chapter 14: Climate Change.

Consultee	Summary of Comments	Actions
	considered within the climate change chapter. **Human Health** MCC state that there are potential for significant impacts on human health as a result of the proposals at the construction and operational phases and as such should be scoped into the EIA. MCC note that *"Matters of air quality, transport and traffic, flood risk, noise and vibrations and socioeconomic effects have all been scoped into the ES due to these disciplines having significant environmental impacts. All of these matters affect Human Health and therefore the Proposed Development is likely to give rise to significant environmental impacts on the Human Health which should be considered and evaluated through the ES."*	Noted (see Chapter 17: Climate Change). Human Health has been scoped into the EIA and is presented at Chapter 13: Human Health. Noted. The human health assessment considers the potential impacts on human health considers the impacts and mitigation measures detailed in the other chapters of the ES (see Chapter 16: Human Health).
Greater Manchester Archaeological Advisory Service (GMAAS)	GMAAS note that although *"worker's housing and the engineering trades during the nineteenth century are both subjects of established archaeological interest GMAAS recognises that in this instance the remains that might be encountered would not be of sufficient significance to merit their physical preservation or to provide the basis for an objection to the development. On this basis GMAAS agrees with the conclusions of the Scoping Report and recommend that archaeology is scoped out of the EIA"*	Noted.
Environment Agency	The EA raise concern that Ecology and Nature Conservation and Drainage and	An Ecology Assessment has been prepared by TEP (October 2020) which is submitted in

Consultee	Summary of Comments	Actions
(EA)	Flood Risk were not scoped into the EIA.	support of the planning application. The assessment has confirmed that there is no potential for significant effects on ecological receptors and as Ecology and Nature Conservation has been scoped out of the EIA. With regards to Drainage and Flood Risk, this discipline has not been included within the EIA (see Chapter 8: Drainage and Flood Risk).
	The EA state that "*The scheme should, where viable, include the provision of blue-green infrastructure which offers multiple benefits including but not limited to: surface water drainage management, carbon / climate change reductions, as well as consideration of the requirements of the Water Framework Directive (WFD) (Irk (Wince to Irwell, WFD Ref: GB112069061131).*"	Extensive blue and green infrastructure has been included within the proposals. See DAS (Buttress, January 2021). Chapter 14: Climate Change details the assessment on climate change effects as a result of the proposed development. Chapter 8: Flood Risk and Drainage considers the WFD within the assessment.
	The EA note that "*Moston Brook is a designated 'Main River'*" which is culverted beneath the site *"and therefore, dependent on the development proposals brought forward, may require a permit under the Environmental Permitting (England and Wales) Regulations 2016 from the Environment Agency for any proposed works or structures, in,*	Noted.

Consultee	Summary of Comments	Actions
	under, over or within eight metres from either side of a Main River (culvert noted).” The EA note that “*it should be firstly assessed whether the development brought forward presents a WFD risk. Further to this, we would seek that any future development ascertains the possibility of de-culverting the existing waterbody; and where deemed impractical based on technical feasibility or cost benefit, still looks to ensure future scheme design avoids further deterioration of the waterbody's ecological potential.”* With regards to the scheme design, the EA state that “*detailed ecological assessment be undertaken of the existing site to inform and shape future scheme design. It should also be identified through appropriate assessment how new surface water drainage design will protect the Moston Brook receptor and avoid new urban diffuse pollution. The proposal should look to adopt multifunctional sustainable urban drainage options where feasible.*" The EA go on to state that the site is located within a Critical Drainage Area and as such requires a 50% reduction of existing brownfield runoff rates.	De-culverting the watercourse was not deemed a viable option and as such the culverts beneath the site will remain in situ. The EIA considers the water quality of the watercourses as recommends measures to prevent pollution into these features (see Chapter 8: Drainage and Flood Risk). An Ecological Assessment has been prepared by TEP and is submitted as a standalone report in support of the planning application. Chapter 8: Flood Risk and Drainage considers water quality of Moston Brook and recommends mitigation measures to prevent any adverse effects on this watercourse as a result of accidental pollution events. Noted. The Drainage Strategy (see **Appendix 8.1**) incorporate a 50% reduction in brownfield runoff rates.

Consultee	Summary of Comments	Actions
MCC - Ecology	MCC agree that there is not likely to be any significant effect on ecological receptors and as such ecology can be scoped out of the EIA. MCC note that ecology issues should still be considered within the application.	Noted. An Ecological Assessment has been prepared by TEP (October 2020) and is submitted as a standalone report in support of the planning application.
MCC - Compliance, Enforcement and Community Safety	**Noise** MCC note that a Construction Management Plan should be submitted and approved by the council which will contain a Noise and Vibration section (in addition to a dust emission section) that will base the assessment on British Standard 5228. It will also contain a community consultation strategy which includes details on how and when local businesses and residents will be informed on matters such as hours of work. MCC note that "*before the development commences a scheme for acoustically insulating the proposed residential accommodation against noise from all main roads and railway line shall be submitted to and approved in writing by the City Council as local planning authority. There may be other actual or potential sources of noise which require consideration on or near the site, including any local commercial/industrial premises. The approved noise insulation be completed before any of the dwelling units*	A Framework Construction Environment Management Plan (CEMP) is located within Section 7 of the Supporting Planning Statement (SPS) (Avison Young, January 2021) which is submitted in support of the planning application. A separate CEMP will be conditioned and produced prior to any commencement of works on site. Noted. Chapter 11: Noise and Vibration details facade sound insulation performance requirements.

Consultee	Summary of Comments	Actions
	are occupied." MCC note that the following criteria should be met: • Bedrooms (night time - 23.00 - 07.00) 30 dB L_{Aeq} (individual noise events shall not exceed 45 dB L_{Amax} by more than 15 times) • Living Rooms (daytime - 07.00 - 23.00) 35 dB L_{Aeq} • Gardens and terraces (daytime) 55 dB L_{Aeq} MCC note that "*upon completion of the development and before first occupation of the residential units, a verification report will be required to validate that the work undertaken throughout the development conforms to the recommendations and requirements in the approved acoustic consultant's report. The report shall also undertake post completion testing to confirm that the internal noise criteria have been met."* MCC note that "*due to the proximity of the development to the train line, it will be necessary for vibration criteria to apply which can be found in BS 6472: 2008 "Guide to evaluation of human exposure to vibration in buildings". Groundborne noise/re-radiated noise should also be factored into the assessment and design.*"	Noted. See Chapter 11: Noise and Vibration. Noted. This is of relevance to the Collyhurst South site which was initially to be covered by this EIA. However this application will now be submitted at a later date and is not assessed within this EIA with the exception of the potential cumulative effects (see Chapter 15: Cumulative

Consultee	Summary of Comments	Actions
		Effects).
	MCC state that "*externally mounted ancillary plant, equipment and servicing shall be selected and/or acoustically treated in accordance with a scheme designed so as to achieve a rating level of 5dB (L_{Aeq}) below the typical background (L_{A90}) level at the nearest noise sensitive location*.	Noted. See Chapter 11: Noise and Vibration.
	The scheme shall be submitted to and approved in writing by the City Council as local planning authority in order to secure a reduction in the level of noise emanating from the site. The approved scheme shall be completed before the premises is occupied."	Noted.
	MCC note that "*before the development commences a scheme for the storage and disposal of refuse shall be submitted to and approved in writing by the City Council as local planning authority. The details of the approved scheme shall be implemented as part of the development and shall remain in situ whilst the use or development is in operation.*	Noted. Details of the waste strategy is contained within the DAS (Buttress, January 2021) which is submitted in support of the planning application.
	New developments shall have refuse storage space for segregated waste collection and recycling. Internal and external storage areas are required."	
	MCC note that "*the premises shall be acoustically insulated and treated to limit the break out of noise in accordance with a noise study of the premises and a scheme of acoustic treatment that has been submitted to and approved in writing by the City Council as local planning authority. The scheme shall be implemented in full before the use commences or as otherwise agreed in writing by the City Council as local planning*	Noted. See Chapter 11: Noise and Vibration for the assessment of potential noise effects as a result of the proposed development as well as insulation requirements.

Consultee	Summary of Comments	Actions
	authority. *Where entertainment noise is proposed the L_{Aeq} (entertainment noise) shall be controlled to 10dB below the L_{A90} (without entertainment noise) in each octave band at the facade of the nearest noise sensitive location, and internal noise levels at structurally adjoined residential properties in the 63HZ and 125Hz octave frequency bands shall be controlled so as not to exceed (in habitable rooms) 47dB and 41dB, respectively*." **Air Quality** MCC note that "*prior to commencement of the development mitigation measures to safeguard local air quality shall be submitted to and approved in writing by the City Council as local planning authority. Any agreed mitigation measures shall be implemented as part of the development and shall remain in situ whilst the use or development is in operation*." **Contaminated Land** MCC note that "*a Preliminary Risk Assessment should be submitted to the council to identify and evaluate all potential sources and impacts of any ground contamination, groundwater contamination and/or ground gas relevant to the site.* *In the event of the Preliminary Risk Assessment identifying risks which in the written*	Noted. See Chapter 11: Noise and Vibration Chapter 10: Air Quality and Dust provides an assessment on the potential effects with regards to air quality and any mitigation measures for the proposed development. A Phase 1 Preliminary Risk Assessment as well as a Phase 2 Site Investigation have been produced by LKC (August 2020 and October 2020 respectively) which are submitted in support of the planning application. A Remediation Strategy has also been prepared by LKC (October 2020) which is

Consultee	Summary of Comments	Actions
	opinion of the Local Planning Authority require further investigation, the development shall not commence until a scheme for the investigation of the site and the identification of remediation measures (the Site Investigation Proposal) has been submitted to and approved in writing by the City Council as local planning authority. *The measures for investigating the site identified in the Site Investigation Proposal shall be carried out, before development commences and a report prepared outlining what measures, if any, are required to remediate the land (the Site Investigation Report and/or Remediation Strategy) which shall be submitted to and approved in writing by the City Council as local planning authority."* MCC note that "*When the development within each phase commences, the development shall be carried out in accordance with the previously agreed Remediation Strategy and a Completion / Verification Report shall be submitted to and approved in writing by the City Council as local planning authority"* MCC go on to state that "*In the event that ground contamination, groundwater contamination and/or ground gas, not previously identified, are found to be present on the site at any time before the development in each phase is occupied, then development shall cease and/or the development shall not be occupied until, a report outlining what measures, if any, are required to remediate the land (the Revised Remediation Strategy) is submitted to and approved in writing by the City Council as local planning authority and the development shall be carried out in accordance with the Revised Remediation Strategy, which shall take precedence over any Remediation Strategy or earlier Revised*	submitted in support of the planning application. Noted. Noted.

Consultee	Summary of Comments	Actions
	Remediation Strategy." **Deliveries to Commercial Premises** MCC note that deliveries, servicing and collections, including waste collections shall not take place outside the following hours: 07:30 to 20:00, Monday to Saturday, no deliveries/waste collections on Sundays/Bank Holidays. **Fume/Odours Discharge** MCC state that "*fumes, vapours and odours shall be extracted and discharged from the premises in accordance with a scheme to be submitted to and approved in writing by the City Council as local planning authority before the use commences; any works approved shall be implemented before the use commences.*" **External Lighting Scheme** External lighting shall be designed and installed so as to control glare and overspill onto nearby residential properties.	Noted. Noted, though it is not anticipated that the proposed development will include elements that will release fumes / vapours or odours. Noted. A Lighting Assessment has been prepared by Watt Energy and Consulting Engineers (October 2020) which is submitted in support of the planning application.
MCC – Flood Risk Management	MCC state that surface water management should be in line with the drainage hierarchy with infiltration being the most preferred discharge option, followed by infiltration, then connection to a surface water sewer and finally a combined sewer.	The Drainage Strategy has been developed in line with the drainage hierarchy (see **Appendix 8.1**).

Consultee	Summary of Comments	Actions
	MCC note that "*Moston Brook in culvert runs through the Collyhurst Village site and if infiltration on site is not possible, the next discharging point for surface water should be this watercourse, where feasible and should be discussed with the Environment Agency as Moston Brook is Main River*." The proposed development should include SuDS features to reduce flood risk, mitigate potential pollutants in surface water runoff from site and provide a benefit to amenity, recreation and wildlife. MC note that "*Green roofs, green walls, tree planting and other forms of green infrastructure should be considered to allow for the adaption to climate change in such a heavily urbainsed area.*" MCC note that "*the area is situated within a Critical Drainage Area and in accordance with the Manchester City Council SFRA at least a 50% reduction in surface water runoff should be provided through SUDS as part of any brownfield development with the aim of reducing to the Greenfield runoff rates.* *Surface water should be managed to ensure there is no increased surface water from the proposed development and runoff from extreme events should be retained within the site such that the adjacent third party land is not affected.*	Noted. See **Appendix 8.1** for the proposed Drainage Strategy. SuDS features can be incorporated into the proposed development at detailed design (see Chapter 8: Drainage and Flood Risk and **Appendix 8.1**) Noted. Tree planting and extensive green infrastructure measures have been incorporated into the landscaping design. Further details are provided in the DAS submitted in support of the planning application. Noted. The Drainage Strategy (see **Appendix 8.1**) incorporate a 50% reduction in brownfield runoff rates. The proposed development will not result in increased surface water runoff and discgarge rates will be managed on site up to the 1 in

Consultee	Summary of Comments	Actions
	Hydraulic calculations and drawings to support the design need to be provided along with proposed standards of operation and maintenance in accordance with paragraph 081 of NPPF Planning Practice Guidance. *Management and maintenance plan for the lifetime of the development which shall include the arrangements for adoption by any public body or statutory undertaker, or any other arrangements to secure the operation of the sustainable drainage scheme throughout its lifetime shall be submitted.*	100-year flood event plus 40% climate change allowance. See Chapter 8: Drainage and Flood Risk. See **Appendix 8.1** for details of hydraulic calculations. Noted.
Transport for Greater Manchester (TfGM)	TfGM state that "*In-curtilage car parking should be made available in line with the Northern Gateway SRF. Commentary will be required to discuss the impact of on-street parking in the locality. The applicant may be required to contribute to the implementation of a Resident Parking Zone in the area which is currently being considered by MCC Highways, as previously discussed within initial correspondence*." TfGM state that the Applicant should also consider the following in terms of parking requirements: - Electric vehicle charging facilities are required, providing a minimum of 7kw per charge point.	Noted. A total of 203 parking spaces will be provided for the proposed development. Full details of the parking strategy are provided in Chapter 5: The Proposed Development and **Appendix 9.1**. EV charging is provided as follows: - 100% Infrastructure to the houses - 50% EVCs provided in the base build

Consultee	Summary of Comments	Actions
		- 10% EVCs provided in the base build to the apartments
	- Disabled allocation within car parks should be clearly identified	Noted.
	- Spaces within the car park should be minimum 2.4m x 4.8m separated by a 6m aisle width. Individual driveway spaces should offer a minimum of 3.0m x 6.0m.	Noted.
	TfGM note that "*100% cycle parking should be provided for each of the residential units. All cycle storage must offer secure and sheltered accommodation.*	As noted in Chapter 5: The Proposed Development, a 138% cycle parking is provided on site (336 cycle parking spaces). These are located in secure cycle stores.
	Additional cycle storage is also recommended within the site's public realm to encourage cycling as a viable mode choice. The applicant should consider cycle improvements within the vicinity of the site to improve connectivity for cyclists."	An additional 15 bike stands will be located in the new Collyhurst Park on site.
	Should adoption of new highway be sought, TfGM note that "*all aspects of highway infrastructure should be designed and constructed to adoptable standards (including highway layout, dimensions, gradient, drainage, lighting etc). Adoption of the highway will be undertaken a Section 38 Agreement with MCC Highways."*	All highways on site will be constructed to adoptable standards. (See DAS for further details).

Consultee	Summary of Comments	Actions
	TfGM note that "*there may be a requirement for the applicant to upgrade junctions at Rochdale Road given the increase in pedestrian and vehicle flows. This is likely to include a signalised facility to accommodate both cyclists and pedestrians.*"	There are not anticipated to be any significant impacts with regards to pedestrian or drivers and as such, junction improvements are not required. See Chapter 9: Transport and Access and **Appendix 9.1** for further details.
	TfGM note that a "*construction management plan is required prior to any demolition or construction works commencing on the site which may impact on highway operations.*"	Noted. A CEMP will be secured by condition.
	TfGM note that a TA and Travel Plan should be submitted with the planning application which should detail the potential impacts of the proposed development and the measures to reduce these impacts.	A TA and Travel Plan are presented in **Appendix 9.1** and **Appendix 9.2** respectively.
	TfGM note that the proposed development is sufficiently remote from Metrolink that they have no comment from a construction aspect. However, TfGM request that the TA addresses modal split, particularly with regards to tram patronage, so Metrolink can gauge the likely increase in demand as a result of the proposals.	See TA at **Appendix 9.1** for details of modal split.
Natural England	Natural England note that the proposed development "*does not appear, from the information provided, to affect any nationally designated geological or ecological sites (Ramsar, SPA, SAC, SSSI, NNR) or landscapes (National Parks, AONBs, Heritage Coasts, National Trails), or have significant impacts on the protection of soils (particularly of sites over 20ha of best or most versatile land), nor is the development for a mineral or*	Noted.

Consultee	Summary of Comments	Actions
	waste site of over 5ha. *At present therefore it is not a priority for Natural England to advise on the detail of this EIA."*	

Table 2.2: Non-Significant Topics Scoped Out of the EIA

Discipline	Commentary
Lighting	Artificial lighting is provided to encourage a safe environment for a range of activities including driving, cycling and walking. It is also used to enhance the environment by means of decorative and flood lighting of areas, features and buildings. Any new lighting proposed as part of the development at the site will be in accordance with national bodies including British Standards. The proposed lighting will be selected with reference to the following design standards and codes of practice: • BS EN 5489-1: 2003 +A2 (2008) Code of Practice for the design of road lighting: Part 1 Lighting of roads and public amenity areas; • BS EN 13201-2: 2003 Road lighting – Part 2: Performance requirements; • ILE GN01: Guidance notes for the reduction of obtrusive light; • ILE TR12: Lighting of pedestrian crossings (2007); and • ILE TR25: Lighting for traffic calming features. Lighting will be designed in conjunction with the design team and landscape consultant to ensure that lighting is appropriate in terms of the potential effects on public realm and site surroundings. As this mitigation can be 'designed-in' to the proposals and secured through appropriate planning controls, it is considered that a detailed assessment of lighting is not required as part of the EIA.
Waste	Given the nature of the proposed development, materials required for the construction of the proposed development are unlikely to be particularly scarce or environmentally sensitive, nor is the proposed development likely to result in materials becoming scarce. Consideration will be given throughout the design process to the specification of suitable materials, including their sustainability and environmental implications, to support an environmentally sensitive and high quality development. As a result, the proposed development is not likely to have any significant effects in relation to materials. Waste will be generated during the construction phase, as a result of the construction of the new buildings. Waste management will be considered carefully throughout the design and construction of the proposed development, to ensure compliance with legislation, and to minimise costs associated with waste disposal. The volume of construction waste likely to be generated by the development

Discipline	Commentary
	would be in line with what would be expected from a development of this size and will not significantly affect the capacity of local waste infrastructure. Given the topography of the site there is unlikely to be the requirement for the generation of significant cut material or the importation of significant fill material. The development will be designed to keep such cut or fill requirements to a minimum. During the operation of the development, waste (including recyclables) generated by the development will be managed by the local waste authority, while waste from non-residential uses will be managed by commercial operators. None of the proposed users are anticipated to be major generators of waste and the wastes generated by the proposed development should not significantly affect the capacity of local waste infrastructure. As such, waste need not be assessed separately as part of this EIA.
Ecology and Nature Conservation	There are a number of trees located on the Collyhurst Village site which will be removed as part of the proposed development. However, an Arboricultural Impact Assessment (AIA) has been undertaken by Amenity Tree Care (December 2020) which recommends mitigation measures to ensure there are no significant adverse impacts. A total of 208 trees will be removed as part of the proposals (identified as 125 individual trees and tree groups in the AIA). A Tree Replacement Framework (TRF) has been prepared by Exterior Architecture which is submitted in support of the planning application, this sets out the key principals for how those trees which have been removed will be replaced. The TRF proposals include planting 464 trees, representing a 1:2 replacement policy. An Ecology Assessment, bat activity and roost surveys have been prepared by TEP (November 2020) and are submitted in support of the planning application. Significant effects on ecology are not anticipated and as such ecology and nature conservation has been scoped out of the EIA.
Heritage and Archaeology	There are no designated heritage assets (Scheduled Monuments, Grade I, II* and II Listed Buildings, Conservation Areas, Registered Parks and Gardens or Registered Battlefields) within the site boundary and limited heritage assets in the surrounding areas. As such it is not envisaged that there will be any significant impacts on heritage assets in the surrounding area. Rapid development of the site was undertaken in the second half of the 19th century to residential development from the former primarily undeveloped land.

Discipline	Commentary
	In the first half of the 20th century the residential dwellings had been demolished with the exception of some houses fronting Rochdale Road. Less dense residential development followed in the mid-20th century which has subsequently been demolished. As such, the site has the potential to retain buried remains of 19th century housing within the southern parcel. These remains are likely to be of local significance. It is recommended that further investigation is carried out in targeted areas on site with higher archaeological potential. These measures should be secured by planning conditions. It is not considered that there would be significant adverse effects on heritage or archaeological assets as a result of the proposed development. As such, heritage and archaeology has been scoped out of the EIA.
Ground Conditions	The ground conditions on has been assessed and Ground Investigation Reports including a Phase 1 Preliminary Risk Assessment, Phase 2 Environmental Investigation have been prepared by LKC (August 2020 and October 2020 respectively) and are submitted as a standalone report in support of the planning application. Elevated levels of PAH, petroleum hydrocarbon and asbestos have been identified as being present on site. These pose a Low to Moderate risk to future users of the site. Asbestos containing material (ACM) will be appropriately mitigated through the implementation of an Asbestos Management Strategy. A Moderate risk of ground gas has also been identified within Plot B and as such, precautionary gas protection measures will be implemented within this plot. A Remediation Strategy has been prepared by LKC (October 2020) which details the mitigation measures which will appropriately mitigate any risks with regards to ground conditions as a result of the proposed development. It is not anticipated that there will be significant effects as a result of ground conditions on site. As such, ground conditions has been scoped out of the EIA.
Accident and Disasters	The new EIA Regulations 2017 require that an ES needs to include a description of the expected effects of the proposed development on the environment deriving from the vulnerability of the development to risks of major accidents and/or disasters that are relevant to the project concerned. In this case, the nature of the

Discipline	Commentary
	proposed development is not considered to pose risk of major accidents and/or disasters. As such, accidents and disasters are not proposed to be included as part of this EIA.

Consultation

2.16 An integral part of the EIA process is consultation with a range of statutory and non-statutory consultees. Consultation was undertaken at the scoping stage to identify any initial environmental concerns associated with the proposed development that required examination in greater detail in the EIA.

2.17 Consultation has also been undertaken as part of the technical assessments as a means of establishing the environmental baseline and assessment methodologies. This includes identifying sensitive components of the environment, e.g. humans, organisms or physical characteristics, or potential effects and reaching consensus on suitable mitigation measures. Details of further consultation undertaken as part of each technical assessment are described further within each technical chapter.

Pre-Application Discussions

2.18 Consultants acting on behalf of the Applicants have engaged with MCC and relevant statutory and regulatory bodies as part of an extensive pre-application discussions exercise. Pre-application liaison between the professional team and MCC has taken place where a range of technical and design issues have been discussed. As above, details of further consultation undertaken as part of each technical assessment is described further within each technical chapter, as relevant.

EIA Methodology

2.19 In addition to observing the formal requirements of the EIA Regulations, further formal guidance has been drawn from NPPG. Specific technical guidance is referenced in the individual technical chapters as appropriate.

Consistency

2.20 To assist the reader in understanding the technical assessments a consistent approach has been adopted throughout the EIA to ensure that likely significant effects are identified and evaluated in a transparent manner. Each environmental assessment topic has adopted the following approach:

- Baseline Assessment and Identification of the Study Area;
- Identification of Sensitive Receptors;
- Identification of Embedded Mitigation Measures;

- Identification of Potential Effects during Construction and Operation of the Proposed Development (including indirect, direct, adverse and beneficial);
- Assessment of Impact Significance;
- Identification of Impact Significance;
- Identification of Mitigation Measures;
- Assessment of Residual Effects; and
- Assessment of Cumulative Effects.

Spatial and Temporal Scope of Assessment

2.21 The spatial extent of the EIA is described by the geographical area potentially affected by the proposed schemes and will need to take into account:

- The physical extent of the proposed schemes defined by the limits of land to be used both during construction and operation (temporary and permanent);
- The position of sensitive receptors within or outside of the site boundaries; and
- The nature of the baseline environment and the way in which the impacts are likely to be propagated.

2.22 The effects for each of the disciplines are likely to extend to different spatial extents. The spatial scope for each discipline will be described within each of the topic chapters as required.

2.23 The environmental baseline studies undertaken as part of the EIA consider the current conditions of the site. Therefore, each technical chapter will contain a description of the relevant study area that may be affected by the scheme.

2.24 With reference to the baseline conditions, the impact assessment will be made against existing baseline conditions. The assessment will address effects arising from the construction and operation of the proposed schemes as follows:

- Construction effects may arise directly from construction activities but also from the temporary use of land (e.g. construction sites) or from associated changes in traffic movements; and
- Operational effects may arise from the permanent operational activities and ongoing use of the proposed development and new infrastructure, including but not limited to highways, noise, and air quality.

2.25 The significance of the effects that will arise in each of these phases is based on any changes compared to the baseline conditions (i.e. those conditions which would exist if the proposed scheme did not go ahead).

Impact Prediction

2.26 The 2017 EIA Regulations state that an ES should include:

> *"A description of the likely significant effects of the development on the environment resulting from inter alia:*
>
> *(a) the construction and existence of the development, including, where relevant, demolition works;*
>
> *(b) the use of natural resources, in particular land, soil, water and biodiversity, considering as far as possible the sustainable availability of these resources;*
>
> *(c) the emission of pollutants, noise, vibration, light, heat and radiation the creation of nuisances, and the disposal and recovery of waste;*
>
> *(d) the risk to human health, cultural heritage or environment (for example accidents and disasters);*
>
> *(e) 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;*
>
> *(f)the impact of the project on climate (for example nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change;*
>
> *(g) the technologies and substances used."*

2.27 Predictions of environmental impacts are carried out using quantitative methods, or in some cases, qualitative terms using expert opinion. All assumptions used, and any areas of uncertainty, are defined in the relevant chapters.

2.28 The following types of effect are considered:

- Direct impacts that arise from activities that form an integral part of the proposed scheme (e.g. new infrastructure/landtake);
- Indirect impacts that arise from activities not explicitly forming part of the proposed scheme (e.g. noise changes due to changes in road traffic flows on existing roads resulting from the operation of the scheme);
- Secondary impacts that arise as a result of an initial effect of the proposed scheme;
- Permanent impacts that result from an irreversible change to the baseline environment (e.g. landtake) or impacts which persist for the foreseeable future (e.g. visual impact);

- Temporary impacts that persist for a limited period only, for example, due to particular construction activities (e.g. noise from construction plant);
- Beneficial impacts that have a positive influence; and
- Adverse impacts that have a negative influence.

Significance Criteria

2.29 The significance of effect is assessed by looking at what the changes will be against the existing or predicted baseline as a result of both the construction and operation of the schemes. It is a product of the sensitivity of the receptor, and the magnitude of the impact upon it. The criteria used to define the sensitivity of a receptor and magnitude of impact is provided in Table 2.3 and Table 2.4 below. These criteria are used as a guide only and the specific criteria for each technical assessment will be presented within each chapter.

Table 2.3: Description of the Sensitivity of an Environmental Receptor

Sensitivity	Typical descriptors
Very High	Very high importance and rarity, international scale and very limited potential for substitution.
High	High importance and rarity, national scale, and limited potential for substitution.
Medium	High or medium importance and rarity, regional scale, limited potential for substitution.
Low	Low or medium importance and rarity, local scale.
Negligible	Very low importance and rarity, local scale.

2.30 Descriptions of the magnitude of impact are provided in Table 2.4 below.

Table 2.4: Description of the Magnitude of an Impact

Magnitude of Impact	Impact Type	Typical criteria descriptors
Very Large	Adverse	Loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features or elements

Magnitude of Impact	Impact Type	Typical criteria descriptors
	Beneficial	Large scale or major improvement of resource quality; extensive restoration or enhancement; major improvement of attribute quality
Large	Adverse	Loss of resource, but not adversely affecting the integrity; partial loss of/damage to key characteristics, features or elements
	Beneficial	Benefit to, or addition of, key characteristics, features or elements; improvement of attribute quality
Medium	Adverse	Some measurable change in attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements
	Beneficial	Minor benefit to, or addition of, one (maybe more) key characteristics, features or elements; some beneficial impact on attribute or a reduced risk of negative impact occurring
Small	Adverse	Very minor loss or detrimental alteration to one or more characteristics, features or elements
	Beneficial	Very minor benefit to or positive addition of one or more characteristics, features or elements
No change	n/a	No loss or alteration of characteristics, features, or elements; no observable in either direction.

Identification of Significant Effects

2.31 Based on the sensitivity and magnitude criteria set out above, specific significance criteria have been used in each technical assessment and these are explained in the methodology sections within each technical chapter. Often, these are based on clearly defined criteria from published best practice guidance. However, wherever possible, the following terminology has been utilised:

- Major Beneficial;
- Moderate Beneficial;
- Minor Beneficial;

- Negligible;
- Minor Adverse;
- Moderate Adverse; and
- Major Adverse.

2.32 Where potential environmental impacts have been found, further to assessment which are of no significance, they are said to have no effect.

2.33 The assessment of likely significant effects has been undertaken for all potential effects to determine their relative importance. This has taken into account the following considerations:

- Magnitude (size of impact);
- Sensitivity of the surrounding environment and receptors;
- Spatial extent (size of the area affected);
- Duration (short, medium or long term);
- Nature of the effect (direct or indirect, reversible or irreversible);
- Inter-relationships and combination effects;
- International, national or local standards; and
- Relevant policy guidance.

Mitigation

2.34 The development of measures designed to avoid, reduce or offset significant adverse environmental effects associated with a proposal is one of the key elements of EIA. Measures to mitigate environmental effects of the proposed development can take two forms;

- Embedded mitigation – is the consideration of mitigation embedded into the fixed scheme (as per the detailed application plans) with the aim where possible, of avoiding, reducing or offsetting significant adverse effects, determined during the course of the assessment; and
- Further mitigation – is the mitigation that is not embedded into the proposals and which requires further action than already proposed.

2.35 As noted above, a number of design responses have been embedded into the design of the development. These are set out in Chapter 5: Description of Development. Where environmental mitigation measures have not been integrated into the proposals through design, it is expected that all other requisite measures or 'further mitigation' will be secured by appropriate planning conditions or obligations. Descriptions of these mitigation

measures are included in the appropriate technical chapters and summarised in Chapter 16: Summary of Mitigation and Residual Effects.

Cumulative Effects

2.36 The assessment of cumulative effects is set out in two forms. The first relate to the impacts of the proposed development in conjunction with other developments in the area. These developments should be existing, consented or reasonably foreseeable in terms of delivery and should be located within a realistic geographical scope where environmental effects could combine to create a more significant effect on a particular sensitive receptor. The second type of cumulative effect is that of the combination of the various types of impacts from the proposed development. These are referred to as synergistic effects.

2.37 Schemes for consideration in the cumulative effects assessment were initially identified through a planning application search of the MCC planning portal. This process identified a total of nine projects to be included within the cumulative assessment. The list of sites considered as part of the cumulative assessment are provided along with the assessment in Chapter 15: Cumulative Effects.

Limitations and Assumptions

2.38 The EIA has been undertaken based on the planning application drawings and description of the development submitted with the planning application. The technical assessments have been based on the current land uses and the existing baseline conditions at the site. Any assumptions made or limitations relating to individual technical assessments are presented, where applicable, in the relevant technical chapters.

The Project Team

2.39 The ES has been compiled using a wide range of sources and with inputs from competent, technical specialists. The organisations and their roles in the project team are listed in Table 2.5 below.

Table 2.5: The Project Team

Discipline	Company
Client	FEC
Architect	Buttress
Planning Consultant and EIA Co-ordinator	Avison Young

Discipline	Company
Townscape and Visual	Exterior Architecture
Flood Risk and Drainage	Civic Engineers
Transport and Access	Civic Engineers
Air Quality and Dust	Redmore Environmental
Noise and Vibration	Sandy Brown
Socio-economic	Avison Young
Human Health	Enfusion
Climate Change	Watt Energy & Consulting Engineers

3. Site Description

Introduction

3.1 This chapter provides a description of the proposed development site including a brief site history and a description of its surrounding area. It also summarises the potential environmental constraints to the proposed development of the site. The context of the site is described to clearly present the baseline conditions across the proposed development area.

Site Location

Site Description

3.2 The site is irregular in shape and occupies approximately 4.7ha of land to the east of Rochdale Road, Manchester, within the ward of Harpurhey. The Site Location Plan for the Collyhurst Village site is presented at **Drawing ref. 8871-BA-SC-XX-DR-A-(01)100**.

3.3 The site comprises 29 residential dwellings, a convenience shop, areas of hardstanding, amenity grassland and trees. The site is bound to the west by Rochdale Road, to the south by Shellard Road and Harrowby Drive, to the east by Johnny King Close and Thornton Street North and to the north by Stretton Close and Marston Street. Paget Street bisects the centre of the site in an east / west orientation.

3.4 Manchester Victoria Station is the nearest railway station and is located approximately 2km southwest of the site. The station predominantly provides local and regional mainline services to the north of England.

3.5 Metrolink services are also available in the area, the closest of which is located at Monsall, approximately 470m northeast of the site.

3.6 There are no designated heritage assets (Scheduled Monuments, Grade I, II* and II Listed Buildings, Conservation Areas, Registered Parks and Gardens or Registered Battlefields) within the site boundary. There is one listed building located within 500m of the proposed development, the Grade II Listed Brierley Statue in Queens Park to west of Park Entrance, located approximately 460m north of the site. The Grade II listed Queens Park Registered Park and Garden is located approximately 290m north of the site.

3.7 A war memorial is located adjacent to the site's southwestern border.

3.8 There are no statutory ecologically designated sites within 2km of the site. The nearest statutory designated site is the Rochdale Canal Site of Special Scientific Interest ("SSSI") and Special Area of Conservation ("SAC"), located approximately 3.4km northwest of the site boundary. The site lies within the Impact Risk Zone of the Rochdale

Canal SSSI. However, the proposed development does not exceed any threshold that would require MCC to consult with Natural England regarding the potential impacts on the SSSI.

3.9 One non-statutory designated ecological site is located within 1km of the site which is the Rochdale Canal Stott's Lane – Ducie Street Basin Site of Biological Importance (SBI) located approximately 1km east of the site

3.10 Moston Brook is culverted beneath Thornton Street North to the east as well as beneath the northern extent of the site. Moston Brook is a tributary of the River Irk (located approximately 240m west of the site). Both Moston Brook and the River Irk are designated as a Main River by the Environment Agency.

3.11 The site is located entirely within Flood Zone 1, indicating a less than 1 in 1,000 annual probability of flooding. The majority of the site is at Very Low risk with regards to pluvial flooding. Some isolated Low to High risk areas are located on areas of hardstanding and existing roads on site. The site is not at risk of flooding from reservoirs.

3.12 The western extent of the site is located within the Greater Manchester Air Quality Management Area (AQMA). This AQMA covers the city centre and major roads in and out of the city.

3.13 The site is not located in an Area of Outstanding Natural Beauty (AONB) or any other area designated for its landscape value.

3.14 According to British Geological Survey (BGS) maps the superficial deposits on site comprise Devensian Glacial Till, and the underlying bedrock is that of the Pennine Middle Coal Measures Formation; Pennine Upper Coal Measures Formation; and Worsley Delf Rock - Sandstone.

3.15 A review of the Coal Authority Mining Risk GIS System indicates the site is located within a coal mining reporting area. The south eastern border of the site encroaches into a Development High Risk zone.

3.16 The existing noise climate is dominated by road traffic noise emanating from Rochdale Road.

Environmental Characteristics

3.17 Features of the site and the surrounding areas may form a constraint to development or be identified as a sensitive receptor with the potential to be affected by the proposed development. Identifying such constraints and receptors early in the design process ensures that appropriate mitigation measures are designed into the proposals progressively from the outset and are fully integrated into the design where appropriate. Details of environmental constraints and opportunities found at and around the site are presented in the technical chapters in this ES (see Chapters 7 to 14).

Townscape and Visual

3.18 The site does not fall within an area nationally or locally designated for landscape importance. The site is identified within the Manchester Conurbation National Character Area (NCA) 55 characterised by dense urban and industrial development, commercial, financial, retail and administrative centres, commuter suburbs and housing, interspersed with a network of green infrastructure.

3.19 The site is located within an urban area to the northeast of Manchester City Centre.

3.20 The site itself comprises large areas of hardstanding associated with the former residential dwellings that were demolished in the early 21st century, residential dwellings, amenity grassland and woodland areas. The area surrounding the site is characterised predominantly by residential development. To the immediate west of the site is Rochdale Road, a key arterial route into Manchester.

3.21 An assessment of the impact of the proposed development on townscape and visual receptors has been undertaken and is presented in **Chapter 7: Townscape and Visual**.

Drainage and Flood Risk

3.22 The entirety of the site is located within Flood Zone 1 which means the site is considered to be at less than 0.1% chance of flooding in any year and so is not at risk of fluvial flooding.

3.23 As the proposed site is approximately 45km from the nearest coastal body of water, the risk from tidal flooding is considered to be Low.

3.24 The Manchester City Council Local Flood Risk Management Strategy document notes that flood risk from groundwater has not been historically significant.

3.25 The Flood Risk for Planning maps shows the majority of the site is at Very Low risk of surface water flooding with some areas indicated as being within a Low to High risk.

3.26 An assessment of the effect of the proposed development on drainage and flood risk has been undertaken and is presented in **Chapter 8: Drainage and Flood Risk**.

Transport and Access

3.27 The Collyhurst Village site is bounded by Rochdale Road to the west, Shellard Road to the south, Anslow Close, Churnet Street and Thornton Road North to the east and an unnamed footpath to the north, which runs between Stretton Close and Rochdale Road. Collyhurst Village is around 2.4km northeast of Manchester City Centre.

3.28 There are employment sites, schools and shops within walking distance of the site. Pedestrian crossing points are located on Rochdale Road. Dropped kerbs and tactile paving are provided at many of the junctions around

the site to aid the movement of people with mobility problems and visual impairments, as well as people with young children in pushchairs. The site is well located for access on foot.

3.29 Rochdale Road has on-road cycle lanes travelling northbound past the site but intermittent facilities southbound. There are also on-road cycle lanes on Queens Road and Oldham Road. Most of Manchester City Centre can be accessed within a 15-minute cycle ride from the sites. The site is well located for access by bicycle.

3.30 Monsall Metrolink tram stop is a 10-minute walk or 3-minute cycle from Collyhurst Village and a 16-minute walk or 5-minute cycle from South Collyhurst. Monsall is on the Pink line, which runs between East Didsbury and Rochdale town centre. There are trams every 12 minutes in both directions.

3.31 There are over 30 buses per hour running along Rochdale Road from early in the morning until after 2300. Destinations include Piccadilly Gardens, Shudehill Interchange, Manchester Royal Infirmary, Bury, Rochdale, Middleton and Higher Blackley. The site is very well connected by bus.

3.32 The site has been assessed by Transport for Greater Manchester (TfGM) as having a Greater Manchester Accessibility Levels (GMAL) rating of 8 out of a possible 8, where level 8 represents a high level of accessibility and level 1 a low level of accessibility. GMAL are a detailed and accurate measure of the accessibility of a point to both the conventional public transport network (i.e. bus, Metrolink and rail) and Greater Manchester Local Link (flexible transport service), taking into account walk access time and service availability. The site is therefore very well located for access by public transport.

3.33 An assessment of the effect of the proposed development on the local highways network has been undertaken and is presented in **Chapter 9: Transport and Access**.

Air Quality

3.34 The proposed development is partially located within a designated AQMA. This has been declared by Manchester City Council due to exceedances of the annual mean Air Quality Objective (AQO) for nitrogen dioxide (NO^2).

3.35 There are a number of residential properties within the vicinity of the site which may be affected by any fugitive dust emissions during construction of the development. Additionally, there are a number of residential properties within the vicinity of roads which may be affected by changes in traffic flow and associated increases in vehicle exhaust emissions as a result of the operation of the development.

3.36 An assessment of the effect of the proposed development on local air quality has been undertaken and is presented in **Chapter 10: Air Quality**.

Noise and Vibration

3.37 The surrounding area of the site is predominantly a residential area. Other noise sensitive receptors include the Church of the Saviour church and school approximately 150m west of the site boundary.

3.38 The site is bound by Rochdale Road to the west which will result in some traffic related noise.

3.39 An assessment of the effect of the proposed development on the local noise climate has been undertaken and is presented in **Chapter 12: Noise and Vibration**.

Socioeconomics

3.40 The resident population of MCC was estimated to be 547,600 in 2018, of which 70.4% were aged 16-64.

3.41 The Indices of Multiple Deprivation use a combination of information relating to income, employment, education, health, skills and training, barriers to housing and services and crime to create an overall score of deprivation for local authorities, with 1 being the lowest rank and 319 being the highest rank. Manchester was ranked 2 out of 319 district local authorities in the Indices of Multiple Deprivation 2019.

3.42 The proportion of individuals classified as 'economically active' in Manchester between October 2018 and September 2019 was 71.7%, which was lower than the average across the North West (77.4%) and Great Britain (78.9%). The jobs density (i.e. the number of jobs divided by the individuals aged 16-64) within Manchester was 1.17 in 2018, which indicates a greater availability of employment opportunities compared with the regional (0.84) and national (0.86) averages. However, this is likely to mask disparities in employment opportunities across the administrative area of MCC, with the majority of jobs focussed in the City Centre. In Manchester, Services is the largest employment sector, with Wholesale and Retail Trade, Repair and Vehicles and Motorcycle the largest sub-sector of employment.

3.43 The site includes 29 residential units and a shop (the Collyhurst Village Store). There are currently no social infrastructure or community facilities within the site. However, within 1 mile of the site there are 10 General Practitioner (GP) surgeries, 12 primary schools and three secondary schools.

3.44 There are no formal amenity / open spaces within the site. In the vicinity of the site, there are open green spaces including Queen's Park to the north, Collyhurst Village Park and Rochdale Canal to the east and the River Irk valley to the west. The MCC's 'City Wide Open Spaces, Sport & Recreation Study' (2009) identifies that the facilities in the areas of the sites are of poorer quality than in other areas of Manchester and accessibility to these green spaces is an issue for local communities.

Human Health

3.45 Life expectancy at birth for the Harpurhey Ward (2015) is 72.6 for males, compared to 76.4 for Manchester; for females it is 76.3, compared to 80.3 for Manchester. Healthy Life Expectancy (HLE) is a measure of the average number of years a person would expect to live in good health. The HLE for the Cheetham Ward was 51.8 for males, compared to 56.1 for Manchester and 63.5 for England; for females the HLE was 52.1 compared to 57.2 for Manchester and 64.8 for England.

3.46 The Index of Multiple Deprivation (IMD) ranks each small area in England from most deprived to least deprived. There are 7 domains of deprivation, which combine to create the IMD: Income; Employment; Education; Health; Crime; Barriers to Housing & Services; and the Living Environment. According to the MCCFM, the Harpurhey Ward is one of the ten most deprived wards in the city with an IMD Score of 59 (2019); this compares with an IMD of 40 for Manchester City as a whole.

Climate Change

3.47 The Site is currently occupied by 29 dwellings and a shop however estimating the emissions associated without proper calculations is unrealistic.

Summary

3.48 This chapter has presented a description of the site including a description of the location, a brief site history and a description of its surrounding area. Based on the information presented in this chapter, the main environmental characteristics of the site have been identified as follows:

- The site is currently a brownfield site which comprises areas of hardstanding, amenity grassland, woodland, 29 residential dwellings and a shop;
- Views of the site are possible from publicly accessible locations close to the site;
- The site is accessible by a range of transport modes;
- The site is located in Flood Zone 1;
- Part of the site is located within the Greater Manchester AQMA; and
- Rochdale Road is located to the immediate east of the site which is a potential source of noise.

3.49 These identified constraints have been taken into account in the development of the proposals to ensure a thorough iterative design process and through the identification of appropriate mitigation measures as presented in Chapter 5: The Proposed Development.

4. Alternatives

Introduction

4.1 A statutory requirement for inclusion in an ES is the reporting of the consideration of alternatives in the development of a proposal. Schedule 4 of the EIA Regulations states that an ES is required to provide:

> *"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."*

4.2 This chapter describes the alternatives that were studied by the Applicants for the proposed development and the process of design evolution in response to the EIA process.

4.3 Firstly, the chapter considers the 'no development' option, which describes the likely conditions at the site in the absence of implementing the proposed development.

4.4 Secondly, the constraints and opportunities identified in relation to the proposed site have been considered and have influenced the design of the proposed development. The Applicants and the design team have undertaken a continuous review process to improve the design, taking into account the views of key consultees, stakeholders and the public. This design evolution process is described in detail and the reasons for the selection of the preferred option stated.

4.5 No alternative sites were considered for the development as:

1. The site is in the Applicants control;
2. The site is well suited for a residential development having previously been the site of a residential development before it being demolished in the early 21st Century; and
3. The site is located within the Northern Gateway SRF in the Collyhurst Village neighbourhood.

No Development Option

4.6 The 'no development option' evaluates the likely environmental conditions at the site in the absence of implementing the proposed development. Schedule 4 of the EIA Regulations states that the assessment provide "*an outline of the likely evolution thereof without implementation of the development as far as natural changes from the baseline scenario can be assessed*". A description of the baseline scenario is set out in Chapter 3: Site Description.

4.7 In the absence of the proposed development it is not expected that there would by any significant changes to the baseline conditions within the short term. Under the 'no development' scenario therefore, the site would remain under the same management regime and the site would remain predominantly as brownfield land, residential dwellings and a shop. The site is located within the Northern Gateway SRF; therefore, it can be assumed that some form of development is likely to come forward on site in the medium to long-term.

4.8 As noted in Chapter 3: Site Description, the site comprises of 29 residential dwellings, a shop, areas of hardstanding, amenity grassland and trees. The surrounding area is predominantly residential.

4.9 In the absence of the proposed development the local highways network would be subject to the same conditions that it currently experiences.

4.10 The enabling works and construction activities have the potential to increase the dust and noise in the local area. These will be controlled by best practice measures set out within a Construction Environmental Management Plan ('CEMP') and will only be temporary effects on local receptors. In the absence of the proposed development there will be no temporary disruption caused during the construction period.

Summary

4.11 In the absence of the proposals, the baseline environment is not anticipated to change in the short term. The perceived negative effects of the proposed development should be weighed against the benefits of the scheme and MCC's ambitions for the site to be developed for a residential development as part of the Northern Gateway SRF.

Design Evolution

4.12 The key points of design evolution of the proposed development are as follows:

- Ensuring the majority of dwellings are houses as opposed to apartments;
- Ensuring the proposed development delivers a high percentage of 3-bedroom family dwellings;
- Reducing the number of apartment blocks from three to two;
- Restricting the height of the apartments blocks to five and six storeys respectively; and
- Avoiding construction over the existing culverts beneath the site.

Conclusions

4.13 Overall, the proposed development incorporates high-quality residential apartments and townhouses that complement and enhance the character of the surrounding area. The appearance and materiality has been through a detailed and iterative design process with both the design team and MCC Planning Officers to ensure a

high-quality finish that respects the local character and materials, including both historical references and consented future development in the vicinity.

4.14 The consideration of alternatives has included the evaluation of a “no development” option and alternative design options. The design of the scheme has evolved through consultation with MCC, key stakeholders and the public and the findings of the series of studies that make up the EIA. A detailed description of the development proposals is presented in Chapter 5: The Proposed Development.

5. The Proposed Development

Introduction

5.1 Schedule 4, Part 1 of the 2017 EIA Regulations outlines the information that should be provided within an ES which includes:

> *(a) "A description of the location of the development;*
>
> *(b) A description of the physical characteristics of the whole development, including, where relevant, requisite demolition works, and the land use requirements during the construction and operational phases;*
>
> *(c) A description of the main characteristics of the operational phase of the development (in particular any production process), for instance, energy demand and energy used, nature and quantity of the materials and natural resources (including water, land, soil and biodiversity) used;*
>
> *(d) An estimate, by type and quantity, of expected residues and emissions (such as water, air, soil and subsoil pollution, noise, vibration, light, heat, radiation and quantities and types of waste produced during the construction and operation phases)."*

5.2 This chapter and the accompanying figures define the application area, the study area, the quantum of development proposed, the means of access proposals and describes the proposed development in line with Schedule 4 of the EIA Regulations. A description of the broad construction methods and processes is presented towards the end of this chapter.

5.3 The information presented in this chapter alongside the plans submitted for approval form the basis of the EIA and provides the level of detail required to enable the assessment of environmental effects in line with the 2017 EIA Regulations.

Description of the Development

5.4 The planning application seeks full planning permission for the construction of a residential-led development.

5.5 To confirm, the key elements of the proposed development sought for approval as part of the planning application is as follows:

- 244 residential dwellings (Use Class C3);
- 162.6 sqm of commercial space (Use Class E);

- 79.9sqm of residents' communal space;
- 0.82 ha of park;
- Access; and
- Associated infrastructure.

Application Description

5.6 The proposed development is defined on the planning application forms as:

> *"Full planning application proposing the demolition of the existing 29 residential properties, the Collyhurst Village Store, and associated car parking on Thornton Street North, Harrowby Drive, Johnny King Close, Anslow Close and Churnet Street and erection of a residential led-development comprising 3 and 4 storey houses; 2no 5 and 6 storey apartment buildings (Use Class C3) with ground floor flexible commercial units (Use Class E); and the creation of a new park with associated car parking, cycle and refuse storage, landscaping, public realm and infrastructure"*

Development Parameters

5.7 As detailed in Chapter 2: Approach, the assessment parameters include the detailed layout plans, sections and elevations, and means of access. These plans, along with the written description of the proposed development, allow the likely significant effects of the proposals to be fully assessed and appropriate mitigation measures secured. The development parameters which have been used within the assessment of environmental effects are presented in the drawing schedule presented at the end of this chapter.

5.8 Details of the proposed development are described in the following sections. Further supporting information is provided in the accompanying Design and Access Statement (DAS) (Buttress, January 2021) submitted with the application.

5.9 A Drawing Schedule is presented at the end of this chapter which includes the full suite of detailed drawings that have been prepared and are submitted for approval with the planning application and have been used within the assessment of environmental effects. A description of the proposals is presented below which should be read alongside the drawings contained in the Drawing Schedule. The detailed drawings can be found in Volume 2a: Main Text Figures of this ES.

5.10 The following sections describe the detailed plans and schedule of accommodation in Table 5.1. These have formed the basis of the assessment.

Use and Amount of Development

5.11 Full planning permission is sought for residential development. The development comprises the following:

- 168 houses;

- 76 apartments;
- 162.6sqm of commercial space;
- 79.9sqm of residents' communal space; and
- 0.82ha of park.

5.12 The planning application seeks full planning consent for the land use and amount set out in Table 5.1.

Table 5.1: Schedule of Accommodation

Use	Quantum
Residential Units (Use Class C3)	Apartment Block 1: 50 Apartment Block 2: 26 Houses: 168
Floors	Apartment Block 1: 6 storeys Apartment Block 2: 5 storeys Houses: 3 – 4 storeys
Commercial floorspace (Use Class E) within ground floor of Apartment Block 1	162.6m^2
Communal Space (Use Class E) within ground and first floor of Apartment Block 1	79.9m^2
Cycle storage	380
Car Parking Spaces	204
Scooter / motorcycle parking	8

Demolition

5.13 The proposed development includes the demolition of 29 existing residential properties, the Collyhurst Village Store, substation and associated car parking. A Demolition Plan outlines the location of the buildings to be demolished **(ref. 8871-BA-MP-XX-DR-A-(01)104**).

Houses and Apartments

5.14 Overall, the proposed development will provide 244 residential units comprising of houses and apartments. The Site Layout Plan (**ref. 8871-BA-MP-00-DR-A-(04)706**) outlines the proposed layout of the development. The Housetype Plan (**ref. 8871-BA-MP-XX-DR-A-(04)702**) shows the houses will comprise of a mix of 2, 3, 4 and 5

bedrooms and the apartments will comprise a mix of 1 and 2 bedrooms. The exact mix is outlined in Table 5.2 below.

Table 5.2: Schedule of Residential Accommodation

	Houses	Apartments
Ground Floor 2 Bed Duplexes	-	12
Ground Flood 3 Bed Duplexes	-	4
1 Bed	-	18
2 Bed	56	40
3 Bed	88	2
4 Bed	23	-
5 Bed	1	-
Total	**168**	**76**

5.15 The proposals include a range of different house types. Visuals of the housetypes are provided in the DAS (pages 76 – 93) and described below:

Table 5.3: Schedule of Housetypes

Housetype	Tenure	No. bedrooms	No. storeys	Floor area (sqm)	Roof terrace / garden	Bin/bike store
House type A	Open market	2	4	85.3	Roof terrace	Bin and bike store on driveway
House type B	Open market	3	3	103.6	Rear garden and roof terrace	Bin store on driveway Bike store in

Housetype	Tenure	No. bedrooms	No. storeys	Floor area (sqm)	Roof terrace / garden	Bin/bike store
						garden
House type C	Social rent	3	3	102.6	Rear garden and roof terrace	Bin and bike store on driveway
House type D	Open market	4	3	113.6	Rear garden	Bin store on driveway Bike store in garden
House type E	Social rent	3	3	113.5	Rear garden and roof terrace	Bin and bike store on driveway
House type F	Open market	4	3	116.1	Rear garden	Bin store on driveway Bike store in garden
House type G	Social rent	4	3	117.3	Rear garden	Bin and bike store on driveway
House type H	Social rent	5	3	135.3	Rear garden	Bin and bike store on driveway
House type I	Social rent	4	3	125.4	Rear garden	Bin and bike store on driveway

5.16 The proposals include a range of different apartment types. Floor plans of the apartment buildings are provided in the DAS (pages 66-69) and described below. The apartment buildings have been designed for ultimate flexibility so that they can meet the needs of different age groups, including the elderly. Block 1 includes a resident's common room as well as storage for scooters. Table 5.4 below sets out the schedule of apartment types.

Table 5.4: Schedule of Apartment Types

Apartment type	Tenure	No. bedrooms	Bin/bike store
Duplex	Social rent	2	Internal shared
Duplex	Social rent	3	Internal shared
1 bedroom	Social rent	1	Internal shared
2 bedroom	Social rent	2	Internal shared
3 bedroom	Social rent	3	Internal shared

5.17 The tenure mix is proposed as follows:

- 100 Social Rent Dwellings (41%): 24 of these will be houses and 76 will be apartments; and
- 144 Private Dwellings (59%): all 144 will be houses.

5.18 The tenure mix is set out in Table 5.5 below.

Table 5.5: Tenure Mix

House Type	Private	Social Rent	Total
2 Bed 4 Person	56	-	56
3 Bed 5 Person	72	15	87
4 Bed 6 Person	12	5	17
4 Bed 6 Person (end)	4	2	6

House Type	Private	Social Rent	Total
5 Bed 7 Person	-	1	1
3 Bed 5 Person (Adapted)	-	1	1
Apartments	-	76	76
Total	**144**	**100**	**244**

5.19 The location of the open market sale dwellings and social rent dwellings have been dispersed across all plots to create a "tenure blind" development. The distribution of the homes by tenure is shown on the **Collyhurst Village Tenure Plan (ref. 8871-BA-MP-XX-DR-A-(04)704)**

Flexible Community/Commercial Space

5.20 The proposals include 162.6sqm of flexible commercial floorspace (Use Class E) located on the ground floor of the 6 storey apartment building on Rochdale Road, fronting onto the new neighbourhood square in Plot A.

5.21 Also located within the Plot A apartment building will be 129.9sqm of flexible communal floorspace. This will be spread across the ground floor (78.1sqm) and first floor (5.18sqm).

5.22 This provides a wealth of activity and opportunity for social interaction to support an active, attractive, and socially sustainable community. The community areas utilise generous glazed frontages to retain a connection to the local area and create a sense of place.

New Collyhurst Park

5.23 The proposals also include a new park located in the south eastern part of the site which includes open space, a play area, wetland, sustainable drainage systems (SuDs), combined cycle and pedestrian paths and woodland. Further details of the new park are set out below at paragraphs 5.31-5.37.

Layout

5.24 The proposed housing is arranged into four plots (see Plot Arrangement Plan **ref. 8871-BA-MP-00-DR-A-(04)721**):

i. Plot A – is bound by Shellard Road and Harrowby Close to the South, Rochdale Road to the west, Churnet Street to the north and Thornton Street North to the east. Plot A comprises a 6-storey apartment building (50 apartments) (referred to as Apartment Block 1) with flexible ground floor community and commercial uses at the junction of Shellard Road and Rochdale Road and 28 houses. Vehicular access into the parking area is from Thornton Street North.

ii. Plot B – is bound by Churnet Street to the south, Rochdale Road to the west, Paget Street to the North and Thornton Street North to the east. Plot B comprises 43 houses. Vehicular access is from Churnet Street.

iii. Plot C – is bound by Paget Street to the south, Rochdale Road to the west, an unnamed road to the north and Thornton Street North to the east. Plot C comprises a 5-storey apartment building (26 apartments) (referred to as Apartment Block 2) facing onto Rochdale Road and 46 houses. Vehicular access to the parking area is from Paget Street via Rochdale Road or Thornton Street North.

iv. Plot D – is bound by an unnamed Road to the south, Rochdale Road to the west, re-instated Marston Street to the north and Thornton Street North to the east. Plot D comprises 51 houses. Vehicular access is from the unnamed road to the south.

v. New Park –the new park is bound by Shellard Road to the south, Johnny King Close to the east, Thornton Street North to the west and Paget Street to the north. This planning application includes phase 1 of the new park which covers an area of 0.82ha. Phase 2 of the new park will be located immediately north and will form part of a future planning application at Collyhurst.

5.25 The proposals have been carefully designed to ensure an efficient, functional, secure and attractive layout that makes efficient use of the site. The layout has been informed by extensive dialogue with GMP and the Crime Impact Assessment. The proposed development has been designed to respond to the relationship with Rochdale Road by providing additional scale at the western boundary through the apartment buildings and 3 storey townhouses. To the east, and facing onto the proposed new park, low rise housing is the predominate form and is placed to create a series of perimeter blocks which clearly delineates between public routes and private amenity space.

Appearance

5.26 The DAS describes the materiality of the houses and apartments in detail. A summary is provided below.

5.27 Red multi-tones are proposed for the apartment buildings. Clay brick is the material of choice for the Collyhurst scheme because of its great aesthetic and, more importantly, the health, safety and longevity that masonry build is known to offer. The brickwork will be developed in both a stretcher bond soldier course and corbelled with cant brick detailing. The red brickwork will be detailed using vertical stack bonded soldier courses and corbled or sawtooth brickwork will enhance entrances. The brickwork will be complimented by brick deep window reveals, aluminium windows in dark grey and juliet balconies.

5.28 Entrances to the duplex apartments will be similar and will also include a buffer space to create a threshold to the apartment entrance. Corbled Brick details will be incorporated to highlight entrances and duplex apartments.

As well as the aluminium grey windows, canopies over doors will also comprise an aluminium slim roof and entrance doors will consist of grey modern timber.

5.29 The townhouses' design uses warm brick colours to create a common language across the development. A change in colour will differentiate the park facing houses from the street facing buildings. In addition, houses at key gateways have been enhanced using a different brick bond incorporating a darker brick to create further visual interest and different architectural detail. The contemporary design focuses on well-proportioned openings. A glazed brick pier between pairs of houses will add a flourish to terrace rhythm at eye level.

5.30 The houses are separated into those that are 'street view' and those that are 'park view'. The material palette for the street view houses includes a darker town of brick whereas the park view houses includes a brick with a texture and light-coloured tone complimenting whilst contrasting with the material palette of the apartment building. Both the street view and park view houses will have the following characteristics:

- Full Brick Reveals to Windows;
- Simple Window Design; Grey UVPC window frame with Flush Opening Casements;
- Careful choice of brickwork;
- Complimentary and coordinated roofing and rainwater goods;
- Feature Glazed Brick Wall for character and personalisation;
- Rainwater goods generally recessed into the rear masonry façades;
- Grey modern timber entrance doors.

5.31 Overall, the proposed development incorporates high-quality residential apartments and houses with flexible community/commercial space which complements and enhances the character of the surrounding area as well as setting a tone for the future regeneration of the Collyhurst Village neighbourhood. The appearance and materiality has been through a detailed and iterative design process with both the design team and MCC Planning Officers to ensure a high-quality finish that respects the local character and materials, including both historical references and consented future development in the vicinity.

New Park and Public Realm

5.32 Full commentary of the approach to landscaping can be found in the submitted Design and Access Statement, which should be read alongside the submitted landscape plans prepared by Exterior Architecture (see Drawing Schedule at the end of this chapter).

5.33 The landscape and public realm proposals are based on the following principles:

- A people first approach to streetscape design
- Maximise opportunities for green infrastructure

- A sustainable approach to surface water management.

5.34 The housing area is separated into four parcels. The streets in each parcel have been arranged into three categories creating a strong and distinct hierarchy across the site. The streetscape categories are:

- Green links – main north / south connections between Rochdale Road and New Collyhurst Park, this includes Paget Street and a newly created street to the northern boundary of the site
- Internal Street – these streets run north / south through the site and are accessed from Thornton Street and have no vehicle connection onto Rochdale Road. This creates an 'access only' scenario; and creates the opportunity to design a less formal streetscape.
- Living Street – these streets are 'access only' and are the least busy within the masterplan, generally only accessed by a handful of homes. They are designed along the principles of the Dutch streetscape design concept Woonerf.

5.35 The landscape/public realm proposals for the housing areas includes the development of a new neighbourhood square, part of a network of new public spaces proposed in the Northern Gateway SRF. The new square is located on the southern boundary of the site adjacent to the existing war memorial and is defined by Rochdale Road, Shellard Street and Thornton Street North. This new space will provide a visual and physical connection between the site and the war memorial, helping to integrate the memorial into the proposals. The square will also act as a community space, connected to the proposed community hub located in the ground floor of the adjacent apartment building. It is envisaged that the space will be used to hold local community events. Tree and shrub planting have been strategically placed to shelter the space from the surrounding roads. Seating opportunities are located to the edges of the space to allow for an adapted central area for events.

5.36 The new park is bounded by Shellard Road, Thornton Street North, Jonny King Street and Burgess Street. This planning application seeks to deliver Phase 1 of the park, approximately half of the area identified in the SRF. The remainder of the park will be developed in conjunction with future housing proposals for the area.

5.37 The new park consists of a number of different character areas connected by a central spine path running north / south between Shellard Street and Burgess Street. A number of secondary paths are proposed to aid access and movement around the park and ensure its integration into the surrounding proposed and existing urban grain. The character areas proposed include:

- A gateway space adjacent to Shellard Street connecting the park with a new neighbourhood square associated with Collyhurst Village. This creates an integrated public space across the two sites with priority given to pedestrians in this location of Thornton Street North.
- Areas of woodland blocks acting as structure within the park to define recreation spaces. The woodland blocks also provide significant habitat and bio-diversity benefits and provide opportunities to informal and natural play.

- Areas of open lawn providing multifunctional recreation spaces for informal sporting activities and larger team or group events.
- An orchard of fruiting trees to enhanced local habitat and biodiversity whilst creating opportunities for community-based activities such as food growing and harvesting. The inclusion of the orchard is a direct result of the public consultation process.
- A formal play space located centrally within the park creating a hive of activity for all age groups.
- A pedestrian boulevard running east / west through the park along the current alignment of Churnet Street. This route connects the park into the existing surrounding urban grain whilst establishing new routes for future development phases.
- A bio-diverse linear swale that runs parallel to Thornton Street North and is designed to attenuate surface water runoff from the park and highway.
- An area of multifunctional wetland to the north of the park, designed to be a wildlife haven whilst creating educational opportunities and attenuating surface water from Collyhurst Village to the adjacent side of Thornton Street North.

5.38 A central spine route designed for use by pedestrians and cyclists runs north / south through the park connecting the various character areas mentioned above. Significant numbers of new trees are proposed throughout the park including woodland trees, parkland trees and specimen trees.

5.39 Seating opportunities are a key consideration of the park design taking the form of regular resting opportunities along key routes, informal seating opportunities to the edges of the recreational spaces and play areas and the introduction of picnic tables and benches to key spaces such as the banks of the wetland. The seating opportunities are designed to accommodate all ages and abilities.

Highways and Access

Vehicle Access and Parking

5.40 200 car parking spaces will be provided on-site. The houses all have one space in a driveway within the curtilage of the property, 50% of these will have 7kW electric vehicle (EV) charging installed while the remaining will have infrastructure to enable instalment in the future. The apartments have communal parking courts located in the centre of the blocks, 10% of the spaces (3 parking spaces) in the communal parking will have 7kW EV charging. The apartment car parking will be secured by drop bollards and letting/allocation of the spaces will be managed by the social rent Registered Provider (RP) (MCC). 12 visitor spaces are located within the living streets. The car parking within each plot is noted in Table 5.6 below.

Table 5.6: Plot Car Parking

Plot	Car Parking		
	Houses	Apartments	Visitor
Plot A	28 (100%)	13 (26%) (2 disabled spaces)	-
Plot B	43 (100%)	-	-
Plot C	46 (100%)	11 (42%) (2 disabled spaces)	8
Plot D	51 (100%)	-	-
TOTAL	**168**	**24**	**12**

5.41 8no scooter spaces will also be provided for Apartment Block 1 in Plot A.

5.42 Vehicle access to the site from Rochdale Road is either via Paget street, Shellard Road, or the reinstated Marston Street to the north of the site (**ref 1226-01-CIV-XX-GA-DR-C-0300-P01**). Access from Thornton Street North can be from Paget Street but also directly into the southern block and via two new (unnamed) streets. The intention is for these new streets to be adopted by MCC.

5.43 There are approximately 28 additional spaces provided on the east side of Thornton Street North that are for use by visitors to the park but could also be used for visitors to residents of the development. Furthermore, there is an opportunity for a car club space to be designated in one of the on-street spaces to further encourage residents to use private vehicles less.

5.44 The number of parking spaces at the development was raised as a concern during local consultations. An analysis of the existing car ownership levels by tenure was undertaken using census data for the Lower Super Output Area Manchester 009G in which the development sits. For this area, the census shows that 52% of households that are owned have one car and 20% have two or more cars. For socially rented properties in the area, 21% had one car and 2% had two or more cars.

5.45 Assuming that car ownership levels in this area are representative of the households that will be in the area once the development is complete, these percentages have been applied to the number of units at the proposed development. Table 5.7 displays the availability analysis for the development.

Table 5.7: Car Availability Analysis

	Private houses	Socially rented houses/flats	Visitor parking	Totals
Number of units	144	100	-	244
% of households with 1 car	52%	21%	-	-
Number of households with 1 car	74	21	-	95
% of households with 2 or more cars	20%	2%	-	-
Number of households with 2 or more cars	29	2	-	31
Estimated number of cars	133	25	-	158
Number of parking spaces proposed	144	48	8	200

5.46 To calculate the number of cars for households shown to have two or more cars it have been assumed that these households have two cars, this is based on census data showing that in this area 71% of households have no car, 25% have one car and 4% have 2 cars when considering all tenures.

5.47 What this analysis shows is that the number of parking spaces that are proposed at the development exceed the number of spaces that would currently be required based on existing car ownership data for the area. However, because many of these will be at the houses, the spaces that are not in use will be on residents driveways, useful for the residents should they have visitors who have driven to the site but will not benefit the parking demand across the development.

Pedestrian Access

5.48 Pedestrians can access the site from all directions. There is a footway surrounding the perimeter of the site and all streets within the site have footways on either side and the parking courts are designed to be pedestrian

friendly with a low speed environment. There are streets on site that have no through route for vehicles but do have footways to connect through the site. Between the blocks of housing there is a proposed network of footways that connect through the site and provide direct access from parking areas to the gardens, in some instances these are gated and provide access for residents only rather than the general public, for example the access by the bus stop on Rochdale Road. The parking areas and internal streets have a different surface type to the surrounding streets and footways to encourage slower vehicle speeds and make these areas for pedestrian movement as well as vehicle movement. Footways are also designed to be continuous at junctions throughout the site, that is the surface of the carriageway raised to the level of the footway and footway surfacing continued across the footway to make walking through the development more pleasant and act as traffic calming.

Public Transport Access

5.49 Residents of the proposed development will be able to access the development using existing public transport services. As noted in Chapter 3, there are bus services that run directly past the site along Rochdale Road. The southbound stop is adjacent to the site, accessible from the street just to the north that provides access for pedestrians and cycles but is not a through-route for vehicles. The nearest Metrolink stop is Monsall approximately 600m to the northeast of the site.

Cycle Access and Cycle Parking

5.50 412 cycle parking spaces will be provided in secure cycle stores. This equates to a 169% provision across the site as a whole. The secure cycle stores will be located within gardens or driveways of the houses and in secure indoor stores on the ground floor with direct access from the street for the apartments, which is in accordance with Manchester City Council guidelines. The provision of cycle parking per plot is outline in Table 5.8 below.

Table 5.8: Cycle Parking Provision

Plot	Cycle Spaces - Houses	Cycle Spaces - Apartments
Plot A	56 (200%)	50 (100%)
Plot B	86 (200%)	-
Plot C	92 (200%)	26 (100%)
Plot D	102 (200%)	-
TOTAL	**336**	**76**

5.51 An additional 15 bike stands will be provided within the Collyhurst New Park providing spaces for up to 30 bikes.

Surface Water Drainage Strategy and SuDS.

5.52 A Flood Risk Assessment (FRA) and Drainage Strategy has been developed by Civic Engineers and is provided at **Appendix 8.1**.

5.53 The drainage strategy has been developed in line with the drainage hierarchy. The preferred discharge location would be via infiltration; however, this has been discounted due to the historic nature of the site and potential contamination sources which may pose a contamination risk.

5.54 The next preferred method of surface water discharge is to a water body. There are two culverts that pass beneath the site, both of which are understood to be associated with the Moss Brook. One of the culverts is understood to enter the site form the north before turning 90 degrees and existing towards Rochdale Road. The second culvert generally follows the line of Thornton Street North, mapping suggests that the culvert veers to the west as it reached the southernmost part of the site, running across the street currently known as Overbrook St. The culverts are understood to vary in depth between 10m-20m below the site.

5.55 The third preferred method is discharge to a surface water sewer. here are a number of surface water networks within and in the vicinity of the site.

5.56 The existing UU network discharges into the culvert beneath Thornton Rd. It is therefore proposed to discharge surface water from the site to the surface water sewer network which then in turn discharges to the watercourse beneath the site.

5.57 For the purposes of the drainage strategy, the site is divided into four catchments. These include:

- Catchment A;
- Catchment B;
- Catchment C; and
- Catchment D.

5.58 The catchment plans for the site are located within the FRA at **Appendix 8.1**.

5.59 The proposed development is located on 'Brownfield' land. In accordance with the Manchester City, Salford City and Trafford Councils Strategic Flood Risk Assessment (SFRA) the proposed development must therefore provide a 50% betterment in surface water runoff up to the 1 in 100-year storm event with a 40% allowance for climate change. Attenuation will be provided on site to accommodate flows up to the 1 in 100-year event with a 40% allowance for climate change. Discharge rates and attenuation for the catchments are detailed in Table 5.9 below.

Table 5.9: Proposed Discharge Rates and Attenuation

Catchment	Total Area (m^2)	Existing Qbar Runoff Rates	Existing Brownfield Qbar Runoff Rates	Proposed Runoff Rate	Attenuation Volume
Catchment A	7,331m²	N/A	34.8 l/s	17.4 l/s	225 m³
Catchment B	6,627m²	5.1 l/s	N/A	3.8 l/s (Greenfield Qbar)	212 m³
Catchment C	7,797m²	5.2 l/s	N/A	5.2 l/s (Greenfield Qbar)	251 m³
Catchment D	7,687m²	N/A	45 l/s	22.5 l/s	246 m³

5.60 The proposal includes collecting the foul drainage from each building via a conventional piped system and running to a connection to the existing United Utilities network within Thornton Street at an unrestricted rate. Preferred connection/s to be confirmed and agreed with UU.

5.61 Any connection to the public sewer is subject to formal agreement with United Utilities under Section 106 of the Water Industry Act 1991.

Vegetation and Trees

5.62 The proposed development requires the removal of 208 individual trees. The tree removal is to enable ground works to be undertaken and the site to be cleared ready for redevelopment. There are 11no existing trees which will be retained as part of the proposals. Of these, 7no trees will be retained along Rochdale Road helping to retain a degree of the existing mature tree line along this boundary of the site. In addition to the 7no trees along Rochdale Road, 4no trees will be retained within the eastern area of the site.

5.63 As part of the replacement strategy 464 trees are proposed, representing a 1:2 minimum replacement policy. The replacement proposals include new street trees, areas of woodland, an orchard and parkland trees, the majority of which will be semi-mature when planted. The principals of the tree replacement strategy are:

- 1:2 minimum tree replacement strategy;
- Contribute towards biodiversity net gain;
- For the new park:
    - Create all year-round interest;

- Incorporate storm water management;
- Emphasise different typologies for example, woodland, orchard and specimen trees; and
- Incorporate secure by design parameters.

- For the housing development:
  - Reflect the binney sandstone within the follar palette;
  - Create seasonal interest;
  - Encourage biodiversity through a choice of pollinator species;
  - Incorporate secure by design parameters to achieve permeability and maintain site lines across spaces; and
  - Support the SuDS strategy.

Servicing

5.64 The quiet nature of the streets within the proposed development means that servicing and deliveries should be able to take place adjacent to the house where the delivery is taking place. The streets surrounding the site are all two-way with no Traffic Regulation Orders to prevent a vehicle from loading or unloading for a short period of time. The parking courts could also be used if access is required into the rear of any property.

5.65 Bin stores are located in covered stores to the front of the houses and on the ground floor of the apartment blocks. The apartment block bin stores will have secure doors that do not open across the footway to ensure that no obstruction is caused to pedestrians during servicing. Refuse collections will take place from the streets, turning heads have been provided in the parking courts to allow vehicles to turn and reduce the distance one may need to reverse.

Waste Management Strategy

5.66 Full details of the operational Refuse Management Strategy are contained at Section 6 of the DAS submitted in support of this application (including Waste Proforma). In summary, the proposed refuse strategy has been informed by pre-application discussions with MCC and accords with the guidance document GD04 issued by MCC, along with guidance on refuse outlined in the Manchester Residential Quality Guidance. GD04 provides guidance on waste storage and collection for new developments within the city.

5.67 The proposed layout has been tracked with the MCC Design Refuse Vehicle which is 11.5m long and 3m wide. The MCC Design Refuse Vehicle can be safely accommodated in all streets across the development other than in the living street at Plot C. For Plot C an alternative strategy for refuse collection has been developed which proposes refuse is collected from Paget Street.

5.68 It is our understanding that the Olympus OL-27W 8x4MS is the largest vehicle which currently operates within the MCC fleet. This vehicle is smaller than the MCC Design Refuse Vehicle and could access all streets within the proposed development including the living street within Parcel C

Construction

5.69 Precise construction methodologies will only be finalised once a developer/contractor is appointed. It is expected that the appointed contractor and its sub-contractors will at all times apply the principle of Best Practicable Means.

Construction Programme and Enabling Works

5.70 It is anticipated that construction will start on site in 2021 and full site completion by 2023. Due to the scale and nature of the development, there will be a need to sequence the construction of the scheme. The sequencing of construction is likely to take place in two main phases as follows (refer to drawing **ref. 8871-BA-MP-00-DR-A-(04)721** for details of plot locations):

1. Parcel D and C together with Apartment Blocks 1 and 2. Commercial floorspace is being delivered as part of Apartment Block 1 to ensure that the existing shop is relocated into the new development; and

2. Parcel B and A together with demolition of existing houses and construction of park (parcels E and F).

5.71 N.B. There is a potential for the demolition of the existing houses on site and construction of Parcel F of the park to occur after the construction of parcels A, B and E.

5.72 The assessments within the EIA have assumed that the existing properties are in place during construction of each phase so to assess the worst-case scenario i.e. those existing receptors being in place during the construction of Parcels A-E.

Site Compounds

5.73 The site compound will be carefully positioned within the site to avoid unnecessary visual or noise nuisance to adjacent land users.

5.74 It is proposed to utilise the compound area to offload, store and handle materials as well as for welfare facilities where appropriate. The location of the compound will enable materials to be offloaded in one controlled area and then moved within the site to the required building area. It is envisaged that strict management of loading zones will be implemented by way of a delivery booking system, which will ensure that material movements are efficiently managed and will also facilitate a 'just in time' delivery regime. Where possible, material movements will be managed to coincide with quiet periods.

Hours of Work

5.75 Working hours will be subject to agreement with MCC. However, it has been assumed that standard working hours would be followed. These are presented below:

- Monday – Friday: 07:30 - 18:00;
- Saturday: 08:00 - 13:00; and
- No working on Sundays or Bank Holidays.

5.76 Exceptions may arise, for example when abnormal loads are delivered or when specialist activities are conducted, when works may be required outside of these times. The Applicants acknowledges that should these circumstances arise, the appropriate permissions and notifications would be sought in advance from MCC.

5.77 Where works unavoidably need to take place outside the core working hours, occupiers of nearby residential properties shall be informed by the contractor in advance of the works and their likely duration.

Construction Environmental Management Plan

5.78 Section 7 of the Supporting Planning Statement (SPS) (Avison Young, January 2021) provides a framework for the preparation of the CEMP which will be prepared prior to construction and secured via a planning condition. The CEMP will outline the methods employed by developers and contractors to manage and where practical minimise the impact of the development's construction activities upon the site and surrounding area. The Plan would demonstrate a commitment to achieving high environmental standards and compliance with considerate contractor scheme procedures. The Plan will be developed with approval by MCC and will include best practice measures and those mitigation measures identified through the EIA process.

5.79 In summary, it shall outline the following;

- The Construction Programme;
- A broad plan of construction works, highlighting the various work stages and associated schedule of works and equipment requirements;
- Details of construction traffic and routing;
- Detailed site layout arrangements, including the location of site compounds, storage areas, delivery to site access and egress and on/off loading areas, parking for staff and location of construction lighting and site hoarding;
- Prohibited or restricted areas;
- Site working hours;
- Communication strategy with both MCC and the local community and confirmation of a Liaison Officer;

- Provision of monitoring and recording, including maintaining a complaints and actions register and auditing procedures; and
- Outline of key environmental management measures and details of any requirements for monitoring. This shall include details of any operations where disturbance / effects may occur, expected durations and response protocols.

5.80 Mitigation measures as identified within this ES will also be incorporated into the CEMP (refer to Chapter 16: Summary of Mitigation and Residual Effects) where necessary. Individual contractors will also incorporate relevant requirements in respect of environmental controls, based largely on standard good working practices and all other statutory requirements. All contractors will be required to adhere to the CEMP to satisfy requirements of legislation and comply with best practice with regard to environmental management.

5.81 A summary of such measures in presented in Table 5.10 below. As noted above, further detail regarding specific mitigation measures is provided in Chapter 16 of this ES.

Table 5.10: CEMP Measures

Topic Area	Proposed Measures
Neighbour and Public Relations	• The Proposed Development will be registered with the 'Considerate Construction Scheme'. This scheme ensures that contractors carry out their operations in a safe and considerate manner. • Appointment of Neighbourhood Liaison Officer who will be the named contact for the public and MCC. The officer will also maintain a log of complaints and remedial actions.
Noise, Dust and Nuisance	• Best practice measures to be adopted in line with the Control of Pollution Act 1974 and BS5228 – Noise and Vibration Control on Construction and Open Sites. Measures such as the following to be adopted; - Careful selection of plant and equipment. - Appropriate handling and storage of materials. - Restriction on drop height to lorries. - Equipment to be properly maintained, silenced where

Topic Area	Proposed Measures
	appropriate and operated to prevent excessive noise and switched off when not in use where appropriate. - Enforcement of restricted working hours for excessively noisy activities. • Dust will be managed through appropriate controls, such as monitoring of dust levels, use of dust sheets and suppressors where appropriate, wheel washing and damping down of haul routes and covering of stockpiles, skips or conveyors.
Protection of Water Resources	• Consent to discharge will be obtained from the service provider prior to any connection. • All liquids such as fuels, oils or solvents will be stored on impermeable areas with suitable bunding in accordance with legal requirements.
Ecology and Nature Conservation	• Check for invasive species prior to commencement and treatment plan put into place if required.
Energy and Water and Resource Use	• Contractors to minimise the use of resources where possible. Measures to include: - Use of energy efficient plant and equipment wherever possible. - Staff initiatives such as briefings on tap usage, plant and equipment to be turned off when not in use. - Recycling of waste and water wherever possible and provide dedicated bins for waste separation.
Waste	• Implementation of the 'just in time' regime to avoid stockpiling on site and attention to material quantity. • Re-use of material wherever possible and segregation of wastes to

Topic Area	Proposed Measures
	encourage recycling. • Maintain a log of all waste leaving site and its destination.

Summary

5.82 This chapter has presented a description of the proposed development which is supported by a set of detailed proposal drawings which together forms the basis for the assessments described in this ES.

5.83 The potential environmental impacts of the construction phase of the proposed development have been considered and all controls or measures to mitigate these effects are in line with current environmental standards and legislative requirements. Further detail of construction impacts has been presented in each technical chapter, where applicable.

5.84 The Applicants will develop and implement a CEMP for the site prior to construction, thereby ensuring that any potential environmental effects are within suitable standards or mitigated in accordance with measures identified through the EIA process, where no standards exist.

Drawing Schedule

EIA Parameter	Purpose	Drawing Number
Site Wide Arrangement Drawings		
Existing Site Location Plan - Collyhurst Village	Defines the extent of the site and the proposed development.	8871-BA-SC-XX-DR-A-(01)100
Demolition Plan	Identifies the existing buildings on site which are to be demolished	8871-BA-MP-XX-DR-A-(01)104
Collyhurst Village Housetype Plan	Defines the location of the different housetypes on site	8871-BA-MP-XX-DR-A-(04)702
Collyhurst Village Tenure Plan	Defines the location of the social and private market houses on site	8871-BA-MP-XX-DR-A-(04)704
Proposed Site Location plan	Defines the proposed layout of the development	8871-BA-MP-00-DR-A-(04)706
Plot Arrangement Plan	Defines the location of the development plots	8871-BA-MP-00-DR-A-(04)721
Proposed Site Street Elevations Plan	Defines the elevations of the proposed buildings	8871-BA-MP-XX-DR-A-(05)750
General Arrangement Drawings		
Plot A-GA Ground Floor Plan	Defines the arrangement of floors within Plot A	8871-BA-PA-00-DR-A-(04)000
Plot A-GA First Floor Plan		8871-BA-PA-01-DR-A-(04)001
Plot A-GA Second Floor Plan		8871-BA-PA-02-DR-A-(04)002
Plot A-GA Third Floor Plan		8871-BA-PA-03-DR-A-(04)003
Plot A-GA Fourth Floor Plan		8871-BA-PA-04-DR-A-(04)004

EIA Parameter	Purpose	Drawing Number
Plot A-GA Fifth Floor Plan		8871-BA-PA-05-DR-A-(04)005
Plot A-GA Roof Plan		8871-BA-PA-06-DR-A-(04)006
Plot-A-Proposed Street Elevations 1-200	Defines the elevations of Plot A	8871-BA-PA-XX-DR-A-(05)001
Plot-A-Proposed Street Sections 1-200	Defines the sections of Plot A	8871-BA-PA-XX-DR-A-(06)001
Plot B-GA Ground Floor Plan	Defines the arrangement of floors within Plot B	8871-BA-PB-00-DR-A-(04)100
Plot B-GA First Floor Plan		8871-BA-PB-01-DR-A-(04)101
Plot B-GA Second Floor Plan		8871-BA-PB-02-DR-A-(04)102
Plot B-GA Third Floor Plan		8871-BA-PB-03-DR-A-(04)103
Plot B-GA Roof Plan		8871-BA-PB-04-DR-A-(04)104
Plot B-Proposed Street Elevations 1-200	Defines the elevations of Plot B	8871-BA-PB-XX-DR-A-(05)100
Plot-B-Proposed Street Sections 1-200	Defines the sections of Plot B	8871-BA-PB-XX-DR-A-(06)100
Plot C-GA Ground Floor Plan	Defines the arrangement of floors within Plot C	8871-BA-PC-00-DR-A-(04)200
Plot C-GA First Floor Plan		8871-BA-PC-01-DR-A-(04)201
Plot C-GA Second Floor Plan		8871-BA-PC-02-DR-A-(04)202
Plot C-GA Third Floor Plan		8871-BA-PC-03-DR-A-(04)203
Plot C-GA Fourth Floor Plan		8871-BA-PC-04-DR-A-(04)204

EIA Parameter	Purpose	Drawing Number
Plot C-GA Roof Plan		8871-BA-PC-05-DR-A-(04)205
Plot C-Proposed Street Elevations 1-200	Defines the elevations of Plot C	8871-BA-PC-XX-DR-A-(05)200
Plot-C-Proposed Street Sections 1-200	Defines the sections of Plot C	8871-BA-PC-XX-DR-A-(06)200
Plot D-GA Ground Floor Plan	Defines the arrangement of floors within Plot D	8871-BA-PD-00-DR-A-(04)300
Plot D-GA First Floor Plan		8871-BA-PD-01-DR-A-(04)301
Plot D-GA Second Floor Plan		8871-BA-PD-02-DR-A-(04)302
Plot D-GA Third Floor Plan		8871-BA-PD-03-DR-A-(04)303
Plot D-GA Roof Plan		8871-BA-PD-04-DR-A-(04)304
Plot D-Proposed Street Elevations 1-200	Defines the elevations of Plot A	8871-BA-PD-XX-DR-A-(05)300
Plot-D-Proposed Street Sections 1-200	Defines the sections of Plot A	8871-BA-PD-XX-DR-A-(06)300
Housing Typology		
2B4P - Proposed Floor Plans - HT01	Defines the proposed arrangement and elevations of the proposed house types	8871-BA-H1-XX-DR-A-(04)500
2B4P - Proposed Elevations and Sections - HT01		8871-BA-H1-XX-DR-A-(05)500
3B5P - Proposed Floor Plans - HT02		8871-BA-H2-XX-DR-A-(04)550
3B5P - Proposed Elevations and		8871-BA-H2-XX-DR-A-(05)550

EIA Parameter	Purpose	Drawing Number
Sections - HT02		
3B5P - Proposed Floor Plans - HT02_S		8871-BA-H2-XX-DR-A-(04)575
3B5P - Proposed Elevations and Sections - HT02_S		8871-BA-H2-XX-DR-A-(05)575
4B6P - Proposed Floor Plans - HT03		8871-BA-H3-XX-DR-A-(04)600
4B6P - Proposed Elevations and Sections - HT03		8871-BA-H3-XX-DR-A-(05)600
4B6P - Proposed Floor Plans - HT03_S		8871-BA-H3-XX-DR-A-(04)625
4B6P - Proposed Elevations and Sections - HT03_S		8871-BA-H3-XX-DR-A-(05)625
4B6P - Proposed Floor Plans - HT04		8871-BA-H4-XX-DR-A-(04)650
4B6P - Proposed Elevations and Sections - HT04		8871-BA-H4-XX-DR-A-(05)650
4B6P - Proposed Floor Plans - HT04_S		8871-BA-H4-XX-DR-A-(04)675
4B6P - Proposed Elevations and Sections - HT04_S		8871-BA-H4-XX-DR-A-(05)675
5B7P - Proposed Floor Plans - HT05_S		8871-BA-H5-XX-DR-A-(04)700
5B7P - Proposed Elevations - HT05_S		8871-BA-H5-XX-DR-A-(05)700

EIA Parameter	Purpose	Drawing Number
3B5P - Proposed Floor Plans - HT06_S		8871-BA-H6-XX-DR-A-(04)850
3B5P - Proposed Elevations - HT06_S		8871-BA-H6-XX-DR-A-(05)850
Park Facing Houses - Façade Study		8871-BA-HX-XX-DR-A-(21)500
Landmark Housetype Façade Study		8871-BA-HX-XX-DR-A-(21)501
2-Bed Townhouses - Façade Study		8871-BA-HX-XX-DR-A-(21)502
Apartment Type Layouts		
Apartment Block 1 - Ground Floor	Defines the floor arrangements for Apartment Block 1 (A)	8871-BA-A1-00-DR-A-(04)050
Apartment Block 1 - First Floor		8871-BA-A1-01-DR-A-(04)051
Apartment Block 1 - Typical Floor - Level 02-03		8871-BA-A1-02-DR-A-(04)052
Apartment Block 1 - Fourth Floor		8871-BA-A1-04-DR-A-(04)053
Apartment Block 1 - Fifth Floor		8871-BA-A1-04-DR-A-(04)054
Apartment Block 1 - Roof Plan		8871-BA-A1-05-DR-A-(04)055
Apartment Block 1 - East and West Elevations	Defines the elevations of Apartment Block 1 (A)	8871-BA-A1-XX-DR-A-(05)050
Apartment Block 1 - North and		8871-BA-A1-XX-DR-A-(05)051

EIA Parameter	Purpose	Drawing Number
South Elevations		
Apartment Block 1 - Residential Entrance Façade Study	Façade Study of Apartment Block 1 (A)	8871-BA-A1-XX-DR-A-(21)050
Apartment Block 2 - Ground Floor	Defines the floor arrangements for Apartment Block 1 (A)	8871-BA-A3-00-DR-A-(04)250
Apartment Block 2 - First Floor		8871-BA-A3-01-DR-A-(04)251
Apartment Block 2 - Typical Floor - Level 02-03		8871-BA-A3-02-DR-A-(04)252
Apartment Block 2 - Roof Plan		8871-BA-A3-04-DR-A-(04)254
Apartment Block 2 - Elevations	Defines the elevations of Apartment Block 2 (B)	8871-BA-A3-XX-DR-A-(05)250
Apartment Block 2 - Residential Entrance Façade Study	Façade Study of Apartment Block 2 (B)	8871-BA-A1-XX-DR-A-(21)250
Apartment Block 2 - Duplex Entrance Façade Study		8871-BA-A1-XX-DR-A-(21)251
Plot D Substation		
Substation Details	Defines the detailing of the proposed substation	8871-BA-AD-XX-DR-A-(07)306
Landscaping Plans		
Collyhurst Village General Arrangement Plan	Defines the landscaping general arrangement across site	1994-EXA-00-GF-DR-L-100
Collyhurst New Park - Phase1 General Arrangement Plan	Defines the landscaping general arrangement across the new park	1994-EXA-00-GF-DR-L-101

EIA Parameter	Purpose	Drawing Number
Collyhurst Village General Arrangement Plan Sheet 1 of 3	Defines the landscaping general arrangement across site	1994-EXA-00-GF-DR-L-102
Collyhurst Village General Arrangement Plan Sheet 2 of 3		1994-EXA-00-GF-DR-L-103
Collyhurst Village General Arrangement Plan Sheet 3 of 3		1994-EXA-00-GF-DR-L-104
Collyhurst New Park - Phase1 General Arrangement Plan Sheet 1 of 3	Defines the landscaping general arrangement across the new park	1994-EXA-00-GF-DR-L-105
Collyhurst New Park - Phase1 General Arrangement Plan Sheet 2 of 3		1994-EXA-00-GF-DR-L-106
Collyhurst New Park - Phase1 General Arrangement Plan Sheet 3 of 3		1994-EXA-00-GF-DR-L-107
Collyhurst Village & New Park Phase 1 Landscape Masterplan Render	Presents a rendered masterplan of the landscaping elements across the site	1994-EXA-00-GF-DR-L-150
Collyhurst Village Tree Plan & Palette	Defines the location and types of trees to be planted across the site	1994-EXA-00-GF-DR-L-201
Collyhurst New Park - Phase1 Tree Plan & Palette		1994-EXA-00-GF-DR-L-202
Collyhurst Village Planting Plan & Palette	Defines the location and type of soft landscaping elements on site	1994-EXA-00-GF-DR-L-203

EIA Parameter	Purpose	Drawing Number
Collyhurst New Park - Phase1 Planting Plan & Palette		1994-EXA-00-GF-DR-L-204
Collyhurst Village General Levels Sitewide Plan	Defines the existing, proposed ground, and proposed finished floor levels across site	1994-EXA-00-GF-DR-L-300
Collyhurst Village General Levels Plan Sheet 1 of 3		1994-EXA-00-GF-DR-L-301
Collyhurst Village General Levels Plan Sheet 2 of 3		1994-EXA-00-GF-DR-L-302
Collyhurst Village General Levels Plan Sheet 3 of 3		1994-EXA-00-GF-DR-L-303
Collyhurst New Park - Phase1 General Levels Sitewide Plan		1994-EXA-00-GF-DR-L-304
Collyhurst New Park - Phase1 Levels Plan Sheet 1 of 3		1994-EXA-00-GF-DR-L-305
Collyhurst New Park - Phase1 Levels Plan Sheet 2 of 3		1994-EXA-00-GF-DR-L-306
Collyhurst New Park - Phase1 Levels Plan Sheet 3 of 3		1994-EXA-00-GF-DR-L-307
Collyhurst New Park - Phase1 Typical Sections A	Defines the sections across the new park	1994-EXA-00-GF-DR-L-521
Collyhurst New Park - Phase1 Sections B		1994-EXA-00-GF-DR-L-522
Highways Drawings		
Highways GA Layout Plan	Defines the proposed highways layout across the site	1226-01-CIV-XX-GA-DR-C-0300-P01

EIA Parameter	Purpose	Drawing Number
Thornton Street GA Plan Sheet 1 of 3	Defines the proposed highways layout on Thornton Street	1226-01-CIV-XX-GA-DR-C-0301-P01
Thornton Street GA Plan Sheet 2 of 3		1226-01-CIV-XX-GA-DR-C-0302-P01
Thornton Street GA Plan Sheet 3 of 3		1226-01-CIV-XX-GA-DR-C-0303-P01
Marston Street GA Plan	Defines the proposed highways layout on Marston Street	1226-01-CIV-XX-GA-DR-C-0304-P01

6. Planning Policy Context

Introduction

6.1 This chapter has been prepared by Avison Young and sets out the relevant planning policy context against which the application proposals should be considered. The chapter identifies all of the relevant policies which form the Local Development Plan in addition to relevant national planning policy and guidance. An analysis of how the scheme complies with planning policy is contained in the Supporting Planning Statement (SPS) also produced by Avison Young (January 2021).

Planning Policy Framework

Development Plan Policies

6.2 Section 38(6) of the Planning and Compulsory Purchase Act 2004 requires local planning authorities to determine planning applications in accordance with policies contained within the Statutory Development Plan unless material planning considerations indicate otherwise. In this case the Development Plan for MCC comprises:

- The Manchester Core Strategy (adopted July 2012) and Proposals Map; and,
- Saved policies from the Unitary Development Plan (2004).

Manchester Core Strategy

6.3 The Manchester Core Strategy was adopted by the City Council on 11 July 2012. It is the key document in Manchester's Local Development Framework. The Core Strategy sets out the long-term strategic planning policies for Manchester's future development. A number of UDP policies have been saved until replaced by further development plan documents to accompany the Core Strategy. As defined by the Local Development Framework Area Map, the site is within the Inner Areas, North Manchester and the extended Manchester City Boundary. The Manchester Core Strategy also divides the city into five regeneration areas in addition to the City Centre. The site is located within the North Manchester Regeneration Area.

6.4 The key policies of the Core Strategy and UDP which apply to the application site are summarised below. All other policies relevant to the determination of the application are summarised in the SPS.

6.5 **Policy SP1** – Spatial Principles - provides the key spatial principles that will guide the strategic development of Manchester to 2027. The policy encourages the centre to be a focus for economic and commercial development, retail, leisure and cultural activity, alongside high-quality city living. Policy SP1 also states that the city is covered by regeneration frameworks and all development should have regard to the character, issues and strategies set

out in the prospective plans. This policy also encourages development to minimise emissions, and to reduce the need to travel by locating development close to jobs, services, education and open space.

6.6 **Policy H1** – Overall Housing Provision - states approximately 60,000 new dwellings will need to be provided in Manchester between March 2009 and March 2027. This equates to an average of 3,333 units per year, however the rate of delivery of units will vary across the lifetime of the Core Strategy

6.7 **Policy H2** – Strategic Housing Location - states that the key location for new residential development throughout the plan period will be within the area to the east and north of Manchester City Centre identified as a strategic location for new housing. Land assembly will be supported in this area to encourage the creation of large development sites or clusters of sites providing the potential for significant regeneration benefits.

6.8 **Policy H3** – North Manchester - states that North Manchester, over the lifetime of the Core Strategy, will accommodate around 20% of the new residential development in Manchester. Priority will be given to family housing and other high value, high quality development where this can be sustained. High density housing will be permitted within or adjacent to the parts of North Manchester that lie next to the Regional Centre (Strangeways and Collyhurst area) and within Cheetham Hill and Harpurhey district centres as part of mixed-use schemes as well as along high frequency public transport routes.

6.9 **Policy H8** – Affordable Housing - requires that on all residential developments of 0.3 hectares and above, or where 15 or more units are proposed, a contribution should be made to the City-wide target for 20% of new housing provision to be affordable. There are exemptions where either a financial viability assessment is conducted that demonstrates that it is not viable to deliver affordable housing; or where material considerations indicate that intermediate or social rented housing would be inappropriate.

6.10 **Policy EN4** – Reducing CO2 Emissions by Enabling Low and Zero Carbon Development – states that all development must follow the principle of the Energy Hierarchy, and where possible, take advantage of low and zero carbon energy supplies, and use building materials with low embodied carbon.

6.11 **Policy EN5** – Strategic Areas for Low and Zero Carbon Decentralised Energy Infrastructure – states that the Regional Centre will have a major role to play in achieving an increase in the level of decentralised, low and zero carbon energy supplies. New development will be expected to take place in the context of more detailed proposals for decentralised low and zero carbon energy infrastructure in the form of energy proposals plans.

6.12 **Policy EN6** – Target Framework for CO2 Reductions from Low or Zero Carbon Energy Supplies – states that applications for residential development of 10 or more units will be expected to provide an Energy Statement, submitted as part of the Design and Access Statement, which sets out the projected regulated energy demand and associated CO2 emissions for all phases of the development. The Energy Statement must demonstrate how the development meets the domestic CO2 emissions reductions targets provided in this policy.

6.13 **Policy EN8 –** Adaptation to Climate Change - Policy EN8 encourages all new development to be adaptable to climate change in terms of the design, layout, siting and function of both buildings and associated external spaces. It also states that developers will be permitted to use green infrastructure elements such as green roofs, green walls, street trees and waterways to contribute to compliance with CO2 mitigation under policy EN6, subject to sufficient evidence to quantify their contribution to compliance.

Other Relevant Core Strategy Policies

6.14 The following additional Core Strategy policies are relevant to this planning application and are summarised in the Policy Schedule enclosed at **Appendix IX** of the SPS:

- Policy EC4 – North Manchester
- Policy T1 – Sustainable Transport
- Policy T2 – Accessible areas of opportunity and need
- Policy EN1 – Design Principles and Strategic Character Areas
- Policy EN3 – Heritage
- Policy EN9 – Green Infrastructure
- Policy EN14 – Flood Risk
- Policy EN15 – Biodiversity and Geological Conservation
- Policy EN16 – Air Quality
- Policy EN17 – Water Quality
- Policy EN18 – Contaminated Land and Ground Stability
- Policy EN19 – Waste
- Policy PA1 – Developer Contributions
- Policy DM1 – Development Management

Relevant Unitary Development Plan (UDP) Policies

6.15 The Manchester UDP was adopted by the Council in July 1995. The Manchester Core Strategy replaces significant elements of the UDP. The following saved policies are relevant to this planning application and are summarised in **Appendix X** of the SPS:

- Citywide Development Control Policy DC1.1
- Citywide Development Control Policy DC7.1
- Citywide Development Control Policy DC19.1

- Citywide Development Control Policy DC20.1
- Citywide Development Control Policy DC22.1
- Citywide Development Control Policy DC26.1
- Citywide Development Control Policy DC26.2

Other Material Considerations

6.16 There are a series of other planning policy guidance documents at a local and national level that are relevant to the determination of this application, including:

- Regeneration Frameworks;
- Manchester Residential Quality Guidance (December 2017);
- The emerging Greater Manchester Spatial Framework (GMSF);
- Manchester's Affordable Housing Strategy (December 2018);
- Emerging Manchester Local Plan;
- The National Planning Policy Framework ('Framework') (February 2019); and
- Planning Practice Guidance (March 2014).

6.17 A summary of the documents listed is set out below.

Regeneration Frameworks

Manchester Northern Gateway Strategic Regeneration Framework (2019)

6.18 The Northern Gateway SRF was endorsed by MCC at the City Council's Executive on 13 February 2019 and is a material consideration in the determination of all planning applications within the Northern Gateway. The SRF proposes 7 interconnected neighbourhoods which comprise: Collyhurst; New Cross; New Town; Red Bank; South Collyhurst; Vauxhall Gardens; and, Eggington Street and Smedley Dip. The regeneration of the Northern Gateway will need to effectively integrate these neighbourhoods, providing critical connections and achieving high-quality place making, to ensure comprehensive regeneration in the north and east of the city. The SRF sets out a vision to deliver approximately 15,000 homes supported by social and physical infrastructure including a new City River Park which will connect Queens Park and Angel Meadow.

6.19 The SRF[1] identifies the following key opportunities for Collyhurst:

- Potential for low to mid-use intensification with a mix of housing types and tenures appealing to various lifestyles and incomes;

[1] Strategic Regeneration Framework – Manchester Northern Gateway (February 2019), page 28

- Provide a mix of high-quality family accommodation;
- Create outstanding public spaces and social infrastructure for existing and new residents;
- Enhance links to bus and Metrolink nodes;
- Prime Rochdale Road frontage creates an opportunity to support a higher density of residential development and strengthen the street edge; and
- Develop a strong Gateway at Queen's Road and rationalise the junction.

6.20 The SRF includes a Development Framework which comprises:

(i) SRF-wide design and development principles that aim to guide the future development of the Northern Gateway. The design and development principles are grouped into eight overarching themes and are presented in Chapter 5 of the SRF; and

(ii) Neighbourhood design and development principles that aim to guide development in each of the neighbourhoods. These neighbourhood design and development principles are described in Chapter 6 of the SRF.

6.21 Various plans are presented within the Development Framework which are illustrative representations of the SRF wide and neighbourhood design and development principles. An Illustrative Masterplan for the entire Northern Gateway is presented at the end of Chapter 6 to show how the neighbourhoods could be developed in response to the design and development principles. The Illustrative Masterplan is an accumulation of the Indicative Spatial Frameworks presented in Chapter 6 for each neighbourhood.

6.22 The site is located within the proposed Collyhurst Village neighbourhood.

6.23 Collyhurst Village is identified as 1 of the 7 interconnected neighbourhoods in the Northern Gateway SRF with a vision for a high-quality, family-orientated, residential-led neighbourhood, with a distinctive sense of place. Furthermore, there are opportunities within the Collyhurst Village neighbourhood to improve connectivity to the city centre and existing neighbourhoods, and provide a range of public realm interventions, including a New Collyhurst Park linking Collyhurst Village to the new City River Park. The Northern Gateway SRF[2] states that Collyhurst Village will continue to be a residential-led neighbourhood in accordance with the Council's Development Plan which will be supported by suitable, high-quality social and community infrastructure. The neighbourhood will accommodate a mix of medium to high density housing types and tenures for residents of all ages, including houses and apartments all with high quality access to green spaces. It states that some blocks in the east of the neighbourhood along Rochdale Road may provide a mix of commercial and residential uses. It states that active frontages will be prioritised to support varied and safe streets. Commercial and community uses will be provided along important routes where increased footfall is expected, such as Rochdale Road.

[2] Strategic Regeneration Framework – Manchester Northern Gateway (February 2019), page 79

6.24 The SRF also highlights Collyhurst Village's public realm and public spaces opportunities that needs to be addressed, including provision for a New Collyhurst Park. The SRF[3] states that a new park in the heart of the neighbourhood will form part of a wider green network, that will connect Collyhurst Village with Vauxhall Gardens and the City River Park to the west, and Monsall to the north and east. The park will sensitively incorporate the War Memorial and Cemetery and create new opportunities for play, sports and recreation. Part of this park is included within the application site. The SRF[4] expands on this further and identifies the following being provided within the New Collyhurst Park:

- New key connection towards the tram stop;
- Water features provide sustainable drainage whilst referencing existing watercourse beneath the ground;
- Lawn areas provide open space for sport and recreation;
- Equipped play area;
- Informal pedestrian route meanders through the park;
- Existing memorial space;
- Woodland blocks break the park up into a series of spaces;
- Colourful surfacing invites play and provides space for informal sport and recreation; and
- Well-designed seating and lighting.

6.25 The application site is identified by the Collyhurst Village spatial framework as a medium to medium-high density residential development with a new park. A green link crosses the site from east to west and an opportunity for a distinctive landmark building with a focus on height is located at the junction with Rochdale Road and Shellard Road. Opportunities for a distinctive landmark building with a focus on architectural treatment are located at the junction with Paget Street and Thornton Street North; Marston Street and Rochdale Road and Marston Street and Thornton Street North. Active frontages are located facing onto Rochdale Road and the proposed new park.

Lower Irk Valley Neighbourhood Development Framework (2016)

6.26 This Neighbourhood Development Framework ('NDF') has now been replaced by the Northern Gateway SRF. In 2016, the NDF was prepared to guide the future development of the Lower Irk Valley in order to ensure a quality of new development and supporting public realm, highways and other community infrastructure that will result in a safe, accessible, vibrant, unique and sustainable residential-led neighbourhood.

North Manchester Strategic Regeneration Framework (2012)

6.27 The North Manchester Strategic Regeneration Framework ('NMSRF') seeks to guide the future regeneration and development of North Manchester. It provides an updated analysis of the physical (Place) and socio-economic

[3] Strategic Regeneration Framework – Manchester Northern Gateway (February 2019), page 82
[4] Strategic Regeneration Framework – Manchester Northern Gateway (February 2019), page 84

(People) characteristics of the area, and sets out the strategic context and policy framework that will underpin future activity in the six Wards of Charlestown, Cheetham, Crumpsall, Harpurhey, Higher Blackley, Moston and the South Collyhurst neighbourhood area of Miles Platting & Newton Heath.

Summary

6.28 In summary, there is a comprehensive and positive strategic regeneration context which underpins and supports the development proposals at the application site. The site has been consistently identified for future development through a series of non-statutory regulation frameworks including the Lower Irk Valley NDF, the North Manchester SRF and more recently in the Manchester Northern Gateway SRF. The Northern Gateway SRF was endorsed by MCC in February 2019 as a material consideration in the determination of future planning applications and to guide development within the Northern Gateway.

Manchester Residential Quality Guidance (December 2017)

6.29 The Manchester Residential Quality Guidance ('MRQG') was published in draft in August 2016 and adopted by the City Council's Executive in December 2017 and sets out MCC's design and quality standard for new housing. The quality guidance demands design excellence in all new housing built in the city, sets minimum space standards and seeks to ensure high environmental standards.

6.30 The MRQG sets out the following nine components that 'combine to deliver high quality residential development, through safe, inviting and sustainable neighbourhoods where people want to live' and developers are expected to refer to the guidance throughout the planning and development process and any new development should comply with it unless otherwise justified that it will not:

- Make it Happen – ensuring that proposals are delivered as designed, well-constructed and sustainably built;
- Make it a Home – providing sufficient space, natural light and storage to allow people to settle down and flourish;
- Make it Future Proof – anticipate the impacts and effects of climate change that can make residential design more efficient;
- Make it Practical – dealing with the clutter of life;
- Make it Manchester – understanding the characters and qualities of various parts of the city;
- Make it bring people together – encouraging a sense of community and neighbourliness;
- Make it animate streets and spaces – the interrelationship between buildings, streets and spaces in making a place feel safe and inviting;
- Make it easy to get around – ensuring that development is accessible, well-connected and easy to get around; and
- Make it work with the landscape – enhancing and improving the connection with landscape and nature.

6.31 The MRQG requires good quality residential developments to exhibit an active ground floor to facilitate animated and interesting streets which the development makes provisions for.

6.32 Well considered public realm should be an integral part of all new residential development to ensure that Manchester's neighbourhoods are attractive, vibrant and successful. Landscaping and new public realm forms an integral part of the application proposals.

6.33 The MRQC requires residential development to be functional and offer practical solutions to waste management, recycling facilities, cycle parking and storage.

Emerging Greater Manchester Spatial Framework

6.34 The emerging Greater Manchester Spatial Framework ('GMSF') is a joint plan for Manchester that will provide the land for jobs and new homes across the city region. The framework, which is being prepared by all 10 Councils working together in partnership, will ensure that we have the right land available in the right places to deliver the homes and jobs we need up to 2035, and will identify the new infrastructure such as transport, schools, health centres and utility networks required to achieve this.

6.35 A revised draft of the GMSF was published for consultation in January 2019. It was anticipated that the next draft of the GMSF would have been published for consultation in Summer 2020 however the current COVID-19 situation means timescales were pushed back. The final stage of consultation before the GMSF goes to the Secretary of State, known as the 'Publication Stage' was planned for December 2020 - January 2021. However at an extraordinary meeting of Stockport Council on Thursday 3 December 2020, the Council voted against Stockport's inclusion in the GMSF by 36 votes to 25. The nine other Greater Manchester Council's will now have to determine whether or not they can go ahead with the plan.

6.36 At the time of writing, in accordance with paragraph 48 of the Framework, no weight should be attributed to the GMSF because of the uncertainty as to whether it will go ahead, the very early stage of preparation and the extent of unresolved objections to the relevant housing policies.

Manchester's Affordable Housing Strategy

6.37 A report was endorsed by MCC's Economy Scrutiny and Executive in December 2018 which set out proposed new affordable housing policies to create a step-change in the number and tenure of affordable homes being built across the city.

6.38 The report identifies that there is a need to deliver affordable housing in the City Centre. It is also acknowledged that delivering affordable housing within the city centre is challenging. For example, land values in the city centre are significantly higher.

6.39 MCC is also seeking to deliver more affordable housing with partners such as FEC, for example the delivery of 20% of the 15,000 new homes within the North Gateway as affordable.

Emerging Manchester Local Plan

6.40 MCC is beginning a review of the Core Strategy and the saved policies from the Unitary Development Plan. The first stage of consultation on the Local Plan Issues document was recently consulted on between 7 February and 1 May 2020. Given that the new Local Plan is at a very early stage and there are currently no draft policies to assess, it can be afforded no weight in the decision-making process at this time.

The National Planning Policy Framework

6.41 The NPPF (February 2019) sets out the Government's planning policies for England and how these are expected to be applied. The overall emphasis of the Framework is to reiterate the Government's key objectives of boosting the supply of housing, facilitating economic growth, and securing sustainable development.

6.42 The NPPF defines the purpose of the planning system as being to contribute to the achievement of sustainable development. It explains at Paragraph 8 that there are three dimensions to sustainable development. These are economic, social and environmental.

6.43 Paragraph 11 of the NPPF relates to sustainable development and states that:

> *"Plans and decisions should apply a presumption in favour of sustainable development. For decision taking this means:*
>
> *c) approving developments that accord with an up to date development plan without delay; or*
>
> *d) where there are no relevant development plan policies, or the policies which are most important for determining the application are out-of-date, granting permission unless:*
>
> *i. the application of policies in this Framework that protect areas or assets of particular importance provides a clear reason for refusing the development proposed;*
>
> *or ii. any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in this Framework taken as a whole."*

6.44 The NPPF is a significant material consideration in the determination of this application and the following chapters are relevant**:**

- Chapter 2: Achieving sustainable development;
- Chapter 5: Delivering a sufficient supply of homes;
- Chapter 6: Building a strong, competitive economy;
- Chapter 8: Promoting healthy and safe communities;
- Chapter 9: Promoting sustainable transport;
- Chapter 11: Making effective use of land;

- Chapter 12: Achieving well-designed places; and
- Chapter 16: Conserving and enhancing the historic environment

6.45 Overall, the NPPF makes it clear that Local Planning Authorities should look for solutions rather than problems, and decision–takers should seek to approve applications for sustainable development.

Planning Practice Guidance

6.46 On 6th March 2014 the Department for Communities and Local Government launched the online Planning Practice Guidance (PPG) as a web-based resource to further simplify and bring together planning practice guidance for England in an accessible and usable way. The PPG is regularly updated and is intended to assist practitioners and provide further guidance on the interpretation of national planning policy within the NPPF. It is therefore a significant material consideration in the determination of the application.

Conclusion

6.47 This Chapter has identified a series of Development Plan Documents and other material considerations to be taken into account in the determination of the application. An analysis against these policies is presented in the SPS (Avison Young, January 2021) which is submitted with the planning application.

7. Townscape and Visual

Introduction

7.1 This chapter assesses the effects of the proposed development on townscape character and visual amenity. In particular it identifies and assesses the anticipated effects of change resulting from the proposed development on the character and features of the townscape; and on people's views and visual amenity within the Townscape and Visual Impact Assessment (TVIA) Study Area.

7.2 The chapter describes the methods used to assess the impacts, the baseline conditions currently existing at the site and surroundings, the potential direct and indirect impacts of the development arising from townscape and visual amenity, the mitigation measures required to prevent, reduce, or offset the impacts and the residual impacts. It has been written by Exterior Architecture.

Planning Policy Context

National Planning Policy

National Planning Policy Framework

7.3 National planning policy for England is defined within the National Planning Policy Framework (NPPF) (February 2019) that has distilled the content of previous supplementary planning documents into one comprehensive document. The NPPF is the relevant national planning policy document against which to test the proposals.

General considerations

7.4 As a central theme, the NPPF has a presumption in favour of sustainable development (para. 7) for which it defines three mutually interdependent dimensions of sustainability (para. 8) to be jointly sought (economic, social and environmental). With relevance to landscape and visual matters the third-dimension states:

> *"an environmental objective – to contribute to protecting and enhancing our natural, built and historic environment; […]".*

7.5 The planning system is identified as the vehicle for guiding Development to sustainable solutions "*but in doing so should take local circumstances into account, to reflect the character, needs and opportunities of each area*." (para. 9).

Section 12 – Achieving well-designed places

7.6 This section of the Framework identifies that *"the creation of high quality buildings and places is fundamental to what the planning and development process should achieve"* (para, 124)

7.7 Table 7.1 sets out the key design criteria on which planning decisions should be informed and their applicability to the proposed development.

Table 7.1: NPPF design commentary and applicability to site (para. 127)

NPPF guidance on well-designed places	Applicability to the site
Will function well and add to the overall quality of the area, not just for the short term but over the lifetime of the development;	The proposals focus on the creation of a new neighbourhood, introducing high-quality architecture and public realm to the area.
Are visually attractive as a result of good architecture, layout and appropriate and effective landscaping;	The proposed development proposals include buildings of high architectural merit. Extensive public realm works are associated with the proposed development including the creation of a new park.
Are sympathetic to local character and history, including the surrounding built environment and landscape setting, while not preventing or discouraging appropriate innovation or change (such as increased densities);	The proposed development constitutes a continuation of the residential character of the site and surrounding area. The proposed development will result in a higher density across the Site, (appropriate for its inner-city location) along with areas of high-quality public realm.
Establish or maintain a strong sense of place, using the arrangement of streets, spaces, building types and materials to create attractive, welcoming and distinctive places to live, work and visit;	The design serves to create a distinctive new neighbourhood with a strong sense of place. The building arrangement and choice of materials aids legibility with the intention of directing users through the site and highlighting key views.
Optimise the potential of the site to accommodate and sustain an appropriate amount and mix of development (including green and other public space) and support local facilities and transport networks;	The proposals, to create extensive areas of public realm alongside high-density residential development, are appropriate for the urban setting. The proposed development forms part of the Northern Gateway SRF.
Create places that are safe, inclusive and accessible and which promote health and well-being, with a high standard of amenity for existing and future users; and where crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesion and resilience.	The proposals aim to create a safe and welcoming environment for all site users. The proposed mix of house types will bring a attract a wide range of people allowing a strong community to develop. The public realm and communal building areas will be well lit and designed based on SBD principles.

7.8 The NPPF goes on to state *that "permission should be refused for development of poor design that fails to take the opportunities available for improving the character and quality of an area and the way it functions"* (para. 130). But that *"great weight should be given to outstanding or innovative designs which promote high levels of sustainability, or help raise the standard of design more generally in an area, so long as they fit in with the overall form and layout of their surroundings."* (para. 131).

Section 16 – Conserving and enhancing the historic environment.

7.9 This section of the NPPF states *that "local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting."* (para. 189)

7.10 The framework goes on to state that *"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"* (para. 195)

Local Planning Policy

Manchester Core Strategy (2012)

7.11 The adopted Local Policy for the Core Strategy include a number of relevant landscape policies, as follows:

Policy SO6. Environment

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

Policy CC9. Design and Heritage

> *"Design of new buildings will need to be of the highest standard in terms of appearance and function…. Development in Manchester City Centre should preserve or enhance the heritage assets that have been identified, including listed buildings, conservation areas and schedules ancient monuments."*

Policy EN1. Design Principles and Strategic Character Areas

> *"All development in Manchester will be expected to follow the seven principles of urban design, as identified in national planning policy guidance… and have regard to the strategic character area in which the development is located*

[…]

"5. Irk Valley Character Area

A tree-filled river valley, steeply cut in parts, used as informal open space. This river valley is bounded by and still contains many areas of low density residential and industrial activity with occasional formal open spaces. Its green character stops abruptly at Dantzic Street/Dalton Street where its character becomes more like that of the City Centre.

- *Development within or alongside the valley sides should also seek to enhance the valley's semi-natural appearance and function.*
- *Views into, out of and along the valley are to be considered.*

[…]"

Policy EN3. Heritage

"Throughout the City, the Council will encourage development that complements and takes advantage of the distinct historic and heritage features of its districts and neighbourhoods, including those of the City Centre.

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

Proposals which enable the re-use of heritage assets will be encourages where they are considered consistent with the significance of the heritage asset."

Policy EN9. Green Infrastructure

"New development will be expected to maintain existing green infrastructure in terms of its quantity, quality and multiple function. […] Key features of Manchester's green infrastructure will include:

- *[…] The Council will seek to protect existing street trees and promote new planting, particularly where this can enhance green links in the urban area.*
- *[…]*
- *The encouragement of green roofs, green walls, tree planting and other forms of green infrastructure to allow for the adaptation to climate change in heavily urbanised areas."*

Policy DM1. Development Management

"All development should have regard to the following specific issues for which more detailed guidance may be given within a supplementary planning document:

- *"Appropriate siting, layout, scale, form, massing, materials and detail.*

- *Impact on the surrounding areas in terms of the design, scale and appearance of the proposed development. Development should have regard to the character of the surrounding area.*

[…]

- *Effects relating to biodiversity, landscape, archaeology or built heritage."*

Other Relevant Policy, Standards and Guidance

Northern Gateway Strategic Regeneration Framework

7.12 The Northern Gateway Strategic Regeneration Framework (SRF) (February 2019) was approved by MCC's Executive on 13th February 2019.

7.13 The proposed development is located within the Collyhurst Village neighbourhood of the SRF. The document provides relevant information on the existing character of the area as well as setting out the vision for the future of Collyhurst Village which is to create:

"a high-quality, family-orientated, residential led neighbourhood, with a distinctive sense of place, a mix of housing options and a dynamic community heart, supported by high-quality social and community infrastructure."

7.14 The SRF goes on to state the opportunities for change within Collyhurst Village which comprise better connectivity to the city centre and existing neighbourhoods; a range of public realm interventions including a New Collyhurst Park; and the delivery of new housing as part of the initial phases of the Northern Gateway development.

Approach

Assessment Methodology

7.15 In this appraisal, effects are assessed as a function of both the magnitude of the impact or change and the sensitivity of the townscape resource or visual receptor affected. The adopted method of TVIA has been devised to address the specific impacts likely to result from the proposed development. The methodology draws upon the following established best practice guidance:

- Guidelines for Landscape and Visual Impact Assessment Third Edition (GLVIA) (2013) Landscape Institute) (LI) and Institute of Environmental Management & Assessment (IEMA);
- Landscape Character Assessment (2016) Technical Information Note 08/2015, Landscape Institute;
- Townscape Character Assessment (2018) Technical Information Note 05/2017, Landscape Institute; and
- An Approach to Landscape Character Assessment (2014) Natural England.

7.16 Photographs from representative viewpoints have been produced in compliance with the following:

- Technical Guidance Note 06/19: Visual Representation of Development Proposals (Landscape Institute, 2019).

7.17 Although these publications refer to 'landscape', the European Landscape Convention (ELC) definition of landscape confirms that it includes the landscapes of villages, towns and cities, i.e. townscapes. So 'townscape' is defined as the landscape within the built-up area, including the buildings and the relationships between them (LI and IEMA, 2013).

Study Area

7.18 Geographical desktop models have been created to test the theoretical visibility of the proposed development, which were used to inform both the architectural design and the visual assessment and field surveys. The extent of the area within which the proposed development will be likely to result in visual effects or effects on townscape character, is limited by the local landform and the extent of existing built-up areas. The study area has been set at a distance of 2km around the site (See **Appendix 7.1, Figure 1**), beyond which it is not considered that effects on landscape character or visual amenity will be impacted as a result of the proposed development. This is in line with GLVIA (paragraphs 5.2 and 6.2).

7.19 The Zone of Theoretical Visibility (ZTV) has been modelled through a desktop study which has drawn on digital terrain data to identify and illustrate the areas from where the Development could potentially be visible taking account of existing buildings. As a result of other intervening features, in particular trees and other tall vegetation, there are areas within the ZTV where the proposed development will not be visible. Field surveys were undertaken to confirm the desk-based study and refine the ZTV and, in this way, a series of viewpoints were identified to represent views for visual receptors within the actual ZTV.

Site Survey

Photography Methodology

7.20 This assessment is accompanied by a series of representative viewpoint photographs (**Appendix 7.2**). The locations of these have been agreed with MCC on 6th October 2020. The viewpoints have been selected to be representative of likely receptors within the study area and specifically throughout the ZTV area. A series of photographs from around the site are included within **Appendix 7.3**. These are provided to show the condition of the prevailing townscape and have not been assessed.

7.21 The agreed viewpoints were photographed using a Pentax K5 Digital SLR camera with a fixed focal length of 35mm in accordance with the GLVIA documentation and the Landscape Institute Advice Note 01/11 "Landscape and visual impact assessment".

Characterisation of Impact

Townscape Character

7.22 Townscape impacts can arise from the addition of, or changes to, physical features in the townscape, which affect its character. The townscape assessment addresses the impacts of the Development on townscape character and resources. The contribution of conservation areas to the townscape and the way they could be affected by the Development are discussed in this chapter.

7.23 The assessment of townscape impacts is structured around the identification of distinct blocks of townscape defined through homogeneity of scale, materials, land use, heritage, street pattern, open space etc. These Townscape Character Areas (TCA's) allow for a better understanding of impact potentially resulting from direct physical change and the influence this has on the wider character, setting or views. Effects are evaluated for each TCA based on the sensitivity of the townscape and magnitude or impact resulting from the Development.

7.24 Each TCA is assigned a sensitivity based on the character and quality of the existing townscape and its ability to accommodate change of the type proposed, classified as set out in Table 7.2. These classifications are further informed by the criteria set out in Table 7.3.

Table 7.2: Criteria for the Classification of Sensitivity of Townscape Receptors

Classification	Sensitivity of Townscape Character Area
High	Townscape of highly valued or relatively distinctive components and characteristics, sensitive to small changes.
Medium	Townscape of relatively common components and characteristics, reasonably tolerant of changes.
Low	Townscape of relatively inconsequential components and characteristics, the nature of which is potentially tolerant of substantial change.

Table 7.3: Criteria for the Classification of Sensitivity of Townscape Character Areas

Resource	Sensitivity of Townscape Resources		
	High	Medium	Low
Townscape quality / condition	High quality / good condition and largely intact	Moderate or low quality / moderate condition demonstrating some intactness	Low quality / poor condition and disparate elements
Sense of place	Strong sense of place/	Moderate sense of place /	No sense of place

Resource	Sensitivity of Townscape Resources		
	High	Medium	Low
	identity	identity	
Unspoilt character	Demonstrates unspoilt characteristics	Demonstrates a degree of change but with some unspoilt characteristics	Demonstrates high degree of change
Scarcity of resource	Particularly scarce or fragile townscape	Mainly common features, but occasional interesting features	Common features found in many cities/towns
Historic interest	Historic interest which contributes significantly to townscape character	Some historic interest which contributes to townscape character	Limited to no historic interest

Visual Amenity

7.25 The visual assessment considers the potential impacts on views for specified receptor groups during the day. Impacts during the night, in a well-lit urban environment, are expected to be broadly analogous with daytime impacts and are therefore not considered further.

7.26 Studies have been undertaken to establish potential visibility in association with the identification of a selection of representative viewpoints (listed in Table 7.4). The representative viewpoints cover a range of receptor groups, directions and distances and have been selected in reference to the ZTV. These viewpoint locations have been agreed by Manchester City Council (MCC) planning officers.

7.27 To determine the visual effects of the proposed development, 11 representative views have been identified by means of a desk study and field work. These have been agreed with MCC as part of the iterative scoping process. The viewpoints have been selected based on receptor type and sensitivity, and distance and direction from the site and as such they are intended to provide a suitable representation of the site and the proposed development for assessment purposes.

7.28 Visual receptors are assigned a category of sensitivity based on a combination of the activity and expectations of the predominant receptor type (e.g. residents, people at work, recreational visitor areas and so on) and the location, context and importance of the existing view, with reference to the viewpoints. Sensitivity of visual receptors is classified as in Table 7.4.

Table 7.4: Criteria for the Classification of Sensitivity of Visual Receptors

Classification	Sensitivity of Visual Receptors
High	Views for receptors with proprietary interest and/or prolonged viewing opportunities, or engaged in activity resulting in a high interest or appreciation of the view (e.g. residents or people engaged in outdoor recreation whose attention is focused on the townscape) and/or a high value of existing view (e.g. conservation area).
Medium	Activity resulting in a medium interest or appreciation of the view (e.g. people engaged in outdoor activity that does not focus on an appreciation of the townscape, such as walking or cycling to work) and/or a medium value of existing view (e.g. urban area with no particular historic or aesthetic value).
Low	Activity resulting in a low interest or appreciation of the view or passing or momentary interest in everyday surroundings (e.g. people at work or people in vehicles travelling through the area) and/or low value of existing view (e.g. mundane urban area).

Methodology for Determining Construction and Operational Effects

7.29 Townscape and visual impacts are assessed during the construction and operational phase separately. It is anticipated that construction will start on site in 2021 and full site completion by 2023. Due to the scale and nature of the development, there will be a need to sequence the construction of the scheme. The sequencing of construction is likely to take place in two main phases as shown on drawing 1226-01-CIV-XX-ZZ-SK-0005. Further detail is provided in Chapter 5: Proposed Development of this Environmental Statement.

7.30 The current baseline year is taken as 2020, as this is when the baseline work for the TVIA has been undertaken.

Townscape

7.31 Magnitude of townscape impact is determined through considerations of the scale of the Development and its fit within the existing townscape, classified as set out in Table 7.5.

Table 7.5: Criteria for the Classification of Magnitude of Townscape Impact

Classification	Magnitude of Townscape Impact
Major	Ranging from a limited change in townscape characteristics over an extensive area, to an intensive change over a more limited area.
Moderate	Moderate change in a localised area.
Minor	Minor change in a localised area.

Classification	Magnitude of Townscape Impact
Negligible	No discernible change to any component

Visual Amenity

7.32 Magnitude of visual impact is determined from a combination of the degree of change to the view due to the proposed development, including the extent of the area over which the changes will be visible, the period of exposure to the view and reversibility, classified in Table 7.6.

Table 7.6: Criteria for the Classification of Magnitude of Visual Impact

Classification	Magnitude of Visual Impact
Major	High degree of change to the existing view (e.g. loss of characteristic features) and/or high degree of exposure to view (e.g. close or open views).
Moderate	Medium degree of change to existing view (e.g. partial loss of characteristic features) and/or medium degree of exposure to view (e.g. middle-distance or partial views).
Minor	Low degree of change to existing view (e.g. limited loss of characteristic features) and/or low degree of exposure to view (e.g. long distance, interrupted or glimpsed views).
Negligible	No discernible change to any part of the view

Significance Criteria

7.33 Whilst there is a degree of professional judgement involved in determining the significance of townscape and visual effects, they are broadly determined by the interaction of the sensitivity of the receptor and magnitude of impact. This interaction results in categorisation of effects as shown in Table 7.7. Residual effects after mitigation are then categorised using the same system.

Table 7.7: Criteria for informing the Classification of Significance of Townscape and Visual Effects

Sensitivity of Resource / Receptor	Magnitude of Impact			
	Major	Moderate	Minor	Negligible
High	**Major**	**Major - Moderate**	Moderate - Minor	Negligible
Medium	**Major -Moderate**	Moderate - Minor	Minor	Negligible
Low	Moderate - Minor	Minor	Minor	Negligible

Assumptions/Limitations

7.34 This townscape and visual chapter has been undertaken in accordance with recognised industry guidelines. These include categorising individual visual receptors into receptor groups – for example, it is not practical to assess every point along a street, rather, all pedestrians using a particular street, for whatever purpose, are classified as a single receptor group.

7.35 Guidelines also require visual assessment to be undertaken from publicly accessible vantage points. However, it is also important to assess the likely effects on views from private properties for people living and working in an area. For the purpose of this assessment, assumptions have been made about views from nearby buildings in the wider area, where it is either not possible or not practical to gain access.

7.36 Also, in line with recognised guidelines, visual assessments rely upon photographs from a series of representative viewpoints, in this case 11 no. locations. These are not intended to illustrate every possible location from where there might be a view of the proposed development, but rather to present a selection of views from a variety of angles and distances, sufficient to inform decisions about the proposed development.

Consultation

7.37 Consultation has taken place between the design team and MCC to establish the TVIA methodology and an agreed list of viewpoints within the study area.

Table 7.8: Consultation

Consultee	Date and Time	Comments	Actions
Jenifer Atkinson, Case officer MCC	10/03/2020	TVIA methodology submitted to MCC for review. Assessment methodology was accepted without comments	None
Jenifer Atkinson, Case officer MCC	06/10/2020	Draft viewpoints were submitted to MCC for review. Proposed viewpoints were accepted without comments	None

Baseline Conditions

Visual baseline

7.38 11 viewpoints were considered through a process of desk-based review and field studies. The representative viewpoints are listed in Table 7.9 below and their locations, shown in **Appendix 7.1** provides an overview of the viewpoints in terms of their spatial relationship to the proposed development and designations they are located within. Baseline views for each of the viewpoints are illustrated on the photographic illustrations (**Appendix 7.2**).

Illustrations and field visits have been used as the basis for assessment of visual effects in the Potential Impacts section below.

Viewpoint 1

7.39 This viewpoint is located within Collyhurst Park, close to the park entrance on Harrowby Drive. This view is located 60m from the Site to the south east. This viewpoint is representative of residents on Harrowby Drive and users of Collyhurst Park. This view takes in the play area and sports court within Collyhurst Park in the foreground with properties on Johnny King Close and Anslow Close visible beyond the park. In the right-hand side of the view, properties on Hillman Close are visible beyond an area of open ground. The background of the view is composed of the upper portions of trees both within the site and on the far side of Rochdale Road.

7.40 *Receptor Types and sensitivity:* Residents and park users are considered to be high sensitivity receptors.

Viewpoint 2

7.41 This view is located 44m to the south west of the site at the entrance to Sand Hills Park This view is representative of users of Sand Hills Park as well as pedestrians and vehicle users travelling along Rochdale Road and Eggington Street. This view takes in Rochdale Road in the foreground with the south east portion of the site visible on the far side of the road. This area of the site is densely vegetated with shrubs however properties on Thornton Street North are partially visible beyond the vegetation. The Collyhurst War Memorial is visible in the right-hand portion of the view. The upper parts of Sheridan Court and Heyden Court, 13-storey residential towers in Monsall, are visible in the background of the view.

7.42 *Receptor Types and sensitivity:* Park users are considered to be high sensitivity receptors; pedestrians are considered medium sensitivity; and road users are considered low sensitivity.

Viewpoint 3

7.43 This view is representative of residents of Dalbury Drive and Ribblesdale Drive as well as pedestrians moving through this residential area. The viewpoint location is 135m to the west of the site. The urban grain of this residential area means that only partial views towards the site are affording from selected viewing locations. The view is funnelled by a property in the left-hand foreground of the view and by a staggered row of properties in the right of the view. An Oak tree is visible in the foreground. Within the portion of the view that is clear, partial views of further properties on Ribblesdale Drive are visible as well as trees both that line Rochdale Road and are within the site.

7.44 *Receptor Types and sensitivity:* Residential receptors are considered to be high sensitivity; pedestrians are considered medium sensitivity.

Viewpoint 4

7.45 This view is located on Rochdale Road, close to the terminus of Glendower Drive. The viewpoint location is approximately 31m from the north west corner of the site and is representative of residential receptors in the properties on Glendower Drive and Shiregreen Avenue as well as pedestrians and road users travelling along Rochdale Road. This view looks south east along Rochdale Road which makes up the foreground. Beyond the road, an uninterrupted line of trees prevents and long-range views. Those trees in the left-hard portion of the view are located within an area of woodland that sits directly north of the site. Centrally and in the right of the view, the tree line constitutes the site boundary.

7.46 *Receptor Types and sensitivity:* Residential receptors are considered to be high sensitivity receptors; pedestrians are considered Medium sensitivity; and road users are considered low sensitivity.

Viewpoint 5

7.47 This viewpoint, which lies 320m to the north of the site, is representative of park users at the southern entrance to Queens Park (a registered park and garden), residential receptors in the properties on Rochdale Road, cyclists using National Cycle Route 60 and pedestrians and road users moving along Rochdale Road. This view looks directly along Rochdale Road towards the site. In the left-hand foreground, beyond Rochdale Road sits Manchester Communication Academy. Centrally within the view, an electronic advertising screen is visible and beyond this, a band of dense vegetation comprising of trees on the wedge of land between the two sections of Queens Road, the area of woodland to the north of the site and trees on the site itself. The right-hand side of the view is composed of the fronts of properties on Rochdale Road and beyond these, more tree cover.

7.48 *Receptor Types and sensitivity:* Park users, residential receptors and cyclist using the national cycle route are considered to be high sensitivity receptors; pedestrians are considered medium sensitivity; and road users are considered low sensitivity.

Viewpoint 6

7.49 This view is located approximately 410m to the north east of the site at the entrance to Monsall Metrolink Station. This view is representative of residents in the properties on Monsall Street as well as Metrolink users, pedestrians and road users. This view looks directly along Monsall Street, with the distinctive yellow arch of the Metrolink entrance in the left-hand foreground and residential properties in the right-hand foreground. Looking along the street it is lined on both sides by properties of two and three stories. At the end of the road, trees are visible and with the exception of one tree directly at the end of the road, these are located within the site boundary. In the background, the upper part of 100 Greengate, a 44-storey tower in the Greengate area of Salford, located 2.9km from the viewpoint location, is visible.

7.50 *Receptor Types and sensitivity:* Residential receptors are considered to be high sensitivity receptors; pedestrians are considered medium sensitivity; and Metrolink users and road users are considered low sensitivity.

Viewpoint 7

7.51 This view is representative of residential receptors in the properties on Trimley Avenue, Sedgeford Road, Tollard Avenue and Burnett Close; cyclists using National Cycle Route 60; as well as pedestrians and road users on Queens Road. The viewpoint is located approximately 270m to the east of the site. This viewpoint is located on a raised bank, bordering Queens Road. It takes in Queens Road in the foreground with a bus stop centrally in the foreground. Two storey residential properties are visible on both sides of Queens Road in the middle distance. These properties, together with trees along Queens Road obscure longer distance views although the tops of trees are visible.

7.52 *Receptor Types and sensitivity:* Residential receptors and cyclists using National Cycle Route 60 are considered to be high sensitivity receptors; pedestrians are considered medium sensitivity; and road users are considered low sensitivity.

Viewpoint 8

7.53 This view is located approximately 520m to the south of the site and is representative of residents, of Roach Court, Vauxhall Court and Moss Brook Court, as well as pedestrians and road users on Rochdale Road. This view looks north east along Rochdale Road taking in the base of Roach Court in the left-hand foreground, set behind black railings. Black railings also bound the far side of Rochdale Road beyond which, an area of open grass with clusters of trees is visible. Looking towards the site, trees line both sides of the road and focus the view on a pedestrian crossing located just south of the junction of Collyhurst Street.

7.54 *Receptor Types and sensitivity:* Residential receptors are considered to be high sensitivity receptors; pedestrians are considered medium sensitivity; and road users are considered low sensitivity.

Viewpoint 9

7.55 This view is from Queens Park, a registered park and garden, and is located 490m to the north of the site. This view is representative of park users and is also representative of views from the Grade II listed Brierley Statue which sits within the park. This view looks south across the gently rolling landscape of the park. Groups of trees in the near distance screen longer views to both the left and right-hand sides of the view. In the central portion, the tree lined southern boundary of the park is clearly visible and beyond it, glimpsed views of properties on Park View. The tops of trees are visible in the background of the view.

7.56 *Receptor Types and sensitivity:* Park users are considered high sensitivity receptors.

Viewpoint 10

7.57 This view is representative of visitors to Manchester General Cemetery, a registered park and garden. The viewpoint is located 710m from the site. This view, located at the far end of the path that leads through the cemetery, takes in rows of headstones on both sides of the path in the foreground. Trees alongside the path

tend to screen views beyond the near distance but beneath the canopy line there are views of the ground falling towards tree lined boundary between the cemetery and Queens Park.

7.58 *Receptor Types and sensitivity*: Cemetery visitors are considered high sensitivity receptors.

Viewpoint 11

7.59 This view is located on a public footpath within Moston Vale, an area of open parkland on a former landfill site. The viewpoint is located 910m to the north east of the site and is representative of users of the footpath. This view, which is taken from an area of high ground within Moston Vale looks across an area of open grassland towards a group of trees that sit on the south western boundary of Moston Vale. The left-hand portion of the view is screened by a ribbon of vegetation extending in the foreground. Tops of trees on the far side of Monsall Road are visible in the background of the view.

7.60 *Receptor Types and sensitivity:* Footpath users are considered high sensitivity receptors.

Table 7.9: Representative viewpoints

VP No.	Location	Direction from Site	Designations	Visual Receptor Type/s & sensitivity	Global Co-ordinates	Distance to site
1	Collyhurst Park	East	None	Residents (high) Park users (high)	E: 385625 N: 400077	60m
2	Fitzgeorge Street – Sand Hills Park	South west	None	Park users (high) Pedestrians (medium) Road users (low)	E: 385444 N: 400132	44m
3	Dalbury Drive	West	None	Residents (high) Pedestrians (medium)	E: 385382 N: 400328	135m
4	Rochdale Road at Glendower Drive	North west	None	Residents (high) Pedestrians (medium) Road users (low)	E: 385539 N: 400475	31m
5	Rochdale Road at Park View	North	National Cycle Route; Registered park and garden	Residents (high) Park users (high) Cyclists (high) Pedestrians (medium) Road users (low)	E: 385619 N: 400762	320m
6	Monsall Street, Monsall Metrolink Station	North east	None	Residents (high) Pedestrians (medium) Metrolink users (low) Road users (low)	E: 386076 N: 400545	410m
7	Queens Road	East	National Cycle Route	Residents (high) Cyclists (high) Pedestrians (medium)	E: 385956 N: 400145	270m

VP No.	Location	Direction from Site	Designations	Visual Receptor Type/s & sensitivity	Global Co-ordinates	Distance to site
				Road users (low)		
8	Rochdale Road at Roach Court	South	None	Residents (high) Pedestrians (medium) Road users (low)	E: 385185 N: 399721	520m
9	Queens Park	North	Registered park and garden; Listed building	Park users (high)	E: 385347 N: 400888	490m
10	Manchester General Cemetery	North west	Registered park and garden	Cemetery visitors (high)	E: 385384 N: 401137	710m
11	Moston Vale	North	Public Footpath	Footpath users (high)	E: 386351 N: 401061	910m

Landscape, townscape and historic designations within the study area

7.61 The impact of the proposed development has been assessed on the following designations, the locations of which are shown on **Appendix 7.1 - Figures 4 & 5**.

Conservation areas

7.62 There are four conservation areas either wholly or partly within the 2km study area: Ancoats Conservation Area, Shudehill Conservation Area, Smithfield Conservation Area, and Stevenson Square Conservation Area.

7.63 Ancoats Conservation Area is situated wholly within the study area and at its closest sits 1.2km to the south of the site. The conservation area which is bounded by Great Ancoats Street, Oldham Road, Kemp Street, Wadeford Close, Jersey Street and the Rochdale Canal is made up of a dense urban grain and contains a number of large cotton mills fronting the canal.

7.64 Shudehill, Smithfield and Stevenson Square Conservation areas border one-another and cover the northern part of Manchester City Centre. All three sit partially within the 2km study area and are approximately 1.8km from the site at their closest.

7.65 The proposed development is not anticipated to be visible from any of the four Conservation Areas and their settings will remain unaffected. Therefore, they are not considered further in this report.

Long-distance footpaths

7.66 The Medlock Valley Way is the single long-distance footpath to pass through the study area. The Medlock Valley Way runs along the course of the River Medlock throughout the whole of East Manchester. The Medlock Valley Way passes 1.45km to the south east of the site at its closest

7.67 It is not anticipated that any part of the proposed development will be visible from the Medlock Valley Way and its setting will remain unaffected. Therefore, it is not considered further in this report.

National Cycle Routes

7.68 National Cycle Route (NCR) 60 follows the A6010 from the south east of the study area, passing 155m from the site at its closest and continuing through Queens Park to follow the Irk Valley before terminating 1.9km to the north of the site. Viewpoints 5 and 7, taken from Rochdale Road at Park View and Queens Road respectively are representative of views from the cycle route looking towards the site.

Listed buildings

7.69 The majority of Listed Buildings within the study area are located within the four conservation areas on the northern edge of Manchester City Centre. Elsewhere, there are scattered Listed Buildings, with only five within a kilometre of the site.

7.70 The closest is the Grade II listed Brierley Statue in Queens Park, erected in 1898, is represented by Viewpoint 9. At present, the plinth is in-situ whilst the statue of the former writer and council member is in storage awaiting restoration.

7.71 Other Listed Buildings within 1km of the site comprise 691-695 Rochdale Road which is located between Queens Park and Manchester General Cemetery; the Corpus Christi Basilica and public laundry within Miles Platting to the south east of the site; and the Bus Depot and Transport Museum in Cheetham Hill, to the west. All the above are grade II listed. These, along with those Listed Buildings beyond 1km of the site are not anticipated to be impacted by the proposed development and are not considered further in this report.

Registered Parks and Gardens

7.72 There are four Registered Parks and Gardens within the study area, namely Queens Park and Manchester General Cemetery to the north and Phillips Park and Phillips Park Cemetery to the south east.

7.73 The Grade II Listed Queens Park is located approximately 290m to the north of the site at its closest. This Victorian Park, opened in 1846, was originally designed by Joshua Major and is one of the first examples of a public park within a major industrial city. Viewpoints 5 and 9 are representative of views within Queens Park.

7.74 The Grade II Listed Manchester General Cemetery is located approximately 620m to the north of the site. The Cemetery dates from the same period as Queens Park which lies directly to the south and is an example of an

Early Victorian garden cemetery. Viewpoint 10 is representative of receptors within Manchester General Cemetery.

7.75 Phillips Park Cemetery and Phillips Park (both Grade II Listed) are located 1.5 and 1.8km to the south east of the site respectively. Phillips Park is a sister park to Queens Park, also designed by Major and opening on the same day in 1846. Phillips Park cemetery followed later, opening in 1866 and is a good example of a mid-Victorian municipal cemetery.

7.76 There are no views anticipated from Phillips Park or Phillips Park Cemetery and their settings will remain unaffected, they are therefore not considered further in this report.

Public Rights of Way

7.77 Beyond the long-distance footpaths discussed above, there are many pedestrian routes throughout the study area. All of the viewpoints are positioned on publicly accessible land and are representative of pedestrian receptors at these locations. Public footpaths are not considered further as an individual designation within this report.

National Landscape Character

7.78 Natural England are responsible for managing the key national landscape character descriptions for England, namely the National Character Areas. The site lies within The Natural England National Character Area (NCA) Profile 55: Manchester Conurbation (NE463).

Table 7.9: NCA 55's key characteristics in relation to the site

NCA Profile 55 Key Characteristics	Relevance to Site and study area
Large settlements have come together to form the conurbation, characterised by dense urban and industrial development, commercial, financial, retail and administrative centres, commuter suburbs and housing.	The site is located close to the centre of Manchester. The study area is predominated by inner-city residential areas but also takes in the northern edge of Manchester's administrative centre and various commercial and industrial areas.
The area is centred on low hills, enclosed by the Pennine hills to the north and east, and crossed by several meandering river valleys.	The surrounding topography is generally low lying but rises to the north. The River Irk and River Medlock meander through the study area.
Woodland is usually found in corridors along the slopes of the river valleys, and also on what was once brownfield land.	There is a significant amount of woodland within the study area. The sides of the Irk are well-wooded and connect into a number of parks and other green spaces. Furthermore, woodland has established on a number of brownfield sites, including the site itself.

NCA Profile 55 Key Characteristics	Relevance to Site and study area
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.	There are four resisted Parks and Gardens within the study area and several more informal green spaces. Many of the residential neighbourhoods within the study area developed during the industrial revolution and Parks such as Queens Park and Phillips Park are early examples of inner-city municipal parks, created for the benefit of the expanding urban population.
River valleys form important corridors of semi-natural habitats and natural green spaces – with open grassland, woodland and wetland – linking urban centres with open countryside. Many post-industrial sites and canals provide wildlife habitats.	The Irk valley and Medlock Valley provide natural corridors into the centre of Manchester and are connected to the wider network of green spaces. The Rochdale Canal also passes through the study areas and links green spaces in several former industrial parts of Manchester.
The area's legacy of industrial archaeology – particularly relating to the textile industry – is increasingly recognised. 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.	Ancoats, formally an important centre in the textile industry, is located within the study area and contains a number of significant former mill buildings. Former Mills are also located along the Rochdale Canal. Elsewhere, the study area is comprised of residential, commercial and industrial buildings dating from the 19th-, 20th- and 21st-centuries
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.	Victoria train station is located within the far south west and is connected to the many rail and tram lines that cross the study area. Monsall Metrolink station which is on the Oldham and Rochdale line is the closest to the site. The Rochdale Canal also passes through the study area.

7.79 On balance, the heavily built-up nature of the Manchester Conurbation NCA weighed against its network of natural features and industrial archaeology results in a moderate capacity for change and it is therefore considered to have a medium landscape sensitivity.

Local Landscape Character

Greater Manchester Urban Historic Landscape Character Assessment

7.80 The Greater Manchester Urban Historic Landscape Characterisation Project (GMUHLC) was carried out between July 2007 and March 2012 by the Greater Manchester Archaeological Unit. Separate reports were produced for each of the boroughs of Greater Manchester as part of a national programme supported and developed by English Heritage but carried out by local government, chiefly county council historic environment services.

7.81 The GMUHLC parcels areas of land into broad categories based on their historic land use. The full list of typologies and their distribution within the study area are shown in **Appendix 7.1: Figure 6**. According to the report, the land that makes up the site is distributed across 3 land use types. Namely Residential (Social housing), Ornamental, parkland and recreational (urban green space) and Institutional (Nursing Home/Alms House/Hostel).

7.82 Since this report was published, there have been changes to the land use within the site area and it no longer serves as an accurate reflection of land use. The area of residential land use has been reduced by the demolition of properties on Overbrook Avenue, Needwood Close and Churnet Street, whilst the demolition of the former Whitegates Nursing Home on Paget Street means that there is no longer Institutional land within the site boundary. The area of urban green space has expanded to encompass the land that has been cleared although the area of land that is designated as ornamental, parkland and recreational (urban green space in the report has become an area of woodland (regenerated scrub/woodland) in the intervening period.

7.83 The Historic landscape character types as recorded within the GMUHLCA as well as the present character types within the site are set out in table 7.10 below.

Table 7.10: GMUHLCA character areas and current landscape character in relation to the site

Broad Type	Sub Type	Sensitivity
Greater Manchester Urban Historic Landscape Character Assessment (2009)		
Residential	Social Housing – Thornton Street North, Johnny King Close, Anslow Close, Churnet Street, Overbrook Avenue, Needwood Close	Low
Ornamental, parkland & recreational	Urban green space – Area south of Paget Street	Low
Institutional	Nursing Home/Alms House/Hostel Whitegates Nursing Home, Paget Street	Low
Current Landscape Character (2020)		
Residential	Social Housing – Thornton Street North, Johnny King Close, Anslow Close	Low
Ornamental, parkland &	Urban green space –	Low

Broad Type	Sub Type	Sensitivity
recreational	Area north of Churnet Street, area formerly Overbrook Avenue, area formerly Needwood Close, area of former nursing home north of Paget Street	
Woodland	Regenerated scrub/woodland Area south of Paget Street	Low

Northern Gateway SRF

7.84 The Northern Gateway SRF identifies three existing distinct neighbourhoods within the area covered by the framework – Lower Irk Valley, New Cross and Collyhurst. The site sits wholly within Collyhurst.

7.85 The SRF refers to the townscape within the northern part of Collyhurst in which the site sits stating:

> *"Although historically the northern parts of Collyhurst comprised a dense neighbourhood made up of terraced housing, they are now characterised by low-density development comprising houses, low-rise flats and bungalows. Large areas of cleared land also reinforce the loose suburban grain. There is a predominance of walkways and cul-de-sacs (as part of the Radburn Layout) which limits internal connectivity. Distant setbacks from Rochdale Road give a sense of isolation along this arterial road."*

7.86 The Northern Gateway SRF identifies Collyhurst as an area of low value residential townscape character, with a low susceptibility to change.

The site

7.87 The site is currently partly vacant land comprising areas of hardstanding, amenity grassland and rough woodland as well as properties and a convenience store. Photographs taken from around the site are shown within **Appendix 7.3**.

7.88 The built form within the site area comprises a series of two storey social housing terraces on Thornton Street North, Johnny King Close and Anslow Close, as well as a single storey sub-station. The housing which dates from the 1960s is of a style that is generally prevalent in the local area, in red brick with boundaries of low walls and hoop-top railings. Areas of the site comprising built form are considered to be of low townscape value

7.89 The remainder of the site comprises land which stands vacant as a result of a series of clearances. This land is largely unmanaged and fenced off. There are a number of trees within this part of the site, predominantly along Rochdale Road and to the south of Paget Street. This land is considered to be of low townscape value.

Embedded Mitigation

Demolition and Construction

No embedded mitigation measures are proposed during the demolition and construction phase.

Completed Development

- Creation of New Collyhurst Park as part of the proposed development. The park, which is proposed to contain areas of woodland and wetland planting will provide a visual buffer to the built form from the east and will reinforce the network of local public green spaces;
- High quality architectural design with a coherent family of house types creating a well-considered and legible urban block;
- Restricted heights to proposed buildings with apartment blocks set at a maximum of 23.1m above AOD to restrict long-distance views of the proposed development.
- Improved street frontage to Rochdale Road. A new, tree-lined, residential street is proposed to Rochdale Road with a new public space at the south western corner of the site, adjacent to Collyhurst War Memorial; and
- Creation of a network of new and enhanced routes with pedestrian and cycle priority leading through the site and connecting to the wider network of routes and spaces.

Potential Impacts

Demolition and Construction

7.90 Demolition of the existing buildings and construction of the new buildings are likely to result in a number of impacts on townscape character and visual receptors, due to changes to the existing townscape resources and/or views, including impacts of temporary features such as construction plant and construction activity.

7.91 The impacts on visual amenity as a result of demolition and construction have been assessed on the four receptor groups that are prevalent within close proximity to the site, namely residents (high sensitivity), park users (high sensitivity), pedestrians (medium sensitivity) and road users (low sensitivity). Predicted impacts on visual amenity during demolition and construction comprise:

- Increased visibility as a result of tree removal. The loss of trees is anticipated to result in minor magnitude of change to residential, park user, pedestrian and road user receptors within close proximity to the site. A **moderate-minor adverse** effect is anticipated for residents and park users and a **minor adverse** effect for pedestrians and road users. This is considered **not significant**;

- Presence of construction traffic, plant and equipment. Due to the transient nature of this visual effect, a minor magnitude of change is anticipated to residential, pedestrian and road user receptors within close proximity to the site. A **moderate-minor adverse** effect is anticipated for residents and park users and a **minor adverse** effect for pedestrians and road users. This is considered **not significant**;
- Introduction/removal of built fabric. Based on the proposed phasing, the demolition of the existing buildings on site and the introduction of built form associated with the proposals is anticipated to result in a moderate magnitude of visual change to residents, park users, pedestrians and road users. This will result in a **major-moderate neutral** effect for residents and park users, a **moderate-minor neutral** effect for pedestrians and a **minor neutral** effect for road users. This is considered **significant** for resident and park user receptors; and
- Site safety/security lighting. Lighting associated with the construction site is anticipated to result in a minor magnitude of visual change during hours of darkness. A **moderate-minor neutral** effect is anticipated for residents and park users and a **minor neutral** effect for pedestrians and road users. This is considered **not significant**;

7.92 Demolition and construction will result in temporary impacts on the local townscape through:

- Loss of existing townscape features. Existing townscape features are considered to be low sensitivity. Demolition and construction will result in a moderate magnitude of change and a **minor neutral** effect, which is considered **not significant**;
- Loss of existing trees. Existing trees are considered to be medium sensitivity receptors. Their loss during the construction process will result in a moderate magnitude of change and a **moderate-minor adverse** effect is anticipated. This is considered **not significant**;
- Reduction in townscape quality due to the presence of construction traffic, plant and equipment. The existing townscape is considered to have a low sensitivity. The impact of construction traffic, plant and equipment is anticipated to result in minor magnitude of change. A **minor adverse, not significant** effect is anticipated; and
- The presence of temporary site cabins, fencing and illumination. Temporary site buildings, fencing and illumination are anticipated to result in a moderate magnitude of change to the existing townscape. A **moderate-minor neutral** effect is anticipated which is considered **not significant.**

Completed Development

Visual Assessment

Viewpoint 1 – Collyhurst Park

7.93 *Predicted View (at completion):* it is anticipated that New Collyhurst Park will be clearly visible beyond the boundary of Collyhurst Park. The properties that are visible on Johnny King Close and Anslow Close are proposed

to be demolished as part of the proposals and the mounded landform topped with woodland planting that forms the eastern boundary of the new park will be prominent within the view. Beyond the new park, it is anticipated glimpsed views of town houses and the upper portions of the Apartment Block A will be possible.

7.94 *Magnitude of Visual Change:* It is anticipated that the proposed development will result in a moderate beneficial change to the view as although the foreground will remain unaffected, the development will result in a complete alteration to the middle distance.

7.95 *Significance of Visual Effect:* A **major-moderate beneficial** effect is anticipated for both receptor types from this viewpoint location. This is considered **significant**.

Viewpoint 2 – Eggington Street – Sand Hills Park

7.96 *Predicted View (at completion):* It is anticipated that the proposed development will be clearly visible in this view with Apartment Block A located in the foreground, directly across Rochdale Road. The existing vegetation within the site will be removed and a new streetscape will be implemented that includes street tree planting. Along Shellard Road, new town houses will be visible fronting an area of public realm. The proposed development will screen long distance views of Sheridan and Heyden Court.

7.97 *Magnitude of Visual Change:* A major magnitude of change is anticipated from this viewpoint location. The quality of the architecture and public realm will create an attractive street frontage to Rochdale Road and form a gateway to the development. For these reasons, the change in the view is considered beneficial.

7.98 *Significance of Visual Effect:* A **major beneficial** effect is anticipated for park users, a **major-moderate beneficial** effect for pedestrians and a **moderate-minor beneficial** effect for road users. This constitutes a **significant** effect for park users and pedestrians.

Viewpoint 3 – Collyhurst Road at Dalbury Drive

7.99 *Predicted View (at completion):* It is anticipated that glimpsed views of the proposed development will be afforded in the background of the view. The upper portion of Apartment Block A will be visible above the existing trees and properties in the middle-distance. The visibility of the proposed development will increase during the winter when there is reduced screening from trees.

7.100 *Magnitude of Visual Change:* It is anticipated that there will be a minor change in the view as a result of the proposed development as some glimpsed views may be afforded. The change is considered to be neutral.

7.101 *Significance of Visual Effect:* A **moderate-minor neutral** effect is anticipated for residents and a **minor neutral** effect for pedestrians. This is considered to be **not significant**.

Viewpoint 4 – Rochdale Road at Glendower Drive

7.102 *Predicted View (at completion):* Views of the proposed development will be afforded form this viewpoint location, looking south east along Rochdale Road. The line of existing trees that form the site boundary to Rochdale Road will be removed and the new steetscape will be visible with town houses and apartment blocks fronted by a row of trees in a green verge.

7.103 *Magnitude of Visual Change:* A moderate degree of visual change is predicted from this viewing location at completion. The change is considered to be neutral as although there will be a loss of mature tree cover in the short term, the proposals will create an attractive tree lined residential street.

7.104 *Significance of Visual Effect:* A **major-moderate neutral** visual effect is predicted for residential receptors from this viewing location at completion, with a **moderate-minor neutral** effect for pedestrians and a **minor neutral** effect for road users. for residents, the visual effect from this viewpoint is considered **significant**.

Viewpoint 5 – Rochdale Road at Park View

7.105 *Predicted View (at compl*etion): It is anticipated that there will be some glimpsed views of the proposed development from this location, in the background of the view looking along Rochdale Road. The proposed development will be most visible during the winter months once leaves have fallen from the trees.

7.106 *Magnitude of Visual Change:* A minor change is anticipated to the view, on account of the development, as it will be partially visible in the background. This change is considered to be neutral.

7.107 *Significance of Visual Effect:* A **moderate-minor neutral** effect is anticipated for residents, park users and cyclists, and a **minor neutral** effect for pedestrians and road users. This is considered **not significant**.

Viewpoint 6 – Monsall Street, Monsall Metrolink Station

7.108 *Predicted View (at completion):* It is anticipated that there will be some glimpsed views of New Collyhurst Park afforded at the end of Monsall Street in the background of the view

7.109 *Magnitude of Visual Change:* A minor visual change is anticipated, with partial views afforded in the background of the view. As the new park is anticipated to be the only visible element of the proposed development, the change is considered to be beneficial.

7.110 *Significance of Visual Effect:* A **moderate-minor beneficial** visual effect is predicted for residents and a **minor beneficial** for pedestrians, Metrolink users and road users. This is considered **not significant.**

Viewpoint 7 – Queens Road

7.111 *Predicted View (at completion):* The proposed development is not anticipated to be visible from this viewpoint location due to intervening vegetation and buildings.

7.112 *Magnitude of Visual Change:* the magnitude of change is considered to be negligible as there will be no discernible change in the view as a result of the development.

7.113 *Significance of Visual Effect:* A **negligible** visual effect is anticipated for all receptor types.

Viewpoint 8 – Rochdale Road at Roach Court

7.114 *Predicted View (at completion):* It is anticipated that glimpsed views of the top part of Apartment Block A will be visible from this viewpoint location in the background of the view. It is anticipated that there will be greater visibility of the proposed development from the upper floors of Roach Court, Vauxhall Court and Moss Brook Court.

7.115 *Magnitude of Visual Change:* The magnitude of change is predicted to be minor from this viewpoint and is anticipated to be neutral.

7.116 *Significance of Visual Effect:* A **moderate-minor neutral** visual effect is predicted for residential receptors, and a **minor neutral** effect for pedestrians and road users. This is considered **not significant.**

Viewpoint 9 – Queens Park

7.117 *Predicted View (at completion):* The view from this location is not anticipated to change as a result of the proposed development as it will be screened by intervening tree cover.

7.118 *Magnitude of Visual Change:* a negligible change in the view is anticipated from this viewpoint.

7.119 *Significance of Visual Effect:* A **negligible** visual effect is anticipated for park users from this viewpoint location. This is considered **not significant.**

Viewpoint 10 – Manchester General Cemetery

7.120 *Predicted View (at completion):* Due to the tree cover in the foreground and middle distance preventing long range views towards the site, there is not anticipated to be any change in the view as a result of the proposed development.

7.121 *Magnitude of Visual Change:* The magnitude of visual change is considered to be negligible from this viewpoint as there will be no discernible change in the view.

7.122 Significance of Visual Effect: The visual effect is anticipated to be **negligible** and **not significant** for cemetery visitors.

Viewpoint 11 – Moston Vale

7.123 *Predicted View (at completion):* The view from this location is not anticipated to change as a result of the proposed development as it will be screened by intervening tree cover.

7.124 *Magnitude of Visual Change:* a **negligible** change in the view is anticipated from this viewpoint.

7.125 *Significance of Visual Effect:* A **negligible** visual effect is anticipated for footpath users from this viewpoint location. This is considered **not significant.**

Townscape Assessment

7.126 The following section sets out the analysis and assessment of anticipated effects to townscape designations and character as a result of the proposed development.

Landscape, Townscape and Historic Designations

7.127 Of those designations that have been identified in the baseline, some have been scoped out of the assessment based on desk-study and field study demonstrating that there will be no visual or townscape impact to the designated elements or their settings as a result of the development. Those designations that are not considered in this section comprise: Ancoats, Shudehill, Smithfield and Stevenson Square Conservation Areas; The Medlock Valley Way Long Distance Footpath; NCR 66; All listed buildings within the study area with the exception of the Briley Statue within Queens Park; and Phillips Park and Phillips Park Cemetery Registered Parks and Gardens.

National Cycle Routes

7.128 NCR 60 passes through the study area, at its closest point it is 80m from the site boundary. The cycle route follows Queens Road as it passes to the north of the site before turning north onto Rochdale Road. Viewpoints 5 and 7 are representative of NCR 60 on Rochdale Road and on Queens Road.

7.129 It is anticipated that views will be afforded of the proposed development and particularly New Collyhurst Park, which will be visible to cyclists as they travel along Queens Road. The high quality of the design of the architecture and public realm will result in an improvement to the wider setting of the cycle route as at passes the site.

7.130 *Magnitude of Change:* A minor magnitude of change is anticipated on NCR 60 as the wider setting will be affected for a small section of the route. It is anticipated that this change will be beneficial.

7.131 *Receptor sensitivity:* The route passes through residential areas of medium to low value in townscape terms as well as Queens Park which is considered high value. Overall, this section of National Cycle Route 60 is considered to have a medium sensitivity in townscape terms.

7.132 *Significance of townscape effect:* A **minor beneficial** impact is anticipated to NCR 60; this is considered **not significant**.

Listed Buildings

7.133 Of the Listed Buildings within the study area, only the Grade II Brierley Statue in Queens Park has been considered in this section of the report. The statue, which only has the plinth remaining in-situ is located 460m

from the site at its closest. Viewpoint 9, taken from within Queens park is representative of the view from the statue.

7.134 It is anticipated that there will be no visibility of the site from the statue and the proposed development will not affect the setting of this Listed Building.

7.135 *Magnitude of Change:* A negligible magnitude of change is anticipated.

7.136 *Receptor sensitivity:* As a Listed building, the Brierley statue is considered to be high sensitivity receptor.

7.137 *Significance of townscape effect (year 15 post construction):* **A negligible** effect is anticipated, and this is considered to be **not significant**.

Registered Parks and Gardens

7.138 Queens Park and Manchester General Cemetery are the two Registered Parks and Gardens that have been assessed.

7.139 Queens park, an important example of an Early Victorian municipal park, is located 290m from the site boundary at its closest. The park is characterised by groups of mature trees set in areas of lawn and contains a children's play area and a museum and art gallery. Viewpoint 5 is representative of the southern entrance to Queens Park and viewpoint 9 is located from within the park itself.

7.140 It is anticipated that there will be some glimpsed views of the proposed development from the southern area of the park however the immediate setting will remain unaffected. It is considered that the creation of New Collyhurst Park as part of the development will serve to complement Queens Park by adding to the network of green spaces in the area and reinforcing Queens Park's role as an historically important public park set within an inner city residential area.

7.141 *Magnitude of Change:* A minor change is anticipated to the townscape setting of Queens Park as the creation of New Collyhurst Park will reinforce its wider setting by improving green links. This change is considered to be beneficial.

7.142 *Receptor sensitivity:* As a registered park and garden of historical importance, Queens Park is considered to be a high sensitivity receptor in townscape terms.

7.143 *Significance of townscape effe*ct: A **moderate-minor beneficial** impact is anticipated to Queens Park, this is considered **not significant**.

7.144 Manchester General Cemetery is an example of early Victorian garden cemetery and is located directly to the north of Queens Park, approximately 620m from the site boundary at its closest. Viewpoint 10 is representative of receptors within Manchester General Cemetery.

7.145 There are not anticipated to be any views of the proposed development from within the cemetery and its immediate setting is not expected to be affected. The development proposals include the creation of a new public park but the intervening distance and difference in type of green space means that the proposals are not expected to have a discernible effect on the wider setting of the cemetery.

7.146 *Magnitude of Change:* A negligible magnitude of change is anticipated to Manchester General Cemetery.

7.147 *Receptor sensitivity:* As a registered park and garden of some historical importance, Manchester General Cemetery is considered to be a high sensitivity receptor in townscape terms.

7.148 *Significance of townscape effect*: A **negligible** effect is anticipated, and this is not considered to be significant.

Landscape/Townscape Character

Natural England National Character Areas

7.149 As noted above, the site lies within Natural England NCA 55: Manchester Conurbation (NE463). This character area is defined dense urban and industrial development, commercial, financial, retail and administrative centres, commuter suburbs and housing, interspersed with a network of green infrastructure. The conurbation is centred on low hills, crossed by several river valleys that thread through the urban fabric.

7.150 *Predicted magnitude of landscape change:* It is predicted that the nature and location of the Development will result in a negligible change to the key landscape characteristics of the Manchester Conurbation Character Area.

7.151 *Receptor type(s) and sensitivity:* Manchester Conurbation NCA is considered to have a Medium landscape sensitivity.

7.152 *Significance of landscape effect (year 15 post construction):* a **negligible** effect is anticipated to landscape character at a national level.

Greater Manchester Urban Historic Landscape Characterisation

7.153 The proposed development will result in a change in the landscape character both as designated in the GMUHLC Assessment and in terms of the current landscape character of the site. In terms of the broad categories, residential and ornamental, parkland and recreational landscape character will prevail on the site. There will be no institutional landscape character within the proposed development, but this is non-existent in the current site in any case.

7.154 The sub-categories within the residential and ornamental, parkland and recreational landscape character typologies are anticipated to change as a result of the proposed development.

7.155 The proposals will result in a mix of social and private housing with house types comprising of town houses and low-rise flats. The density of housing will increase as a result of the development. The anticipated changes to the

residential landscape character areas within the site are anticipated to be **moderate**. The proposed changes are considered **beneficial** as a result of the quality of architecture and improved structure in urban grain.

7.156 Within the ornamental, parkland and recreational landscape character type the sub-category will change from urban green space to public park. The area of this category will increase in comparison to the area included within the GMUHLC Assessment but will reduce compared to the current situation. The magnitude of change to this character type is considered **major**. The change from urban green space, much of which is inaccessible waste ground to a new public park is considered a **beneficial** change.

7.157 *Sensitivity*: The landscape character types that are designated within the GMUHLCA are considered to be low value in townscape character terms. The landscape character types that currently make up the site are similarly considered to be low value in townscape terms.

7.158 *Significance of landscape effect (year 15 post construction)*: It is considered that overall there will be a **moderate-minor beneficial** effect to the townscape character at a local level as a result of the proposed development. This is considered **not significant**.

Mitigation Measures

Demolition and Construction

7.159 Due to the proximity of Queens Park, Collyhurst Park and Sand Hills Park as well as areas of retained residential properties, site care should be taken during the construction period to minimise the impact of the development to these assets. Best practice measures will be implemented through a Construction Environmental Management Plan (CEMP) which will be prepared for the site and secured by a planning condition. The CEMP will set out measures to minimise the adverse effects of construction. Relating to townscape and visual matters this could cover site hoardings, construction lighting, construction traffic routes.

Completed Development

7.160 It is considered that the embedded mitigation included within the proposed development is sufficient to reduce and remove any potentially adverse effects. For this reason, the requirement for supplementary mitigation is limited.

7.161 A Landscape Management Plan (LMP) should be approved by MCC covering the ongoing maintenance of all hard and soft landscape elements within the proposed development. The LMP will ensure that the embedded mitigation in the form of the new park, improved streets and public spaces will continue to perform as appropriate mitigation for the proposed development.

Residual Impacts

Visual Assessment

Viewpoint 1 – Collyhurst Park

7.162 *Predicted View:* The proposed tree planting within New Collyhurst Park will have matured providing further screening to the built form that sits beyond although glimpsed views are still anticipated.

7.163 *Significance of Visual Effect:* It is anticipated that the proposed development will result in a moderate beneficial change to the view. A **major-moderate beneficial** effect is anticipated for both receptor types from this viewpoint location. This is considered **significant**.

Viewpoint 2 – Eggington Street – Sand Hills Park

7.164 *Predicted View:* At year 15 post construction it is anticipated that the proposed landscape to the south west corner of the site will have matured, however the proposed built form will continue to dominate the view from this location. The Northern Gateway SRF indicates that the public realm visible in the foreground of this view will form part of a new Neighbourhood Square around the war memorial.

7.165 *Significance of Visual Effect:* A major beneficial magnitude of change is anticipated from this viewpoint location. Resulting in a **major beneficial** effect for park users, a **major-moderate beneficial** effect for pedestrians and a **moderate-minor beneficial** effect for road users. This constitutes a **significant** effect for park users and pedestrians.

Viewpoint 3 – Collyhurst Road at Dalbury Drive

7.166 *Predicted View:* The proposed tree planting along Rochdale Road will have matured to further screen the built form although glimpsed views are still anticipated, especially in winter.

7.167 *Significance of Visual Effect:* It is anticipated that there will be a minor neutral change in the view as a result of the proposed development. A **moderate-minor neutral** effect is anticipated for residents and a **minor neutral** effect for pedestrians. This is considered to be **not significant**.

Viewpoint 4 – Rochdale Road at Glendower Drive

7.168 *Predicted View:* The proposed tree planting along Rochdale Road will have matured, screening the built form and creating a continuous green edge to Rochdale road, similar to the existing view. Glimpsed views of the upper portions of the proposed buildings are still anticipated, especially during winter.

7.169 Significance of Visual Effect: A moderate neutral degree of visual change is predicted from this viewing location at completion. A **major-moderate neutral** visual effect is predicted for residential receptors from this viewing

location, a **moderate-minor neutral** effect for pedestrians and a **minor neutral** effect for road users. This is considered to be **significant** for residents.

Viewpoint 5 – Rochdale Road at Park View

7.170 *Predicted View:* The proposed tree planting along Rochdale Road will have matured, further screening the built form, although some glimpsed views are still anticipated, particularly in winter.

7.171 *Significance of Visual Effect:* A minor neutral change is anticipated to the view, on account of the development, resulting in a **moderate-minor neutral** effect for residents, park users and cyclists, and a **minor neutral** effect for pedestrians and road users. This is considered **not significant**.

Viewpoint 6 – Monsall Street, Monsall Metrolink Station

7.172 *Predicted View:* As the trees within New Collyhurst Park mature, they are predicted to be visible above the buildings along Monsall Street providing a consistent tree line in the background of the view.

7.173 *Significance of Visual Effect:* A minor beneficial visual change is anticipated, with partial views afforded in the background of the view. This is predicted to result in a **moderate-minor beneficial** visual effect is for residents and a **minor beneficial** for pedestrians, Metrolink users and road users. This is considered **not significant.**

Viewpoint 7 – Queens Road

7.174 *Predicted View:* There are anticipated to be some glimpsed views of the tops of trees within New Collyhurst Park in the background of the view, however these not anticipated to be distinguishable from the existing trees in the background and there will be no discernible change in the view.

7.175 *Significance of Visual Effect:* the magnitude of change is considered to be negligible as there will be no discernible change in the view as a result of the development. A **negligible** visual effect is anticipated for all receptor types.

Viewpoint 8 – Rochdale Road at Roach Court

7.176 *Predicted View:* Tree planting in the south west corner of the site will have matured, potentially screening the built form, however, some visibility of the upper part of Apartment Block A is still predicted, particularly in winter.

7.177 *Significance of Visual Effect:* A minor neutral magnitude of change from this viewpoint is anticipated. A **moderate-minor neutral** visual effect is predicted for residential receptors, and a **minor neutral** effect for pedestrians and road users. This is considered **not significant.**

Viewpoint 9 – Queens Park

7.178 *Predicted View:* As at completion, the view is not anticipated to change on account of the proposed development.

7.179 *Significance of Visual Effect:* a negligible change in the view is anticipated from this viewpoint, resulting in a **negligible** visual effect for park users from this viewpoint location.

Viewpoint 10 – Manchester General Cemetery

7.180 *Predicted View:* As at completion, the view is not expected to change as a result of the proposed development.

7.181 Significance of Visual Effect: The magnitude of visual change is considered to be negligible from this viewpoint resulting in an anticipated **negligible** and **not significant** effect for cemetery visitors.

Viewpoint 11 – Moston Vale

7.182 *Predicted View:* As at completion, the view is not anticipated to change on account of the proposed development.

7.183 *Significance of Visual Effect:* A **negligible** visual effect is anticipated for footpath users from this viewpoint location. This is considered **not significant.**

Townscape Assessment

7.184 Taking into account the extent of embedded mitigation included within the proposed development, it is not anticipated that additional mitigation will result in a material change to those effects set out within the Potential Impacts section. The residual effects to the townscape are therefore as described above.

Table 7.11: Residual Significant Effects Summary

Description of Effect	Potential impact including significance	Mitigation	Residual Effect including significance
Construction and Demolition - Visual Effects			
Increased visibility as a result of tree removal	Moderate-minor adverse/ Minor adverse – not significant	none	Moderate-minor adverse/ Minor adverse – not significant
Presence of construction traffic, plant and equipment	Moderate-minor adverse/ Minor adverse – not significant	CEMP best practice	Moderate-minor adverse/ Minor adverse – not significant
Introduction/removal of built fabric	Major-moderate neutral/ Moderate-minor neutral/ Minor neutral – significant	CEMP best practice	Major-moderate neutral/moderate-minor neutral/minor neutral – significant
Site safety/security lighting	Moderate-minor adverse/ Minor adverse – not significant	CEMP best practice	Moderate-minor adverse/ Minor adverse – not significant
Construction and Demolition - Townscape Effects			
Loss of existing townscape features	Minor neutral – not significant	none	Minor neutral – not significant

Description of Effect	Potential impact including significance	Mitigation	Residual Effect including significance
Loss of existing trees	Moderate-minor adverse – not significant	none	Moderate-minor adverse – not significant
Reduction in townscape quality due to the presence of construction traffic, plant and equipment	Minor neutral – not significant	CEMP best practice	Minor neutral – not significant
The presence of temporary site cabins, fencing and illumination	Moderate-minor neutral – not significant	CEMP best practice	Moderate-minor neutral – not significant
Completed Development - Visual Effects			
Viewpoint 1 Collyhurst Park	Major-moderate beneficial - significant	LMP	Major-moderate beneficial - significant
Viewpoint 2 Fitzgeorge Street – Sand Hills Park	Major beneficial/ Major-moderate beneficial/ Moderate minor beneficial - significant	LMP	Major beneficial/ Major-moderate beneficial/ Moderate minor beneficial - significant
Dalbury Drive	Moderate-minor neutral/ Minor neutral	LMP	Moderate-minor neutral/ Minor neutral
Rochdale Road at Glendower Drive	Major-moderate neutral/ Moderate-minor neutral/ Minor neutral – significant	LMP	Major-moderate neutral/ Moderate-minor neutral/ Minor neutral – significant
Rochdale Road at Park View	Moderate-minor neutral/ Minor neutral	LMP	Moderate-minor neutral/ Minor neutral
Monsall Street, Monsall Metrolink Station	Moderate-minor beneficial/ Minor beneficial	LMP	Moderate-minor beneficial/ Minor beneficial
Queens Road	Negligible – not significant	None	Negligible – not significant
Rochdale Road at Roach Court	Moderate-minor neutral/ Minor neutral	LMP	Moderate-minor neutral/ Minor neutral
Queens Park	Negligible – not significant	None	Negligible – not significant

Description of Effect	Potential impact including significance	Mitigation	Residual Effect including significance
Manchester General Cemetery	Negligible – not significant	None	Negligible – not significant
Moston Vale	Negligible – not significant	None	Negligible – not significant
Completed Development - Townscape Effects			
NCR 60	Minor beneficial – not significant	LMP	Minor beneficial – not significant
Brierley Statue (Grade II Listed building)	Negligible – not significant	None	Negligible – not significant
Queens Park (Grade II Listed Registered Park and Garden)	Moderate-minor beneficial – not significant	LMP	Moderate-minor beneficial – not significant
Manchester General Cemetery	Negligible – not significant	None	Negligible – not significant
NCA 55 – Manchester Conurbation	Negligible – not significant	None	Negligible – not significant
GMUHLCA – Local Character areas	Moderate-minor beneficial – not significant	LMP	Moderate-minor beneficial – not significant

Conclusions

Demolition and Construction

7.185 Of those potential townscape and visual impacts that have been identified during demolition and construction, only the visual impact of the introduction/removal of built fabric is considered to be significant. This impact is anticipated to have a moderate magnitude of change to receptors who are close to the site which includes both residential and park user receptors. These groups are considered to have a high sensitivity and a **major-moderate neutral (significant)** effect is predicted.

Visual amenity

7.186 With reference to the ZTV and as identified in the visual assessment, views of the proposed development are limited to the immediate vicinity of the site. Generally, full or partial visibility is anticipated within a 250m radius of the site. Beyond this, visibility tends to be restricted to glimpsed views along transport corridors running in the

direction of the site. Where the visual impact of the proposed development is predicted to be **significant** (Viewpoints 1,2 & 4) the change is considered to be **beneficial** or **neutral** in nature.

Landscape, Townscape and Historic designations

7.187 **Appendix 7.1 – Figures 4 and 5** shows the location of landscape, historic and planning designations and notable movement corridors in relation to the site. The townscape designations from which the effect of the proposed development was considered comprise NCRs, Listed Buildings and Registered Parks and Gardens.

7.188 Significant effects are not anticipated to any of the assessed designations. Where an impact is anticipated, a **minor beneficial** impact is predicted to a small section of NCR 60 and a **moderate-minor beneficial** impact is anticipated to Queens Park.

Townscape character

7.189 Any changes as a result of the Development to the landscape/townscape character area at a national and local level have been evaluated. This assessment finds that at a national level the effect of the Development on landscape character will be **negligible**.

7.190 At a local level, the Development is considered to result in a **moderate** magnitude of change on the townscape character. The prevalent townscape character is considered to be low value and a **moderate-minor (not significant)** impact is therefore anticipated to townscape character at a local level. This impact is considered to be **beneficial**.

Assessment of In-Combination Effects

7.191 The proposed development forms part of the wider Northern Gateway SRF. As such, the 'development project' is described as Collyhurst Village and the wider Northern Gateway SRF development site for the purposes of the TVIA. The TVIA has therefore considered the in-combination effects of the development of the wider SRF. However, as no application for the wider SRF development site has yet been made there is limited information available for a detailed assessment to be undertaken. As such, the TVIA used assumptions made in the SRF document for Northern Gateway regarding possible quantum of development and land use locations to inform assessment parameters.

Approach

7.192 Given the scale of development, and the relativity small contribution that Collyhurst Village plays within the wider Framework area, a limited brief commentary is provided below, that seeks to summarise potential in-combination effects.

7.193 The SRF-wide Design and Development principles (section 5 of the Northern Gateway SRF) provide a general overview of the whole framework area, and information with regards to urban form and scale, land use, movement and public realm, and these plans were used as the basis of the assessment.

7.194 In accordance with the overall report, the potential effects at construction and operational stages have been considered. As details with regards to construction works, mitigation and phasing are currently unavailable, it has been assumed at this stage that standard practices will be employed and that the development of the Framework will be carried in a series of phases based over a 15 - 20 year build out. Due to lack of further information, the overall effect assumes simultaneous built out to represent a potential 'worse-case' scenario for the assessment.

7.195 It is noted that the viewpoints assessed as part of this report do not fully cover the entire area of the SRF, and as such can only be a limited evaluation of visual impacts.

Demolition and construction

7.196 The in-combination effect is likely to result in an increase in the temporary effects predicted as a result of construction.

7.197 Demolition and construction will result in temporary impacts on the local townscape through:

- Loss of existing townscape features;
- Reduction in townscape quality due to the presence of construction traffic, plant and equipment; and
- The presence of temporary site cabins, fencing and illumination.

7.198 Predicted impacts on visual amenity during demolition and construction include:

- Presence of construction traffic, plant and equipment;
- Introduction/removal of built fabric; and
- Site safety/security lighting.

Completed Scheme

Visual Amenity

7.199 Views within the area covered by the SRF are anticipated to experience major changes as a result of the SRF. In some areas, particularly close to the city centre, tall buildings are proposed and these are likely to be visible from a wide area. Visual receptors range in sensitivity, from residential receptors and users of parks and public open spaces who are considered high sensitivity to road users and workers who are considered low sensitivity (see **table 7.4**). For high and medium sensitivity receptors, the effect is anticipated to be **significant**.

7.200 It is assumed that the completed development will accord with the principles and aspirations of the SRF and as such help to deliver positive and sustainable change across the area. As such effects are likely to **beneficial** in nature.

Townscape

7.201 Development of the SRF is predicted to result in changes to designated townscape, landscape and historic elements. It is anticipated that there will be direct/ indirect impacts to the settings of conservation areas, listed buildings and other designated elements within the area as a result of development. The principles and aspirations of the SRF look to preserve and celebrate heritage assets and integrate the old and new. Designated townscape elements are generally considered to be high sensitivity receptors. A **major-moderate beneficial** effect is anticipated, which would be considered **significant**.

7.202 The SRF will provide a new comprehensive movement network across the area that promotes green travel through new pedestrian and cycle routes, a central transport interchange, as well new roads and parking areas. This network of routes will connect new green spaces and public realm areas that are well designed, safe, managed and activated by adjacent buildings. It is anticipated that the completed development will result in a **major beneficial** effect to routes and publicly accessible spaces. This is considered **significant**.

7.203 The delivery of the 7 new neighbourhoods across the Framework area will comprehensively change townscape character across the Northern Gateway, introducing distinctive, new residential communities focused around a series of public parks. The SRF will introduce new built form across the area – with building heights that allow the city centre to expand, but that also allow for a range of new residential areas to be created, with well-defined streets, defined focal points and overlooked public spaces. It is anticipated that the completed development as described in the SRF will result in a **minor beneficial (not significant)** effect to the townscape character at national level and a **major beneficial (significant)** effect at local level.

Other Information

References

Department for Communities & Local Government, (2019) National Planning Policy Framework, OGL, London

Manchester City Council, (2012) Manchester Core Strategy 2012 to 2027, MCC, Manchester

Manchester City Council, (2019) Manchester Northern Gateway Strategic Regeneration Framework, MCC, Manchester

Landscape Institute, IEMA, (2013) Guidelines for Landscape & Visual Impact Assessment, 3rd Edition, Routledge, Oxfordshire.

Landscape Institute and Institute of Environmental Management & Assessment, (2013), Guidelines for Landscape and Visual Impact Assessment Third Edition (GLVIA), LI/IEMA, London

Natural England, (2014), An Approach to Landscape Character Assessment, Natural England, York

Landscape Institute, (2016), Landscape Character Assessment, Technical Information Note 08/2015, LI, London

Landscape Institute, (2018), Townscape Character Assessment, Technical Information Note 05/2017, LI, London

Landscape Institute, (2019) Visual Representation of Development Proposals, LI,

Natural England, (2013) National Character Area Profile 55: Manchester Conurbation (NE463), Natural England, York

7. Townscape and Visual

Introduction

7.1 This chapter assesses the effects of the proposed development on townscape character and visual amenity. In particular it identifies and assesses the anticipated effects of change resulting from the proposed development on the character and features of the townscape; and on people's views and visual amenity within the Townscape and Visual Impact Assessment (TVIA) Study Area.

7.2 The chapter describes the methods used to assess the impacts, the baseline conditions currently existing at the site and surroundings, the potential direct and indirect impacts of the development arising from townscape and visual amenity, the mitigation measures required to prevent, reduce, or offset the impacts and the residual impacts. It has been written by Exterior Architecture.

Planning Policy Context

National Planning Policy

National Planning Policy Framework

7.3 National planning policy for England is defined within the National Planning Policy Framework (NPPF) (February 2019) that has distilled the content of previous supplementary planning documents into one comprehensive document. The NPPF is the relevant national planning policy document against which to test the proposals.

General considerations

7.4 As a central theme, the NPPF has a presumption in favour of sustainable development (para. 7) for which it defines three mutually interdependent dimensions of sustainability (para. 8) to be jointly sought (economic, social and environmental). With relevance to landscape and visual matters the third-dimension states:

> *"an environmental objective – to contribute to protecting and enhancing our natural, built and historic environment; […]".*

7.5 The planning system is identified as the vehicle for guiding Development to sustainable solutions "*but in doing so should take local circumstances into account, to reflect the character, needs and opportunities of each area*." (para. 9).

Section 12 – Achieving well-designed places

7.6 This section of the Framework identifies that *"the creation of high quality buildings and places is fundamental to what the planning and development process should achieve"* (para, 124)

7.7 Table 7.1 sets out the key design criteria on which planning decisions should be informed and their applicability to the proposed development.

Table 7.1: NPPF design commentary and applicability to site (para. 127)

NPPF guidance on well-designed places	Applicability to the site
Will function well and add to the overall quality of the area, not just for the short term but over the lifetime of the development;	The proposals focus on the creation of a new neighbourhood, introducing high-quality architecture and public realm to the area.
Are visually attractive as a result of good architecture, layout and appropriate and effective landscaping;	The proposed development proposals include buildings of high architectural merit. Extensive public realm works are associated with the proposed development including the creation of a new park.
Are sympathetic to local character and history, including the surrounding built environment and landscape setting, while not preventing or discouraging appropriate innovation or change (such as increased densities);	The proposed development constitutes a continuation of the residential character of the site and surrounding area. The proposed development will result in a higher density across the Site, (appropriate for its inner-city location) along with areas of high-quality public realm.
Establish or maintain a strong sense of place, using the arrangement of streets, spaces, building types and materials to create attractive, welcoming and distinctive places to live, work and visit;	The design serves to create a distinctive new neighbourhood with a strong sense of place. The building arrangement and choice of materials aids legibility with the intention of directing users through the site and highlighting key views.
Optimise the potential of the site to accommodate and sustain an appropriate amount and mix of development (including green and other public space) and support local facilities and transport networks;	The proposals, to create extensive areas of public realm alongside high-density residential development, are appropriate for the urban setting. The proposed development forms part of the Northern Gateway SRF.
Create places that are safe, inclusive and accessible and which promote health and well-being, with a high standard of amenity for existing and future users; and where crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesion and resilience.	The proposals aim to create a safe and welcoming environment for all site users. The proposed mix of house types will bring a attract a wide range of people allowing a strong community to develop. The public realm and communal building areas will be well lit and designed based on SBD principles.

7.8 The NPPF goes on to state *that "permission should be refused for development of poor design that fails to take the opportunities available for improving the character and quality of an area and the way it functions"* (para. 130). But that *"great weight should be given to outstanding or innovative designs which promote high levels of sustainability, or help raise the standard of design more generally in an area, so long as they fit in with the overall form and layout of their surroundings."* (para. 131).

Section 16 – Conserving and enhancing the historic environment.

7.9 This section of the NPPF states *that "local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting."* (para. 189)

7.10 The framework goes on to state that *"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"* (para. 195)

Local Planning Policy

Manchester Core Strategy (2012)

7.11 The adopted Local Policy for the Core Strategy include a number of relevant landscape policies, as follows:

Policy SO6. Environment

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

Policy CC9. Design and Heritage

> *"Design of new buildings will need to be of the highest standard in terms of appearance and function…. Development in Manchester City Centre should preserve or enhance the heritage assets that have been identified, including listed buildings, conservation areas and schedules ancient monuments."*

Policy EN1. Design Principles and Strategic Character Areas

> *"All development in Manchester will be expected to follow the seven principles of urban design, as identified in national planning policy guidance… and have regard to the strategic character area in which the development is located*

[…]

"5. Irk Valley Character Area

A tree-filled river valley, steeply cut in parts, used as informal open space. This river valley is bounded by and still contains many areas of low density residential and industrial activity with occasional formal open spaces. Its green character stops abruptly at Dantzic Street/Dalton Street where its character becomes more like that of the City Centre.

- *Development within or alongside the valley sides should also seek to enhance the valley's semi-natural appearance and function.*
- *Views into, out of and along the valley are to be considered.*

[…]"

Policy EN3. Heritage

"Throughout the City, the Council will encourage development that complements and takes advantage of the distinct historic and heritage features of its districts and neighbourhoods, including those of the City Centre.

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

Proposals which enable the re-use of heritage assets will be encourages where they are considered consistent with the significance of the heritage asset."

Policy EN9. Green Infrastructure

"New development will be expected to maintain existing green infrastructure in terms of its quantity, quality and multiple function. […] Key features of Manchester's green infrastructure will include:

- *[…] The Council will seek to protect existing street trees and promote new planting, particularly where this can enhance green links in the urban area.*
- *[…]*
- *The encouragement of green roofs, green walls, tree planting and other forms of green infrastructure to allow for the adaptation to climate change in heavily urbanised areas."*

Policy DM1. Development Management

"All development should have regard to the following specific issues for which more detailed guidance may be given within a supplementary planning document:

- *"Appropriate siting, layout, scale, form, massing, materials and detail.*

- *Impact on the surrounding areas in terms of the design, scale and appearance of the proposed development. Development should have regard to the character of the surrounding area.*

[…]

- *Effects relating to biodiversity, landscape, archaeology or built heritage."*

Other Relevant Policy, Standards and Guidance

Northern Gateway Strategic Regeneration Framework

7.12 The Northern Gateway Strategic Regeneration Framework (SRF) (February 2019) was approved by MCC's Executive on 13th February 2019.

7.13 The proposed development is located within the Collyhurst Village neighbourhood of the SRF. The document provides relevant information on the existing character of the area as well as setting out the vision for the future of Collyhurst Village which is to create:

"a high-quality, family-orientated, residential led neighbourhood, with a distinctive sense of place, a mix of housing options and a dynamic community heart, supported by high-quality social and community infrastructure."

7.14 The SRF goes on to state the opportunities for change within Collyhurst Village which comprise better connectivity to the city centre and existing neighbourhoods; a range of public realm interventions including a New Collyhurst Park; and the delivery of new housing as part of the initial phases of the Northern Gateway development.

Approach

Assessment Methodology

7.15 In this appraisal, effects are assessed as a function of both the magnitude of the impact or change and the sensitivity of the townscape resource or visual receptor affected. The adopted method of TVIA has been devised to address the specific impacts likely to result from the proposed development. The methodology draws upon the following established best practice guidance:

- Guidelines for Landscape and Visual Impact Assessment Third Edition (GLVIA) (2013) Landscape Institute) (LI) and Institute of Environmental Management & Assessment (IEMA);
- Landscape Character Assessment (2016) Technical Information Note 08/2015, Landscape Institute;
- Townscape Character Assessment (2018) Technical Information Note 05/2017, Landscape Institute; and
- An Approach to Landscape Character Assessment (2014) Natural England.

7.16 Photographs from representative viewpoints have been produced in compliance with the following:

- Technical Guidance Note 06/19: Visual Representation of Development Proposals (Landscape Institute, 2019).

7.17 Although these publications refer to 'landscape', the European Landscape Convention (ELC) definition of landscape confirms that it includes the landscapes of villages, towns and cities, i.e. townscapes. So 'townscape' is defined as the landscape within the built-up area, including the buildings and the relationships between them (LI and IEMA, 2013).

Study Area

7.18 Geographical desktop models have been created to test the theoretical visibility of the proposed development, which were used to inform both the architectural design and the visual assessment and field surveys. The extent of the area within which the proposed development will be likely to result in visual effects or effects on townscape character, is limited by the local landform and the extent of existing built-up areas. The study area has been set at a distance of 2km around the site (See **Appendix 7.1, Figure 1**), beyond which it is not considered that effects on landscape character or visual amenity will be impacted as a result of the proposed development. This is in line with GLVIA (paragraphs 5.2 and 6.2).

7.19 The Zone of Theoretical Visibility (ZTV) has been modelled through a desktop study which has drawn on digital terrain data to identify and illustrate the areas from where the Development could potentially be visible taking account of existing buildings. As a result of other intervening features, in particular trees and other tall vegetation, there are areas within the ZTV where the proposed development will not be visible. Field surveys were undertaken to confirm the desk-based study and refine the ZTV and, in this way, a series of viewpoints were identified to represent views for visual receptors within the actual ZTV.

Site Survey

Photography Methodology

7.20 This assessment is accompanied by a series of representative viewpoint photographs (**Appendix 7.2**). The locations of these have been agreed with MCC on 6th October 2020. The viewpoints have been selected to be representative of likely receptors within the study area and specifically throughout the ZTV area. A series of photographs from around the site are included within **Appendix 7.3**. These are provided to show the condition of the prevailing townscape and have not been assessed.

7.21 The agreed viewpoints were photographed using a Pentax K5 Digital SLR camera with a fixed focal length of 35mm in accordance with the GLVIA documentation and the Landscape Institute Advice Note 01/11 "Landscape and visual impact assessment".

Characterisation of Impact

Townscape Character

7.22 Townscape impacts can arise from the addition of, or changes to, physical features in the townscape, which affect its character. The townscape assessment addresses the impacts of the Development on townscape character and resources. The contribution of conservation areas to the townscape and the way they could be affected by the Development are discussed in this chapter.

7.23 The assessment of townscape impacts is structured around the identification of distinct blocks of townscape defined through homogeneity of scale, materials, land use, heritage, street pattern, open space etc. These Townscape Character Areas (TCA's) allow for a better understanding of impact potentially resulting from direct physical change and the influence this has on the wider character, setting or views. Effects are evaluated for each TCA based on the sensitivity of the townscape and magnitude or impact resulting from the Development.

7.24 Each TCA is assigned a sensitivity based on the character and quality of the existing townscape and its ability to accommodate change of the type proposed, classified as set out in Table 7.2. These classifications are further informed by the criteria set out in Table 7.3.

Table 7.2: Criteria for the Classification of Sensitivity of Townscape Receptors

Classification	Sensitivity of Townscape Character Area
High	Townscape of highly valued or relatively distinctive components and characteristics, sensitive to small changes.
Medium	Townscape of relatively common components and characteristics, reasonably tolerant of changes.
Low	Townscape of relatively inconsequential components and characteristics, the nature of which is potentially tolerant of substantial change.

Table 7.3: Criteria for the Classification of Sensitivity of Townscape Character Areas

Resource	Sensitivity of Townscape Resources		
	High	Medium	Low
Townscape quality / condition	High quality / good condition and largely intact	Moderate or low quality / moderate condition demonstrating some intactness	Low quality / poor condition and disparate elements
Sense of place	Strong sense of place/	Moderate sense of place /	No sense of place

Resource	Sensitivity of Townscape Resources		
	High	Medium	Low
	identity	identity	
Unspoilt character	Demonstrates unspoilt characteristics	Demonstrates a degree of change but with some unspoilt characteristics	Demonstrates high degree of change
Scarcity of resource	Particularly scarce or fragile townscape	Mainly common features, but occasional interesting features	Common features found in many cities/towns
Historic interest	Historic interest which contributes significantly to townscape character	Some historic interest which contributes to townscape character	Limited to no historic interest

Visual Amenity

7.25 The visual assessment considers the potential impacts on views for specified receptor groups during the day. Impacts during the night, in a well-lit urban environment, are expected to be broadly analogous with daytime impacts and are therefore not considered further.

7.26 Studies have been undertaken to establish potential visibility in association with the identification of a selection of representative viewpoints (listed in Table 7.4). The representative viewpoints cover a range of receptor groups, directions and distances and have been selected in reference to the ZTV. These viewpoint locations have been agreed by Manchester City Council (MCC) planning officers.

7.27 To determine the visual effects of the proposed development, 11 representative views have been identified by means of a desk study and field work. These have been agreed with MCC as part of the iterative scoping process. The viewpoints have been selected based on receptor type and sensitivity, and distance and direction from the site and as such they are intended to provide a suitable representation of the site and the proposed development for assessment purposes.

7.28 Visual receptors are assigned a category of sensitivity based on a combination of the activity and expectations of the predominant receptor type (e.g. residents, people at work, recreational visitor areas and so on) and the location, context and importance of the existing view, with reference to the viewpoints. Sensitivity of visual receptors is classified as in Table 7.4.

Table 7.4: Criteria for the Classification of Sensitivity of Visual Receptors

Classification	Sensitivity of Visual Receptors
High	Views for receptors with proprietary interest and/or prolonged viewing opportunities, or engaged in activity resulting in a high interest or appreciation of the view (e.g. residents or people engaged in outdoor recreation whose attention is focused on the townscape) and/or a high value of existing view (e.g. conservation area).
Medium	Activity resulting in a medium interest or appreciation of the view (e.g. people engaged in outdoor activity that does not focus on an appreciation of the townscape, such as walking or cycling to work) and/or a medium value of existing view (e.g. urban area with no particular historic or aesthetic value).
Low	Activity resulting in a low interest or appreciation of the view or passing or momentary interest in everyday surroundings (e.g. people at work or people in vehicles travelling through the area) and/or low value of existing view (e.g. mundane urban area).

Methodology for Determining Construction and Operational Effects

7.29 Townscape and visual impacts are assessed during the construction and operational phase separately. It is anticipated that construction will start on site in 2021 and full site completion by 2023. Due to the scale and nature of the development, there will be a need to sequence the construction of the scheme. The sequencing of construction is likely to take place in two main phases as shown on drawing 1226-01-CIV-XX-ZZ-SK-0005. Further detail is provided in Chapter 5: Proposed Development of this Environmental Statement.

7.30 The current baseline year is taken as 2020, as this is when the baseline work for the TVIA has been undertaken.

Townscape

7.31 Magnitude of townscape impact is determined through considerations of the scale of the Development and its fit within the existing townscape, classified as set out in Table 7.5.

Table 7.5: Criteria for the Classification of Magnitude of Townscape Impact

Classification	Magnitude of Townscape Impact
Major	Ranging from a limited change in townscape characteristics over an extensive area, to an intensive change over a more limited area.
Moderate	Moderate change in a localised area.
Minor	Minor change in a localised area.

Classification	Magnitude of Townscape Impact
Negligible	No discernible change to any component

Visual Amenity

7.32 Magnitude of visual impact is determined from a combination of the degree of change to the view due to the proposed development, including the extent of the area over which the changes will be visible, the period of exposure to the view and reversibility, classified in Table 7.6.

Table 7.6: Criteria for the Classification of Magnitude of Visual Impact

Classification	Magnitude of Visual Impact
Major	High degree of change to the existing view (e.g. loss of characteristic features) and/or high degree of exposure to view (e.g. close or open views).
Moderate	Medium degree of change to existing view (e.g. partial loss of characteristic features) and/or medium degree of exposure to view (e.g. middle-distance or partial views).
Minor	Low degree of change to existing view (e.g. limited loss of characteristic features) and/or low degree of exposure to view (e.g. long distance, interrupted or glimpsed views).
Negligible	No discernible change to any part of the view

Significance Criteria

7.33 Whilst there is a degree of professional judgement involved in determining the significance of townscape and visual effects, they are broadly determined by the interaction of the sensitivity of the receptor and magnitude of impact. This interaction results in categorisation of effects as shown in Table 7.7. Residual effects after mitigation are then categorised using the same system.

Table 7.7: Criteria for informing the Classification of Significance of Townscape and Visual Effects

Sensitivity of Resource / Receptor	Magnitude of Impact			
	Major	Moderate	Minor	Negligible
High	**Major**	**Major - Moderate**	Moderate - Minor	Negligible
Medium	**Major -Moderate**	Moderate - Minor	Minor	Negligible
Low	Moderate - Minor	Minor	Minor	Negligible

Assumptions/Limitations

7.34 This townscape and visual chapter has been undertaken in accordance with recognised industry guidelines. These include categorising individual visual receptors into receptor groups – for example, it is not practical to assess every point along a street, rather, all pedestrians using a particular street, for whatever purpose, are classified as a single receptor group.

7.35 Guidelines also require visual assessment to be undertaken from publicly accessible vantage points. However, it is also important to assess the likely effects on views from private properties for people living and working in an area. For the purpose of this assessment, assumptions have been made about views from nearby buildings in the wider area, where it is either not possible or not practical to gain access.

7.36 Also, in line with recognised guidelines, visual assessments rely upon photographs from a series of representative viewpoints, in this case 11 no. locations. These are not intended to illustrate every possible location from where there might be a view of the proposed development, but rather to present a selection of views from a variety of angles and distances, sufficient to inform decisions about the proposed development.

Consultation

7.37 Consultation has taken place between the design team and MCC to establish the TVIA methodology and an agreed list of viewpoints within the study area.

Table 7.8: Consultation

Consultee	Date and Time	Comments	Actions
Jenifer Atkinson, Case officer MCC	10/03/2020	TVIA methodology submitted to MCC for review. Assessment methodology was accepted without comments	None
Jenifer Atkinson, Case officer MCC	06/10/2020	Draft viewpoints were submitted to MCC for review. Proposed viewpoints were accepted without comments	None

Baseline Conditions

Visual baseline

7.38 11 viewpoints were considered through a process of desk-based review and field studies. The representative viewpoints are listed in Table 7.9 below and their locations, shown in **Appendix 7.1** provides an overview of the viewpoints in terms of their spatial relationship to the proposed development and designations they are located within. Baseline views for each of the viewpoints are illustrated on the photographic illustrations (**Appendix 7.2**).

Illustrations and field visits have been used as the basis for assessment of visual effects in the Potential Impacts section below.

Viewpoint 1

7.39 This viewpoint is located within Collyhurst Park, close to the park entrance on Harrowby Drive. This view is located 60m from the Site to the south east. This viewpoint is representative of residents on Harrowby Drive and users of Collyhurst Park. This view takes in the play area and sports court within Collyhurst Park in the foreground with properties on Johnny King Close and Anslow Close visible beyond the park. In the right-hand side of the view, properties on Hillman Close are visible beyond an area of open ground. The background of the view is composed of the upper portions of trees both within the site and on the far side of Rochdale Road.

7.40 *Receptor Types and sensitivity:* Residents and park users are considered to be high sensitivity receptors.

Viewpoint 2

7.41 This view is located 44m to the south west of the site at the entrance to Sand Hills Park This view is representative of users of Sand Hills Park as well as pedestrians and vehicle users travelling along Rochdale Road and Eggington Street. This view takes in Rochdale Road in the foreground with the south east portion of the site visible on the far side of the road. This area of the site is densely vegetated with shrubs however properties on Thornton Street North are partially visible beyond the vegetation. The Collyhurst War Memorial is visible in the right-hand portion of the view. The upper parts of Sheridan Court and Heyden Court, 13-storey residential towers in Monsall, are visible in the background of the view.

7.42 *Receptor Types and sensitivity:* Park users are considered to be high sensitivity receptors; pedestrians are considered medium sensitivity; and road users are considered low sensitivity.

Viewpoint 3

7.43 This view is representative of residents of Dalbury Drive and Ribblesdale Drive as well as pedestrians moving through this residential area. The viewpoint location is 135m to the west of the site. The urban grain of this residential area means that only partial views towards the site are affording from selected viewing locations. The view is funnelled by a property in the left-hand foreground of the view and by a staggered row of properties in the right of the view. An Oak tree is visible in the foreground. Within the portion of the view that is clear, partial views of further properties on Ribblesdale Drive are visible as well as trees both that line Rochdale Road and are within the site.

7.44 *Receptor Types and sensitivity:* Residential receptors are considered to be high sensitivity; pedestrians are considered medium sensitivity.

Viewpoint 4

7.45 This view is located on Rochdale Road, close to the terminus of Glendower Drive. The viewpoint location is approximately 31m from the north west corner of the site and is representative of residential receptors in the properties on Glendower Drive and Shiregreen Avenue as well as pedestrians and road users travelling along Rochdale Road. This view looks south east along Rochdale Road which makes up the foreground. Beyond the road, an uninterrupted line of trees prevents and long-range views. Those trees in the left-hard portion of the view are located within an area of woodland that sits directly north of the site. Centrally and in the right of the view, the tree line constitutes the site boundary.

7.46 *Receptor Types and sensitivity:* Residential receptors are considered to be high sensitivity receptors; pedestrians are considered Medium sensitivity; and road users are considered low sensitivity.

Viewpoint 5

7.47 This viewpoint, which lies 320m to the north of the site, is representative of park users at the southern entrance to Queens Park (a registered park and garden), residential receptors in the properties on Rochdale Road, cyclists using National Cycle Route 60 and pedestrians and road users moving along Rochdale Road. This view looks directly along Rochdale Road towards the site. In the left-hand foreground, beyond Rochdale Road sits Manchester Communication Academy. Centrally within the view, an electronic advertising screen is visible and beyond this, a band of dense vegetation comprising of trees on the wedge of land between the two sections of Queens Road, the area of woodland to the north of the site and trees on the site itself. The right-hand side of the view is composed of the fronts of properties on Rochdale Road and beyond these, more tree cover.

7.48 *Receptor Types and sensitivity:* Park users, residential receptors and cyclist using the national cycle route are considered to be high sensitivity receptors; pedestrians are considered medium sensitivity; and road users are considered low sensitivity.

Viewpoint 6

7.49 This view is located approximately 410m to the north east of the site at the entrance to Monsall Metrolink Station. This view is representative of residents in the properties on Monsall Street as well as Metrolink users, pedestrians and road users. This view looks directly along Monsall Street, with the distinctive yellow arch of the Metrolink entrance in the left-hand foreground and residential properties in the right-hand foreground. Looking along the street it is lined on both sides by properties of two and three stories. At the end of the road, trees are visible and with the exception of one tree directly at the end of the road, these are located within the site boundary. In the background, the upper part of 100 Greengate, a 44-storey tower in the Greengate area of Salford, located 2.9km from the viewpoint location, is visible.

7.50 *Receptor Types and sensitivity:* Residential receptors are considered to be high sensitivity receptors; pedestrians are considered medium sensitivity; and Metrolink users and road users are considered low sensitivity.

Viewpoint 7

7.51 This view is representative of residential receptors in the properties on Trimley Avenue, Sedgeford Road, Tollard Avenue and Burnett Close; cyclists using National Cycle Route 60; as well as pedestrians and road users on Queens Road. The viewpoint is located approximately 270m to the east of the site. This viewpoint is located on a raised bank, bordering Queens Road. It takes in Queens Road in the foreground with a bus stop centrally in the foreground. Two storey residential properties are visible on both sides of Queens Road in the middle distance. These properties, together with trees along Queens Road obscure longer distance views although the tops of trees are visible.

7.52 *Receptor Types and sensitivity:* Residential receptors and cyclists using National Cycle Route 60 are considered to be high sensitivity receptors; pedestrians are considered medium sensitivity; and road users are considered low sensitivity.

Viewpoint 8

7.53 This view is located approximately 520m to the south of the site and is representative of residents, of Roach Court, Vauxhall Court and Moss Brook Court, as well as pedestrians and road users on Rochdale Road. This view looks north east along Rochdale Road taking in the base of Roach Court in the left-hand foreground, set behind black railings. Black railings also bound the far side of Rochdale Road beyond which, an area of open grass with clusters of trees is visible. Looking towards the site, trees line both sides of the road and focus the view on a pedestrian crossing located just south of the junction of Collyhurst Street.

7.54 *Receptor Types and sensitivity:* Residential receptors are considered to be high sensitivity receptors; pedestrians are considered medium sensitivity; and road users are considered low sensitivity.

Viewpoint 9

7.55 This view is from Queens Park, a registered park and garden, and is located 490m to the north of the site. This view is representative of park users and is also representative of views from the Grade II listed Brierley Statue which sits within the park. This view looks south across the gently rolling landscape of the park. Groups of trees in the near distance screen longer views to both the left and right-hand sides of the view. In the central portion, the tree lined southern boundary of the park is clearly visible and beyond it, glimpsed views of properties on Park View. The tops of trees are visible in the background of the view.

7.56 *Receptor Types and sensitivity:* Park users are considered high sensitivity receptors.

Viewpoint 10

7.57 This view is representative of visitors to Manchester General Cemetery, a registered park and garden. The viewpoint is located 710m from the site. This view, located at the far end of the path that leads through the cemetery, takes in rows of headstones on both sides of the path in the foreground. Trees alongside the path

tend to screen views beyond the near distance but beneath the canopy line there are views of the ground falling towards tree lined boundary between the cemetery and Queens Park.

7.58 *Receptor Types and sensitivity*: Cemetery visitors are considered high sensitivity receptors.

Viewpoint 11

7.59 This view is located on a public footpath within Moston Vale, an area of open parkland on a former landfill site. The viewpoint is located 910m to the north east of the site and is representative of users of the footpath. This view, which is taken from an area of high ground within Moston Vale looks across an area of open grassland towards a group of trees that sit on the south western boundary of Moston Vale. The left-hand portion of the view is screened by a ribbon of vegetation extending in the foreground. Tops of trees on the far side of Monsall Road are visible in the background of the view.

7.60 *Receptor Types and sensitivity:* Footpath users are considered high sensitivity receptors.

Table 7.9: Representative viewpoints

VP No.	Location	Direction from Site	Designations	Visual Receptor Type/s & sensitivity	Global Co-ordinates	Distance to site
1	Collyhurst Park	East	None	Residents (high) Park users (high)	E: 385625 N: 400077	60m
2	Fitzgeorge Street – Sand Hills Park	South west	None	Park users (high) Pedestrians (medium) Road users (low)	E: 385444 N: 400132	44m
3	Dalbury Drive	West	None	Residents (high) Pedestrians (medium)	E: 385382 N: 400328	135m
4	Rochdale Road at Glendower Drive	North west	None	Residents (high) Pedestrians (medium) Road users (low)	E: 385539 N: 400475	31m
5	Rochdale Road at Park View	North	National Cycle Route; Registered park and garden	Residents (high) Park users (high) Cyclists (high) Pedestrians (medium) Road users (low)	E: 385619 N: 400762	320m
6	Monsall Street, Monsall Metrolink Station	North east	None	Residents (high) Pedestrians (medium) Metrolink users (low) Road users (low)	E: 386076 N: 400545	410m
7	Queens Road	East	National Cycle Route	Residents (high) Cyclists (high) Pedestrians (medium)	E: 385956 N: 400145	270m

VP No.	Location	Direction from Site	Designations	Visual Receptor Type/s & sensitivity	Global Co-ordinates	Distance to site
				Road users (low)		
8	Rochdale Road at Roach Court	South	None	Residents (high) Pedestrians (medium) Road users (low)	E: 385185 N: 399721	520m
9	Queens Park	North	Registered park and garden; Listed building	Park users (high)	E: 385347 N: 400888	490m
10	Manchester General Cemetery	North west	Registered park and garden	Cemetery visitors (high)	E: 385384 N: 401137	710m
11	Moston Vale	North	Public Footpath	Footpath users (high)	E: 386351 N: 401061	910m

Landscape, townscape and historic designations within the study area

7.61 The impact of the proposed development has been assessed on the following designations, the locations of which are shown on **Appendix 7.1 - Figures 4 & 5**.

Conservation areas

7.62 There are four conservation areas either wholly or partly within the 2km study area: Ancoats Conservation Area, Shudehill Conservation Area, Smithfield Conservation Area, and Stevenson Square Conservation Area.

7.63 Ancoats Conservation Area is situated wholly within the study area and at its closest sits 1.2km to the south of the site. The conservation area which is bounded by Great Ancoats Street, Oldham Road, Kemp Street, Wadeford Close, Jersey Street and the Rochdale Canal is made up of a dense urban grain and contains a number of large cotton mills fronting the canal.

7.64 Shudehill, Smithfield and Stevenson Square Conservation areas border one-another and cover the northern part of Manchester City Centre. All three sit partially within the 2km study area and are approximately 1.8km from the site at their closest.

7.65 The proposed development is not anticipated to be visible from any of the four Conservation Areas and their settings will remain unaffected. Therefore, they are not considered further in this report.

Long-distance footpaths

7.66 The Medlock Valley Way is the single long-distance footpath to pass through the study area. The Medlock Valley Way runs along the course of the River Medlock throughout the whole of East Manchester. The Medlock Valley Way passes 1.45km to the south east of the site at its closest

7.67 It is not anticipated that any part of the proposed development will be visible from the Medlock Valley Way and its setting will remain unaffected. Therefore, it is not considered further in this report.

National Cycle Routes

7.68 National Cycle Route (NCR) 60 follows the A6010 from the south east of the study area, passing 155m from the site at its closest and continuing through Queens Park to follow the Irk Valley before terminating 1.9km to the north of the site. Viewpoints 5 and 7, taken from Rochdale Road at Park View and Queens Road respectively are representative of views from the cycle route looking towards the site.

Listed buildings

7.69 The majority of Listed Buildings within the study area are located within the four conservation areas on the northern edge of Manchester City Centre. Elsewhere, there are scattered Listed Buildings, with only five within a kilometre of the site.

7.70 The closest is the Grade II listed Brierley Statue in Queens Park, erected in 1898, is represented by Viewpoint 9. At present, the plinth is in-situ whilst the statue of the former writer and council member is in storage awaiting restoration.

7.71 Other Listed Buildings within 1km of the site comprise 691-695 Rochdale Road which is located between Queens Park and Manchester General Cemetery; the Corpus Christi Basilica and public laundry within Miles Platting to the south east of the site; and the Bus Depot and Transport Museum in Cheetham Hill, to the west. All the above are grade II listed. These, along with those Listed Buildings beyond 1km of the site are not anticipated to be impacted by the proposed development and are not considered further in this report.

Registered Parks and Gardens

7.72 There are four Registered Parks and Gardens within the study area, namely Queens Park and Manchester General Cemetery to the north and Phillips Park and Phillips Park Cemetery to the south east.

7.73 The Grade II Listed Queens Park is located approximately 290m to the north of the site at its closest. This Victorian Park, opened in 1846, was originally designed by Joshua Major and is one of the first examples of a public park within a major industrial city. Viewpoints 5 and 9 are representative of views within Queens Park.

7.74 The Grade II Listed Manchester General Cemetery is located approximately 620m to the north of the site. The Cemetery dates from the same period as Queens Park which lies directly to the south and is an example of an

Early Victorian garden cemetery. Viewpoint 10 is representative of receptors within Manchester General Cemetery.

7.75 Phillips Park Cemetery and Phillips Park (both Grade II Listed) are located 1.5 and 1.8km to the south east of the site respectively. Phillips Park is a sister park to Queens Park, also designed by Major and opening on the same day in 1846. Phillips Park cemetery followed later, opening in 1866 and is a good example of a mid-Victorian municipal cemetery.

7.76 There are no views anticipated from Phillips Park or Phillips Park Cemetery and their settings will remain unaffected, they are therefore not considered further in this report.

Public Rights of Way

7.77 Beyond the long-distance footpaths discussed above, there are many pedestrian routes throughout the study area. All of the viewpoints are positioned on publicly accessible land and are representative of pedestrian receptors at these locations. Public footpaths are not considered further as an individual designation within this report.

National Landscape Character

7.78 Natural England are responsible for managing the key national landscape character descriptions for England, namely the National Character Areas. The site lies within The Natural England National Character Area (NCA) Profile 55: Manchester Conurbation (NE463).

Table 7.9: NCA 55's key characteristics in relation to the site

NCA Profile 55 Key Characteristics	Relevance to Site and study area
Large settlements have come together to form the conurbation, characterised by dense urban and industrial development, commercial, financial, retail and administrative centres, commuter suburbs and housing.	The site is located close to the centre of Manchester. The study area is predominated by inner-city residential areas but also takes in the northern edge of Manchester's administrative centre and various commercial and industrial areas.
The area is centred on low hills, enclosed by the Pennine hills to the north and east, and crossed by several meandering river valleys.	The surrounding topography is generally low lying but rises to the north. The River Irk and River Medlock meander through the study area.
Woodland is usually found in corridors along the slopes of the river valleys, and also on what was once brownfield land.	There is a significant amount of woodland within the study area. The sides of the Irk are well-wooded and connect into a number of parks and other green spaces. Furthermore, woodland has established on a number of brownfield sites, including the site itself.

NCA Profile 55 Key Characteristics	Relevance to Site and study area
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.	There are four resisted Parks and Gardens within the study area and several more informal green spaces. Many of the residential neighbourhoods within the study area developed during the industrial revolution and Parks such as Queens Park and Phillips Park are early examples of inner-city municipal parks, created for the benefit of the expanding urban population.
River valleys form important corridors of semi-natural habitats and natural green spaces – with open grassland, woodland and wetland – linking urban centres with open countryside. Many post-industrial sites and canals provide wildlife habitats.	The Irk valley and Medlock Valley provide natural corridors into the centre of Manchester and are connected to the wider network of green spaces. The Rochdale Canal also passes through the study areas and links green spaces in several former industrial parts of Manchester.
The area's legacy of industrial archaeology – particularly relating to the textile industry – is increasingly recognised. 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.	Ancoats, formally an important centre in the textile industry, is located within the study area and contains a number of significant former mill buildings. Former Mills are also located along the Rochdale Canal. Elsewhere, the study area is comprised of residential, commercial and industrial buildings dating from the 19th-, 20th- and 21st-centuries
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.	Victoria train station is located within the far south west and is connected to the many rail and tram lines that cross the study area. Monsall Metrolink station which is on the Oldham and Rochdale line is the closest to the site. The Rochdale Canal also passes through the study area.

7.79 On balance, the heavily built-up nature of the Manchester Conurbation NCA weighed against its network of natural features and industrial archaeology results in a moderate capacity for change and it is therefore considered to have a medium landscape sensitivity.

Local Landscape Character

Greater Manchester Urban Historic Landscape Character Assessment

7.80 The Greater Manchester Urban Historic Landscape Characterisation Project (GMUHLC) was carried out between July 2007 and March 2012 by the Greater Manchester Archaeological Unit. Separate reports were produced for each of the boroughs of Greater Manchester as part of a national programme supported and developed by English Heritage but carried out by local government, chiefly county council historic environment services.

7.81 The GMUHLC parcels areas of land into broad categories based on their historic land use. The full list of typologies and their distribution within the study area are shown in **Appendix 7.1: Figure 6**. According to the report, the land that makes up the site is distributed across 3 land use types. Namely Residential (Social housing), Ornamental, parkland and recreational (urban green space) and Institutional (Nursing Home/Alms House/Hostel).

7.82 Since this report was published, there have been changes to the land use within the site area and it no longer serves as an accurate reflection of land use. The area of residential land use has been reduced by the demolition of properties on Overbrook Avenue, Needwood Close and Churnet Street, whilst the demolition of the former Whitegates Nursing Home on Paget Street means that there is no longer Institutional land within the site boundary. The area of urban green space has expanded to encompass the land that has been cleared although the area of land that is designated as ornamental, parkland and recreational (urban green space in the report has become an area of woodland (regenerated scrub/woodland) in the intervening period.

7.83 The Historic landscape character types as recorded within the GMUHLCA as well as the present character types within the site are set out in table 7.10 below.

Table 7.10: GMUHLCA character areas and current landscape character in relation to the site

Broad Type	Sub Type	Sensitivity
Greater Manchester Urban Historic Landscape Character Assessment (2009)		
Residential	Social Housing – Thornton Street North, Johnny King Close, Anslow Close, Churnet Street, Overbrook Avenue, Needwood Close	Low
Ornamental, parkland & recreational	Urban green space – Area south of Paget Street	Low
Institutional	Nursing Home/Alms House/Hostel Whitegates Nursing Home, Paget Street	Low
Current Landscape Character (2020)		
Residential	Social Housing – Thornton Street North, Johnny King Close, Anslow Close	Low
Ornamental, parkland &	Urban green space –	Low

Broad Type	Sub Type	Sensitivity
recreational	Area north of Churnet Street, area formerly Overbrook Avenue, area formerly Needwood Close, area of former nursing home north of Paget Street	
Woodland	Regenerated scrub/woodland Area south of Paget Street	Low

Northern Gateway SRF

7.84 The Northern Gateway SRF identifies three existing distinct neighbourhoods within the area covered by the framework – Lower Irk Valley, New Cross and Collyhurst. The site sits wholly within Collyhurst.

7.85 The SRF refers to the townscape within the northern part of Collyhurst in which the site sits stating:

> *"Although historically the northern parts of Collyhurst comprised a dense neighbourhood made up of terraced housing, they are now characterised by low-density development comprising houses, low-rise flats and bungalows. Large areas of cleared land also reinforce the loose suburban grain. There is a predominance of walkways and cul-de-sacs (as part of the Radburn Layout) which limits internal connectivity. Distant setbacks from Rochdale Road give a sense of isolation along this arterial road."*

7.86 The Northern Gateway SRF identifies Collyhurst as an area of low value residential townscape character, with a low susceptibility to change.

The site

7.87 The site is currently partly vacant land comprising areas of hardstanding, amenity grassland and rough woodland as well as properties and a convenience store. Photographs taken from around the site are shown within **Appendix 7.3**.

7.88 The built form within the site area comprises a series of two storey social housing terraces on Thornton Street North, Johnny King Close and Anslow Close, as well as a single storey sub-station. The housing which dates from the 1960s is of a style that is generally prevalent in the local area, in red brick with boundaries of low walls and hoop-top railings. Areas of the site comprising built form are considered to be of low townscape value

7.89 The remainder of the site comprises land which stands vacant as a result of a series of clearances. This land is largely unmanaged and fenced off. There are a number of trees within this part of the site, predominantly along Rochdale Road and to the south of Paget Street. This land is considered to be of low townscape value.

Embedded Mitigation

Demolition and Construction

No embedded mitigation measures are proposed during the demolition and construction phase.

Completed Development

- Creation of New Collyhurst Park as part of the proposed development. The park, which is proposed to contain areas of woodland and wetland planting will provide a visual buffer to the built form from the east and will reinforce the network of local public green spaces;
- High quality architectural design with a coherent family of house types creating a well-considered and legible urban block;
- Restricted heights to proposed buildings with apartment blocks set at a maximum of 23.1m above AOD to restrict long-distance views of the proposed development.
- Improved street frontage to Rochdale Road. A new, tree-lined, residential street is proposed to Rochdale Road with a new public space at the south western corner of the site, adjacent to Collyhurst War Memorial; and
- Creation of a network of new and enhanced routes with pedestrian and cycle priority leading through the site and connecting to the wider network of routes and spaces.

Potential Impacts

Demolition and Construction

7.90 Demolition of the existing buildings and construction of the new buildings are likely to result in a number of impacts on townscape character and visual receptors, due to changes to the existing townscape resources and/or views, including impacts of temporary features such as construction plant and construction activity.

7.91 The impacts on visual amenity as a result of demolition and construction have been assessed on the four receptor groups that are prevalent within close proximity to the site, namely residents (high sensitivity), park users (high sensitivity), pedestrians (medium sensitivity) and road users (low sensitivity). Predicted impacts on visual amenity during demolition and construction comprise:

- Increased visibility as a result of tree removal. The loss of trees is anticipated to result in minor magnitude of change to residential, park user, pedestrian and road user receptors within close proximity to the site. A **moderate-minor adverse** effect is anticipated for residents and park users and a **minor adverse** effect for pedestrians and road users. This is considered **not significant**;

- Presence of construction traffic, plant and equipment. Due to the transient nature of this visual effect, a minor magnitude of change is anticipated to residential, pedestrian and road user receptors within close proximity to the site. A **moderate-minor adverse** effect is anticipated for residents and park users and a **minor adverse** effect for pedestrians and road users. This is considered **not significant**;
- Introduction/removal of built fabric. Based on the proposed phasing, the demolition of the existing buildings on site and the introduction of built form associated with the proposals is anticipated to result in a moderate magnitude of visual change to residents, park users, pedestrians and road users. This will result in a **major-moderate neutral** effect for residents and park users, a **moderate-minor neutral** effect for pedestrians and a **minor neutral** effect for road users. This is considered **significant** for resident and park user receptors; and
- Site safety/security lighting. Lighting associated with the construction site is anticipated to result in a minor magnitude of visual change during hours of darkness. A **moderate-minor neutral** effect is anticipated for residents and park users and a **minor neutral** effect for pedestrians and road users. This is considered **not significant**;

7.92 Demolition and construction will result in temporary impacts on the local townscape through:

- Loss of existing townscape features. Existing townscape features are considered to be low sensitivity. Demolition and construction will result in a moderate magnitude of change and a **minor neutral** effect, which is considered **not significant**;
- Loss of existing trees. Existing trees are considered to be medium sensitivity receptors. Their loss during the construction process will result in a moderate magnitude of change and a **moderate-minor adverse** effect is anticipated. This is considered **not significant**;
- Reduction in townscape quality due to the presence of construction traffic, plant and equipment. The existing townscape is considered to have a low sensitivity. The impact of construction traffic, plant and equipment is anticipated to result in minor magnitude of change. A **minor adverse, not significant** effect is anticipated; and
- The presence of temporary site cabins, fencing and illumination. Temporary site buildings, fencing and illumination are anticipated to result in a moderate magnitude of change to the existing townscape. A **moderate-minor neutral** effect is anticipated which is considered **not significant.**

Completed Development

Visual Assessment

Viewpoint 1 – Collyhurst Park

7.93 *Predicted View (at completion):* it is anticipated that New Collyhurst Park will be clearly visible beyond the boundary of Collyhurst Park. The properties that are visible on Johnny King Close and Anslow Close are proposed

to be demolished as part of the proposals and the mounded landform topped with woodland planting that forms the eastern boundary of the new park will be prominent within the view. Beyond the new park, it is anticipated glimpsed views of town houses and the upper portions of the Apartment Block A will be possible.

7.94 *Magnitude of Visual Change:* It is anticipated that the proposed development will result in a moderate beneficial change to the view as although the foreground will remain unaffected, the development will result in a complete alteration to the middle distance.

7.95 *Significance of Visual Effect:* A **major-moderate beneficial** effect is anticipated for both receptor types from this viewpoint location. This is considered **significant**.

Viewpoint 2 – Eggington Street – Sand Hills Park

7.96 *Predicted View (at completion):* It is anticipated that the proposed development will be clearly visible in this view with Apartment Block A located in the foreground, directly across Rochdale Road. The existing vegetation within the site will be removed and a new streetscape will be implemented that includes street tree planting. Along Shellard Road, new town houses will be visible fronting an area of public realm. The proposed development will screen long distance views of Sheridan and Heyden Court.

7.97 *Magnitude of Visual Change:* A major magnitude of change is anticipated from this viewpoint location. The quality of the architecture and public realm will create an attractive street frontage to Rochdale Road and form a gateway to the development. For these reasons, the change in the view is considered beneficial.

7.98 *Significance of Visual Effect:* A **major beneficial** effect is anticipated for park users, a **major-moderate beneficial** effect for pedestrians and a **moderate-minor beneficial** effect for road users. This constitutes a **significant** effect for park users and pedestrians.

Viewpoint 3 – Collyhurst Road at Dalbury Drive

7.99 *Predicted View (at completion):* It is anticipated that glimpsed views of the proposed development will be afforded in the background of the view. The upper portion of Apartment Block A will be visible above the existing trees and properties in the middle-distance. The visibility of the proposed development will increase during the winter when there is reduced screening from trees.

7.100 *Magnitude of Visual Change:* It is anticipated that there will be a minor change in the view as a result of the proposed development as some glimpsed views may be afforded. The change is considered to be neutral.

7.101 *Significance of Visual Effect:* A **moderate-minor neutral** effect is anticipated for residents and a **minor neutral** effect for pedestrians. This is considered to be **not significant**.

Viewpoint 4 – Rochdale Road at Glendower Drive

7.102 *Predicted View (at completion):* Views of the proposed development will be afforded form this viewpoint location, looking south east along Rochdale Road. The line of existing trees that form the site boundary to Rochdale Road will be removed and the new steetscape will be visible with town houses and apartment blocks fronted by a row of trees in a green verge.

7.103 *Magnitude of Visual Change:* A moderate degree of visual change is predicted from this viewing location at completion. The change is considered to be neutral as although there will be a loss of mature tree cover in the short term, the proposals will create an attractive tree lined residential street.

7.104 *Significance of Visual Effect:* A **major-moderate neutral** visual effect is predicted for residential receptors from this viewing location at completion, with a **moderate-minor neutral** effect for pedestrians and a **minor neutral** effect for road users. for residents, the visual effect from this viewpoint is considered **significant**.

Viewpoint 5 – Rochdale Road at Park View

7.105 *Predicted View (at compl*etion): It is anticipated that there will be some glimpsed views of the proposed development from this location, in the background of the view looking along Rochdale Road. The proposed development will be most visible during the winter months once leaves have fallen from the trees.

7.106 *Magnitude of Visual Change:* A minor change is anticipated to the view, on account of the development, as it will be partially visible in the background. This change is considered to be neutral.

7.107 *Significance of Visual Effect:* A **moderate-minor neutral** effect is anticipated for residents, park users and cyclists, and a **minor neutral** effect for pedestrians and road users. This is considered **not significant**.

Viewpoint 6 – Monsall Street, Monsall Metrolink Station

7.108 *Predicted View (at completion):* It is anticipated that there will be some glimpsed views of New Collyhurst Park afforded at the end of Monsall Street in the background of the view

7.109 *Magnitude of Visual Change:* A minor visual change is anticipated, with partial views afforded in the background of the view. As the new park is anticipated to be the only visible element of the proposed development, the change is considered to be beneficial.

7.110 *Significance of Visual Effect:* A **moderate-minor beneficial** visual effect is predicted for residents and a **minor beneficial** for pedestrians, Metrolink users and road users. This is considered **not significant.**

Viewpoint 7 – Queens Road

7.111 *Predicted View (at completion):* The proposed development is not anticipated to be visible from this viewpoint location due to intervening vegetation and buildings.

7.112 *Magnitude of Visual Change:* the magnitude of change is considered to be negligible as there will be no discernible change in the view as a result of the development.

7.113 *Significance of Visual Effect:* A **negligible** visual effect is anticipated for all receptor types.

Viewpoint 8 – Rochdale Road at Roach Court

7.114 *Predicted View (at completion):* It is anticipated that glimpsed views of the top part of Apartment Block A will be visible from this viewpoint location in the background of the view. It is anticipated that there will be greater visibility of the proposed development from the upper floors of Roach Court, Vauxhall Court and Moss Brook Court.

7.115 *Magnitude of Visual Change:* The magnitude of change is predicted to be minor from this viewpoint and is anticipated to be neutral.

7.116 *Significance of Visual Effect:* A **moderate-minor neutral** visual effect is predicted for residential receptors, and a **minor neutral** effect for pedestrians and road users. This is considered **not significant.**

Viewpoint 9 – Queens Park

7.117 *Predicted View (at completion):* The view from this location is not anticipated to change as a result of the proposed development as it will be screened by intervening tree cover.

7.118 *Magnitude of Visual Change:* a negligible change in the view is anticipated from this viewpoint.

7.119 *Significance of Visual Effect:* A **negligible** visual effect is anticipated for park users from this viewpoint location. This is considered **not significant.**

Viewpoint 10 – Manchester General Cemetery

7.120 *Predicted View (at completion):* Due to the tree cover in the foreground and middle distance preventing long range views towards the site, there is not anticipated to be any change in the view as a result of the proposed development.

7.121 *Magnitude of Visual Change:* The magnitude of visual change is considered to be negligible from this viewpoint as there will be no discernible change in the view.

7.122 Significance of Visual Effect: The visual effect is anticipated to be **negligible** and **not significant** for cemetery visitors.

Viewpoint 11 – Moston Vale

7.123 *Predicted View (at completion):* The view from this location is not anticipated to change as a result of the proposed development as it will be screened by intervening tree cover.

7.124 *Magnitude of Visual Change:* a **negligible** change in the view is anticipated from this viewpoint.

7.125 *Significance of Visual Effect:* A **negligible** visual effect is anticipated for footpath users from this viewpoint location. This is considered **not significant.**

Townscape Assessment

7.126 The following section sets out the analysis and assessment of anticipated effects to townscape designations and character as a result of the proposed development.

Landscape, Townscape and Historic Designations

7.127 Of those designations that have been identified in the baseline, some have been scoped out of the assessment based on desk-study and field study demonstrating that there will be no visual or townscape impact to the designated elements or their settings as a result of the development. Those designations that are not considered in this section comprise: Ancoats, Shudehill, Smithfield and Stevenson Square Conservation Areas; The Medlock Valley Way Long Distance Footpath; NCR 66; All listed buildings within the study area with the exception of the Briley Statue within Queens Park; and Phillips Park and Phillips Park Cemetery Registered Parks and Gardens.

National Cycle Routes

7.128 NCR 60 passes through the study area, at its closest point it is 80m from the site boundary. The cycle route follows Queens Road as it passes to the north of the site before turning north onto Rochdale Road. Viewpoints 5 and 7 are representative of NCR 60 on Rochdale Road and on Queens Road.

7.129 It is anticipated that views will be afforded of the proposed development and particularly New Collyhurst Park, which will be visible to cyclists as they travel along Queens Road. The high quality of the design of the architecture and public realm will result in an improvement to the wider setting of the cycle route as at passes the site.

7.130 *Magnitude of Change:* A minor magnitude of change is anticipated on NCR 60 as the wider setting will be affected for a small section of the route. It is anticipated that this change will be beneficial.

7.131 *Receptor sensitivity:* The route passes through residential areas of medium to low value in townscape terms as well as Queens Park which is considered high value. Overall, this section of National Cycle Route 60 is considered to have a medium sensitivity in townscape terms.

7.132 *Significance of townscape effect:* A **minor beneficial** impact is anticipated to NCR 60; this is considered **not significant**.

Listed Buildings

7.133 Of the Listed Buildings within the study area, only the Grade II Brierley Statue in Queens Park has been considered in this section of the report. The statue, which only has the plinth remaining in-situ is located 460m

from the site at its closest. Viewpoint 9, taken from within Queens park is representative of the view from the statue.

7.134 It is anticipated that there will be no visibility of the site from the statue and the proposed development will not affect the setting of this Listed Building.

7.135 *Magnitude of Change:* A negligible magnitude of change is anticipated.

7.136 *Receptor sensitivity:* As a Listed building, the Brierley statue is considered to be high sensitivity receptor.

7.137 *Significance of townscape effect (year 15 post construction):* **A negligible** effect is anticipated, and this is considered to be **not significant**.

Registered Parks and Gardens

7.138 Queens Park and Manchester General Cemetery are the two Registered Parks and Gardens that have been assessed.

7.139 Queens park, an important example of an Early Victorian municipal park, is located 290m from the site boundary at its closest. The park is characterised by groups of mature trees set in areas of lawn and contains a children's play area and a museum and art gallery. Viewpoint 5 is representative of the southern entrance to Queens Park and viewpoint 9 is located from within the park itself.

7.140 It is anticipated that there will be some glimpsed views of the proposed development from the southern area of the park however the immediate setting will remain unaffected. It is considered that the creation of New Collyhurst Park as part of the development will serve to complement Queens Park by adding to the network of green spaces in the area and reinforcing Queens Park's role as an historically important public park set within an inner city residential area.

7.141 *Magnitude of Change:* A minor change is anticipated to the townscape setting of Queens Park as the creation of New Collyhurst Park will reinforce its wider setting by improving green links. This change is considered to be beneficial.

7.142 *Receptor sensitivity:* As a registered park and garden of historical importance, Queens Park is considered to be a high sensitivity receptor in townscape terms.

7.143 *Significance of townscape effe*ct: A **moderate-minor beneficial** impact is anticipated to Queens Park, this is considered **not significant**.

7.144 Manchester General Cemetery is an example of early Victorian garden cemetery and is located directly to the north of Queens Park, approximately 620m from the site boundary at its closest. Viewpoint 10 is representative of receptors within Manchester General Cemetery.

7.145 There are not anticipated to be any views of the proposed development from within the cemetery and its immediate setting is not expected to be affected. The development proposals include the creation of a new public park but the intervening distance and difference in type of green space means that the proposals are not expected to have a discernible effect on the wider setting of the cemetery.

7.146 *Magnitude of Change:* A negligible magnitude of change is anticipated to Manchester General Cemetery.

7.147 *Receptor sensitivity:* As a registered park and garden of some historical importance, Manchester General Cemetery is considered to be a high sensitivity receptor in townscape terms.

7.148 *Significance of townscape effect*: A **negligible** effect is anticipated, and this is not considered to be significant.

Landscape/Townscape Character

Natural England National Character Areas

7.149 As noted above, the site lies within Natural England NCA 55: Manchester Conurbation (NE463). This character area is defined dense urban and industrial development, commercial, financial, retail and administrative centres, commuter suburbs and housing, interspersed with a network of green infrastructure. The conurbation is centred on low hills, crossed by several river valleys that thread through the urban fabric.

7.150 *Predicted magnitude of landscape change:* It is predicted that the nature and location of the Development will result in a negligible change to the key landscape characteristics of the Manchester Conurbation Character Area.

7.151 *Receptor type(s) and sensitivity:* Manchester Conurbation NCA is considered to have a Medium landscape sensitivity.

7.152 *Significance of landscape effect (year 15 post construction):* a **negligible** effect is anticipated to landscape character at a national level.

Greater Manchester Urban Historic Landscape Characterisation

7.153 The proposed development will result in a change in the landscape character both as designated in the GMUHLC Assessment and in terms of the current landscape character of the site. In terms of the broad categories, residential and ornamental, parkland and recreational landscape character will prevail on the site. There will be no institutional landscape character within the proposed development, but this is non-existent in the current site in any case.

7.154 The sub-categories within the residential and ornamental, parkland and recreational landscape character typologies are anticipated to change as a result of the proposed development.

7.155 The proposals will result in a mix of social and private housing with house types comprising of town houses and low-rise flats. The density of housing will increase as a result of the development. The anticipated changes to the

residential landscape character areas within the site are anticipated to be **moderate**. The proposed changes are considered **beneficial** as a result of the quality of architecture and improved structure in urban grain.

7.156 Within the ornamental, parkland and recreational landscape character type the sub-category will change from urban green space to public park. The area of this category will increase in comparison to the area included within the GMUHLC Assessment but will reduce compared to the current situation. The magnitude of change to this character type is considered **major**. The change from urban green space, much of which is inaccessible waste ground to a new public park is considered a **beneficial** change.

7.157 *Sensitivity*: The landscape character types that are designated within the GMUHLCA are considered to be low value in townscape character terms. The landscape character types that currently make up the site are similarly considered to be low value in townscape terms.

7.158 *Significance of landscape effect (year 15 post construction)*: It is considered that overall there will be a **moderate-minor beneficial** effect to the townscape character at a local level as a result of the proposed development. This is considered **not significant**.

Mitigation Measures

Demolition and Construction

7.159 Due to the proximity of Queens Park, Collyhurst Park and Sand Hills Park as well as areas of retained residential properties, site care should be taken during the construction period to minimise the impact of the development to these assets. Best practice measures will be implemented through a Construction Environmental Management Plan (CEMP) which will be prepared for the site and secured by a planning condition. The CEMP will set out measures to minimise the adverse effects of construction. Relating to townscape and visual matters this could cover site hoardings, construction lighting, construction traffic routes.

Completed Development

7.160 It is considered that the embedded mitigation included within the proposed development is sufficient to reduce and remove any potentially adverse effects. For this reason, the requirement for supplementary mitigation is limited.

7.161 A Landscape Management Plan (LMP) should be approved by MCC covering the ongoing maintenance of all hard and soft landscape elements within the proposed development. The LMP will ensure that the embedded mitigation in the form of the new park, improved streets and public spaces will continue to perform as appropriate mitigation for the proposed development.

Residual Impacts

Visual Assessment

Viewpoint 1 – Collyhurst Park

7.162 *Predicted View:* The proposed tree planting within New Collyhurst Park will have matured providing further screening to the built form that sits beyond although glimpsed views are still anticipated.

7.163 *Significance of Visual Effect:* It is anticipated that the proposed development will result in a moderate beneficial change to the view. A **major-moderate beneficial** effect is anticipated for both receptor types from this viewpoint location. This is considered **significant**.

Viewpoint 2 – Eggington Street – Sand Hills Park

7.164 *Predicted View:* At year 15 post construction it is anticipated that the proposed landscape to the south west corner of the site will have matured, however the proposed built form will continue to dominate the view from this location. The Northern Gateway SRF indicates that the public realm visible in the foreground of this view will form part of a new Neighbourhood Square around the war memorial.

7.165 *Significance of Visual Effect:* A major beneficial magnitude of change is anticipated from this viewpoint location. Resulting in a **major beneficial** effect for park users, a **major-moderate beneficial** effect for pedestrians and a **moderate-minor beneficial** effect for road users. This constitutes a **significant** effect for park users and pedestrians.

Viewpoint 3 – Collyhurst Road at Dalbury Drive

7.166 *Predicted View:* The proposed tree planting along Rochdale Road will have matured to further screen the built form although glimpsed views are still anticipated, especially in winter.

7.167 *Significance of Visual Effect:* It is anticipated that there will be a minor neutral change in the view as a result of the proposed development. A **moderate-minor neutral** effect is anticipated for residents and a **minor neutral** effect for pedestrians. This is considered to be **not significant**.

Viewpoint 4 – Rochdale Road at Glendower Drive

7.168 *Predicted View:* The proposed tree planting along Rochdale Road will have matured, screening the built form and creating a continuous green edge to Rochdale road, similar to the existing view. Glimpsed views of the upper portions of the proposed buildings are still anticipated, especially during winter.

7.169 Significance of Visual Effect: A moderate neutral degree of visual change is predicted from this viewing location at completion. A **major-moderate neutral** visual effect is predicted for residential receptors from this viewing

location, a **moderate-minor neutral** effect for pedestrians and a **minor neutral** effect for road users. This is considered to be **significant** for residents.

Viewpoint 5 – Rochdale Road at Park View

7.170 *Predicted View:* The proposed tree planting along Rochdale Road will have matured, further screening the built form, although some glimpsed views are still anticipated, particularly in winter.

7.171 *Significance of Visual Effect:* A minor neutral change is anticipated to the view, on account of the development, resulting in a **moderate-minor neutral** effect for residents, park users and cyclists, and a **minor neutral** effect for pedestrians and road users. This is considered **not significant**.

Viewpoint 6 – Monsall Street, Monsall Metrolink Station

7.172 *Predicted View:* As the trees within New Collyhurst Park mature, they are predicted to be visible above the buildings along Monsall Street providing a consistent tree line in the background of the view.

7.173 *Significance of Visual Effect:* A minor beneficial visual change is anticipated, with partial views afforded in the background of the view. This is predicted to result in a **moderate-minor beneficial** visual effect is for residents and a **minor beneficial** for pedestrians, Metrolink users and road users. This is considered **not significant.**

Viewpoint 7 – Queens Road

7.174 *Predicted View:* There are anticipated to be some glimpsed views of the tops of trees within New Collyhurst Park in the background of the view, however these not anticipated to be distinguishable from the existing trees in the background and there will be no discernible change in the view.

7.175 *Significance of Visual Effect:* the magnitude of change is considered to be negligible as there will be no discernible change in the view as a result of the development. A **negligible** visual effect is anticipated for all receptor types.

Viewpoint 8 – Rochdale Road at Roach Court

7.176 *Predicted View:* Tree planting in the south west corner of the site will have matured, potentially screening the built form, however, some visibility of the upper part of Apartment Block A is still predicted, particularly in winter.

7.177 *Significance of Visual Effect:* A minor neutral magnitude of change from this viewpoint is anticipated. A **moderate-minor neutral** visual effect is predicted for residential receptors, and a **minor neutral** effect for pedestrians and road users. This is considered **not significant.**

Viewpoint 9 – Queens Park

7.178 *Predicted View:* As at completion, the view is not anticipated to change on account of the proposed development.

7.179 *Significance of Visual Effect:* a negligible change in the view is anticipated from this viewpoint, resulting in a **negligible** visual effect for park users from this viewpoint location.

Viewpoint 10 – Manchester General Cemetery

7.180 *Predicted View:* As at completion, the view is not expected to change as a result of the proposed development.

7.181 Significance of Visual Effect: The magnitude of visual change is considered to be negligible from this viewpoint resulting in an anticipated **negligible** and **not significant** effect for cemetery visitors.

Viewpoint 11 – Moston Vale

7.182 *Predicted View:* As at completion, the view is not anticipated to change on account of the proposed development.

7.183 *Significance of Visual Effect:* A **negligible** visual effect is anticipated for footpath users from this viewpoint location. This is considered **not significant.**

Townscape Assessment

7.184 Taking into account the extent of embedded mitigation included within the proposed development, it is not anticipated that additional mitigation will result in a material change to those effects set out within the Potential Impacts section. The residual effects to the townscape are therefore as described above.

Table 7.11: Residual Significant Effects Summary

Description of Effect	Potential impact including significance	Mitigation	Residual Effect including significance
Construction and Demolition - Visual Effects			
Increased visibility as a result of tree removal	Moderate-minor adverse/ Minor adverse – not significant	none	Moderate-minor adverse/ Minor adverse – not significant
Presence of construction traffic, plant and equipment	Moderate-minor adverse/ Minor adverse – not significant	CEMP best practice	Moderate-minor adverse/ Minor adverse – not significant
Introduction/removal of built fabric	Major-moderate neutral/ Moderate-minor neutral/ Minor neutral – significant	CEMP best practice	Major-moderate neutral/moderate-minor neutral/minor neutral – significant
Site safety/security lighting	Moderate-minor adverse/ Minor adverse – not significant	CEMP best practice	Moderate-minor adverse/ Minor adverse – not significant
Construction and Demolition - Townscape Effects			
Loss of existing townscape features	Minor neutral – not significant	none	Minor neutral – not significant

Description of Effect	Potential impact including significance	Mitigation	Residual Effect including significance
Loss of existing trees	Moderate-minor adverse – not significant	none	Moderate-minor adverse – not significant
Reduction in townscape quality due to the presence of construction traffic, plant and equipment	Minor neutral – not significant	CEMP best practice	Minor neutral – not significant
The presence of temporary site cabins, fencing and illumination	Moderate-minor neutral – not significant	CEMP best practice	Moderate-minor neutral – not significant
Completed Development - Visual Effects			
Viewpoint 1 Collyhurst Park	Major-moderate beneficial - significant	LMP	Major-moderate beneficial - significant
Viewpoint 2 Fitzgeorge Street – Sand Hills Park	Major beneficial/ Major-moderate beneficial/ Moderate minor beneficial - significant	LMP	Major beneficial/ Major-moderate beneficial/ Moderate minor beneficial - significant
Dalbury Drive	Moderate-minor neutral/ Minor neutral	LMP	Moderate-minor neutral/ Minor neutral
Rochdale Road at Glendower Drive	Major-moderate neutral/ Moderate-minor neutral/ Minor neutral – significant	LMP	Major-moderate neutral/ Moderate-minor neutral/ Minor neutral – significant
Rochdale Road at Park View	Moderate-minor neutral/ Minor neutral	LMP	Moderate-minor neutral/ Minor neutral
Monsall Street, Monsall Metrolink Station	Moderate-minor beneficial/ Minor beneficial	LMP	Moderate-minor beneficial/ Minor beneficial
Queens Road	Negligible – not significant	None	Negligible – not significant
Rochdale Road at Roach Court	Moderate-minor neutral/ Minor neutral	LMP	Moderate-minor neutral/ Minor neutral
Queens Park	Negligible – not significant	None	Negligible – not significant

Description of Effect	Potential impact including significance	Mitigation	Residual Effect including significance
Manchester General Cemetery	Negligible – not significant	None	Negligible – not significant
Moston Vale	Negligible – not significant	None	Negligible – not significant
Completed Development - Townscape Effects			
NCR 60	Minor beneficial – not significant	LMP	Minor beneficial – not significant
Brierley Statue (Grade II Listed building)	Negligible – not significant	None	Negligible – not significant
Queens Park (Grade II Listed Registered Park and Garden)	Moderate-minor beneficial – not significant	LMP	Moderate-minor beneficial – not significant
Manchester General Cemetery	Negligible – not significant	None	Negligible – not significant
NCA 55 – Manchester Conurbation	Negligible – not significant	None	Negligible – not significant
GMUHLCA – Local Character areas	Moderate-minor beneficial – not significant	LMP	Moderate-minor beneficial – not significant

Conclusions

Demolition and Construction

7.185 Of those potential townscape and visual impacts that have been identified during demolition and construction, only the visual impact of the introduction/removal of built fabric is considered to be significant. This impact is anticipated to have a moderate magnitude of change to receptors who are close to the site which includes both residential and park user receptors. These groups are considered to have a high sensitivity and a **major-moderate neutral (significant)** effect is predicted.

Visual amenity

7.186 With reference to the ZTV and as identified in the visual assessment, views of the proposed development are limited to the immediate vicinity of the site. Generally, full or partial visibility is anticipated within a 250m radius of the site. Beyond this, visibility tends to be restricted to glimpsed views along transport corridors running in the

direction of the site. Where the visual impact of the proposed development is predicted to be **significant** (Viewpoints 1,2 & 4) the change is considered to be **beneficial** or **neutral** in nature.

Landscape, Townscape and Historic designations

7.187 **Appendix 7.1 – Figures 4 and 5** shows the location of landscape, historic and planning designations and notable movement corridors in relation to the site. The townscape designations from which the effect of the proposed development was considered comprise NCRs, Listed Buildings and Registered Parks and Gardens.

7.188 Significant effects are not anticipated to any of the assessed designations. Where an impact is anticipated, a **minor beneficial** impact is predicted to a small section of NCR 60 and a **moderate-minor beneficial** impact is anticipated to Queens Park.

Townscape character

7.189 Any changes as a result of the Development to the landscape/townscape character area at a national and local level have been evaluated. This assessment finds that at a national level the effect of the Development on landscape character will be **negligible**.

7.190 At a local level, the Development is considered to result in a **moderate** magnitude of change on the townscape character. The prevalent townscape character is considered to be low value and a **moderate-minor (not significant)** impact is therefore anticipated to townscape character at a local level. This impact is considered to be **beneficial**.

Assessment of In-Combination Effects

7.191 The proposed development forms part of the wider Northern Gateway SRF. As such, the 'development project' is described as Collyhurst Village and the wider Northern Gateway SRF development site for the purposes of the TVIA. The TVIA has therefore considered the in-combination effects of the development of the wider SRF. However, as no application for the wider SRF development site has yet been made there is limited information available for a detailed assessment to be undertaken. As such, the TVIA used assumptions made in the SRF document for Northern Gateway regarding possible quantum of development and land use locations to inform assessment parameters.

Approach

7.192 Given the scale of development, and the relativity small contribution that Collyhurst Village plays within the wider Framework area, a limited brief commentary is provided below, that seeks to summarise potential in-combination effects.

7.193 The SRF-wide Design and Development principles (section 5 of the Northern Gateway SRF) provide a general overview of the whole framework area, and information with regards to urban form and scale, land use, movement and public realm, and these plans were used as the basis of the assessment.

7.194 In accordance with the overall report, the potential effects at construction and operational stages have been considered. As details with regards to construction works, mitigation and phasing are currently unavailable, it has been assumed at this stage that standard practices will be employed and that the development of the Framework will be carried in a series of phases based over a 15 - 20 year build out. Due to lack of further information, the overall effect assumes simultaneous built out to represent a potential 'worse-case' scenario for the assessment.

7.195 It is noted that the viewpoints assessed as part of this report do not fully cover the entire area of the SRF, and as such can only be a limited evaluation of visual impacts.

Demolition and construction

7.196 The in-combination effect is likely to result in an increase in the temporary effects predicted as a result of construction.

7.197 Demolition and construction will result in temporary impacts on the local townscape through:

- Loss of existing townscape features;
- Reduction in townscape quality due to the presence of construction traffic, plant and equipment; and
- The presence of temporary site cabins, fencing and illumination.

7.198 Predicted impacts on visual amenity during demolition and construction include:

- Presence of construction traffic, plant and equipment;
- Introduction/removal of built fabric; and
- Site safety/security lighting.

Completed Scheme

Visual Amenity

7.199 Views within the area covered by the SRF are anticipated to experience major changes as a result of the SRF. In some areas, particularly close to the city centre, tall buildings are proposed and these are likely to be visible from a wide area. Visual receptors range in sensitivity, from residential receptors and users of parks and public open spaces who are considered high sensitivity to road users and workers who are considered low sensitivity (see **table 7.4**). For high and medium sensitivity receptors, the effect is anticipated to be **significant**.

7.200 It is assumed that the completed development will accord with the principles and aspirations of the SRF and as such help to deliver positive and sustainable change across the area. As such effects are likely to **beneficial** in nature.

Townscape

7.201 Development of the SRF is predicted to result in changes to designated townscape, landscape and historic elements. It is anticipated that there will be direct/ indirect impacts to the settings of conservation areas, listed buildings and other designated elements within the area as a result of development. The principles and aspirations of the SRF look to preserve and celebrate heritage assets and integrate the old and new. Designated townscape elements are generally considered to be high sensitivity receptors. A **major-moderate beneficial** effect is anticipated, which would be considered **significant**.

7.202 The SRF will provide a new comprehensive movement network across the area that promotes green travel through new pedestrian and cycle routes, a central transport interchange, as well new roads and parking areas. This network of routes will connect new green spaces and public realm areas that are well designed, safe, managed and activated by adjacent buildings. It is anticipated that the completed development will result in a **major beneficial** effect to routes and publicly accessible spaces. This is considered **significant**.

7.203 The delivery of the 7 new neighbourhoods across the Framework area will comprehensively change townscape character across the Northern Gateway, introducing distinctive, new residential communities focused around a series of public parks. The SRF will introduce new built form across the area – with building heights that allow the city centre to expand, but that also allow for a range of new residential areas to be created, with well-defined streets, defined focal points and overlooked public spaces. It is anticipated that the completed development as described in the SRF will result in a **minor beneficial (not significant)** effect to the townscape character at national level and a **major beneficial (significant)** effect at local level.

Other Information

References

Department for Communities & Local Government, (2019) National Planning Policy Framework, OGL, London

Manchester City Council, (2012) Manchester Core Strategy 2012 to 2027, MCC, Manchester

Manchester City Council, (2019) Manchester Northern Gateway Strategic Regeneration Framework, MCC, Manchester

Landscape Institute, IEMA, (2013) Guidelines for Landscape & Visual Impact Assessment, 3rd Edition, Routledge, Oxfordshire.

Landscape Institute and Institute of Environmental Management & Assessment, (2013), Guidelines for Landscape and Visual Impact Assessment Third Edition (GLVIA), LI/IEMA, London

Natural England, (2014), An Approach to Landscape Character Assessment, Natural England, York

Landscape Institute, (2016), Landscape Character Assessment, Technical Information Note 08/2015, LI, London

Landscape Institute, (2018), Townscape Character Assessment, Technical Information Note 05/2017, LI, London

Landscape Institute, (2019) Visual Representation of Development Proposals, LI,

Natural England, (2013) National Character Area Profile 55: Manchester Conurbation (NE463), Natural England, York

8. Drainage and Flood Risk

Introduction

8.1 This chapter assesses the effects of the proposed development on flood risk and drainage. In particular, it considers the potential effects of the proposed development on existing hydrology and flood risk of the proposed development on the local area.

8.2 The chapter describes the methods used to assess the impacts, the baseline conditions currently existing at the site and surroundings, the potential direct and indirect impacts of the development arising from drainage and flood risk, the mitigation measures required to prevent, reduce, or offset the impacts and the residual impacts. It has been written by Civic Engineers.

Planning Policy Context

International / National Legislation

The European Water Framework Directive (2000)

8.3 The European Water Framework Directive[1] came into force in December 2000, transposed into UK law by the introduction of the Water Resources (Water Framework Directive) (England and Wales) Regulations 2003[2] (WFD) promoting opportunities to plan and deliver a better water environment, focussing on ecology.

8.4 The WFD focuses on the ecological health of surface water bodies, as well as requiring waterbodies to achieve traditional chemical standards. The Environment Agency has produced River Basin Management Plans (RBMPs) drawn up for river basin districts across England and Wales, which set out the baseline information for each waterbody and the requirements for each waterbody to reach good status or good potential.

The Water Resources Act (1991) and The Water Act (2003)

8.5 Water resources in England and Wales are protected by law under the Water Resources Act 1991[3] and the Environmental Protection Act 1990[4] (as amended by the Environment Act 19955). Under section 85 of the Water

[1] Commission of the European Communities, (2000); Directive 2000/60/EC 'The Water Framework Directive'

[2] Her Majesty's Stationery Office (HMSO), (2003); 'The Water Resources (Water Framework Directive) (England and Wales) Regulations'

[3] HMSO, (1991); 'The Water Resources Act'

[4] HMSO, (1990); 'Environment Protection Act' (c.43)

[5] HMSO, (1995); 'The Environment Act'

Resources Act 1991, it is an offence to "*cause or knowingly permit the discharge or other entry of poisonous, noxious or polluting matters or any solid waste matter into controlled waters (as defined under section 104 of the Act)*".

8.6 The Water Act 2003 amends the Water Resources Act 1991 to improve long term water resource management, specifically with regard to the regulation of water abstraction and impoundment.

The Flood and Water Management Act (2010)

8.7 The Flood and Water Management Act**6** 2010 (FWMA) implements Sir Michael Pitt's recommendations following the review of the 2007 floods. The Act defines clearer roles, responsibilities, and standards for the implementation of sustainable urban drainage systems (SuDS) in developments, by requiring drainage systems to be approved against a set of national standards (see below).

8.8 Schedule 3 of the Act advocates that the Lead Local Flood Authority (LLFA) (established at the county or unitary local authority level) would be required to develop, maintain, apply and monitor a strategy for local flood risk management in its area and establish SuDS Approving Bodies (SABs). However, In December 2014, the government set out changes to planning for major developments from 06 April 2015. This change confirmed that in considering planning applications, Local Planning Authorities should consult the relevant LLFA on the management of surface water; satisfy themselves that the proposed minimum standards of operation are appropriate and ensure through the use of planning conditions or planning obligations that there are clear arrangements in place for ongoing maintenance over the lifetime of the development.

8.9 This means that Schedule 3 of the FWMA will not be enacted at this point in time and that LLFA (established at the county or unitary local authority level) will not be required to establish SABs as previously envisaged by the FWMA.

8.10 In March 2015, the Government confirmed that as of the 15 April 2015, LLFAs will become a statutory consultee on all major planning applications. The Manchester City Council (MCC) represents the LLFA for the site.

National Planning Policy

National Planning Policy Framework (February 2019)

8.11 The Department of Communities and Local Government published the revised National Planning Policy Framework (NPPF) February 2019 which outlines the Government's economic, environmental and social planning policies for England.

8.12 The NPPF sets out Government policy on development and flood risk. It identifies how new developments are to take flood risk and climate change into account to ensure that developments not only remain safe from flooding

[6] HMSO, (2010); 'The Flood and Water Management Act'

but also do not increase flood risk elsewhere. NPPF promotes the implementation of SuDS to manage surface water in a manner which mimics existing (pre-development) conditions.

8.13 The NPPF sets out planning principles as guidance for local planning authorities (LPAs) for the creation of their Local Plan, of which the following are directly applicable to the water environment:

Chapter 14 covers "Meeting the challenge of climate change, flooding and coastal change"

Local Planning Policy

The Manchester, Salford and Trafford Strategic Flood Risk Assessment (SFRA)

8.14 The Manchester, Salford and Trafford SFRA states that:

"Development should aim for a minimum reduction in surface water runoff rates of 50% for Brownfield sites, with an aim of reducing runoff to Greenfield rates up to a 1 in 100-year storm event, considering climate change.

Development should be designed so that there is no flooding to the development in a 1 in 30-year event and so that there is no property flooding in a 1 in 100 year plus climate change event."

Policy EN 14 (Flood Risk) of the Manchester Core Strategy

8.15 Policy EN 14 (Flood Risk) of the Manchester Core Strategy states that:

"In line with the risk-based sequential approach contained within PPS25, development should be directed away from sites at the greatest risk of flooding, and towards sites with little or no risk of flooding; this should take account of all sources of flooding identified in the Manchester-Salford-Trafford Strategic Flood Risk Assessment (SFRA).

In addition to the requirements for site-specific Flood Risk Assessments (FRAs) set out in PPS25, an appropriate FRA will also be required for all development proposals, including changes of use, on sites greater than 0.5ha within Critical Drainage Areas (CDAs) and Canal Hazard Zones identified in the SFRA.

All new development should minimise surface water run-off, including through Sustainable Drainage Systems (SUDS) and the appropriate use of Green Infrastructure.

Developers should have regard to the surface water run-off rates in the SFRA User Guide. In CDAs, evidence to justify the surface water run-off approach / rates will be required.

The City of Manchester contains many sections of rivers which are culverted or 'hidden'. Where these are indicated in the SFRA beneath the proposed development site, further investigation will be required and the development proposal should take this into account; where feasible and appropriate development should seek to open up culverted/hidden rivers to reduce the associated flood risk and danger of collapse, taking advantage of opportunities to enhance biodiversity and Green Infrastructure."

Other Relevant Policy, Standards and Guidance

The Building Regulations Part H[7] Drainage and Waste Disposal

8.16 The Building Regulations Part H7 Drainage and Waste Disposal states that infiltration should be the first option for rainwater disposal, followed by discharge to a watercourse. Discharge to a sewer should only be considered where other forms are not practicable.

Environment Agency's Pollution 'Prevention Guidance (PPG).

8.17 The Pollution Prevention Guidance by the EA**9** focuses on how to avoid pollution whilst complying with the law. The PPGs that are applicable to the Site's Water Environment include the following:

8.18 PPG 1: Basic Good Environmental Practices – provides information on basic environmental responsibilities and practices. It also includes basic advice on risk assessment, Site drainage, storing oils and chemicals, waste management and dealing with incidents.

8.19 PPG 2: Above Ground Oil Storage Tanks – provides guidance to those responsible for the storage of oil on construction sites and gives guidance on location, bunding, protection and operation of oil stored in addition to maintenance and brief guidance on dealing with spills.

8.20 PPG 3: Use and Design of Oil Separators in Surface Water Drainage Systems – provides guidance on when oil separators are appropriate and brief guidance on dealing with spills.

8.21 PPG 5: Works in, near or over watercourses – provide advice on how to present pollution and comply with environmental law when planning works near, in or over ponds, lakes, ditches, streams, rivers and other watercourses.

8.22 PPG 6: Construction and demolition sites – provide information about complying with environmental laws and preventing pollution at construction and demolition sites.

8.23 PPG 21: Incident Response Planning – this guidance provides information to help owners produce an incident response plan on operations that may pose a potential risk to the environment.

Construction Industry Research and Information Association Guidance (CIRIA) C753 – The SuDS Manual (2015)

8.24 The CIRIA C753 SuDS Manual**10** represents current best practice for the design and implementation of sustainable drainage. The CIRIA C693 SuDS Manual (2007) has been updated to incorporate the latest technical advice and adaptable processes to assist in the planning, design, construction, management and maintenance of good SuDS. C753 outlines key maintenance requirements and encourages the use of the 'Simple Index Approach'

[7] HM Government, (2010); 'The Building Regulations 2000' (Approved Document Part H: Drainage and Waste Disposal), London, NBS

which sets out the water treatment criteria in relation to land use and SuDS performance evidence. To ensure surface water is appropriately managed and does not cause pollutant-based detriment to receive watercourses, the total pollution mitigation index of the selected SuDS methods must equal or exceed the pollution hazard index for the site.

Construction Industry Research and Information Association Guidance (CIRIA) C532 – Control of Water Pollution from Construction Site (2001)

8.25 Control of water pollution from construction sites 20018 focuses on the risk associated with sources of water on construction sites, pollutants and pathways in addition to providing guidance on planning for the type and location of suitable control measures.

Approach

8.26 Detailed planning permission for a residential-led, mixed-use development on land to the east of Rochdale Road, Collyhurst, Manchester, known as 'Collyhurst Village'. The development proposals will include:

- 244 residential dwellings;
- 155 sqm of commercial space;
- A new "Collyhurst Park";
- Access; and
- Associated infrastructure

8.27 This development option is not considered to have an impact on the ES assessment in terms of flood risk.

Assessment Methodology

8.28 A Flood Risk Assessment (FRA) for the Proposed Development has been undertaken as part of the overall EIA, carried out as part of the Planning Application process, and is appended to this Chapter. This assessment is based upon readily available information along with site walkover surveys.

8.29 The report is intended to identify and quantify the extent to which the proposed development is likely to be affected by flooding, and whether the surrounding areas would be put at greater risk as a result of the proposed development.

Scope

8.30 The scope of the studies undertaken is as listed below:

[8] CIRIA C532, (2001); 'Control of Water Pollution from Construction Site'

- Establish whether the development is itself at risk from flooding from varying sources, as required by NPPF;
- Characterise the Flood Zone(s) within which the site is located and identify the vulnerability classification of the proposed site uses, in line with the NPPF ;
- Identify and advise as to measures which may be required to mitigate the risk of flooding; and
- Establish whether the development may result in increased flood risk elsewhere and advise appropriate measures to mitigate any increased risk.

8.31 The works undertaken in fulfilling the above stated scope are as follows:

- Initial review was undertaken of available information including the Manchester, Salford & Trafford SFRA, and the Flood Risk Map for Planning to assess the risk of flooding from all sources.
- Review of Site Investigation information and Geo-environmental reporting to inform the risk of groundwater flooding and potential for disposal of surface water for infiltration;
- An assessment of the existing site drainage regime has been undertaken and used to inform the post development drainage strategy; and
- A suite of measures was identified in order to mitigate the risk of flooding to the proposed development and such that the proposed development would not result in an increased risk of flooding elsewhere. This included development of a drainage strategy such that the rate of discharge of surface water from the post developed site would not exceed the existing rate of run-off.

Data Sources

8.32 Topographical survey was undertaken by Survey Operations in March 2020 and this has been used as the basis for the FRA.

8.33 Utilities and sewerage mapping have been provided as part of an underground Utilities Search Report undertaken by Layer Surveys Ltd. The report is dates May 2020.

8.34 Ground penetrating radar (GPR) and CCTV surveys have been provided by Layer Surveys Ltd covering the existing utilities in and around the project site. Reports received through July and September.

Assessment of Climate Change

8.35 In July 2020, the Environment Agency released updated climate change allowances for peak rainfall intensities which should be applied to new developments. Table 8.1 demonstrates the climate change allowances with central and upper end allowances being considered.

8.36 Based on the nature of the development, a lifespan in excess of 60 years is anticipated. The potential climate change allowance for 2070-2115 ranges between 20% for the central allowance and 40% for the upper end

allowance. As such, the design will consider an allowance of 40% climate change on peak rainfall intensity for calculations.

Table 8.1: (Extract Environment Agency Guidance) Peak Rainfall Intensity Allowance in small and urban catchments

Applies across all of England	Total potential change anticipated for the '2020s' (2015 to 2039)	Total potential change anticipated for the '2050s' (2040 to 2069)	Total potential change anticipated for the '2080s' (2070 to 2115)
Upper end	10%	20%	40%
Central	5%	10%	20%

8.37 The peak rainfall at the site was calculated based on figures from the Flood Studies Report (FSR) data and Wallingford Procedure which has been sourced from HR Wallingford.

8.38 The peak 1 in1 yr rate of run-off from the site was then calculated using a two-pipe simulated network within Micro-drainage computer software.

Significance Criteria

8.39 The assessment of likely significant effects on the environment has been completed using a qualitative risk assessment methodology, in which the probability of an impact occurring and the magnitude of the impact, if it were to occur, are considered

Table 8.2: Methodology of Determining Impact Magnitude

Magnitude of Impact	Criteria for Assessing Impact
Major	Total loss of major/substantial alteration to key elements/features of the baseline (pre-development) conditions such that the post development character/composition/attributes will be fundamentally changed.
Moderate	Loss or alteration to one or more key elements/features of the baseline conditions such that post development character/composition/attributes of the baseline will be materially changed.
Minor	A minor shift away from baseline conditions. Change arising from the loss/alteration will be similar to the pre-development circumstances/situation.
Negligible	Very little change from baseline conditions. Change barely distinguishable, approximating to a 'no change' situation.

Table 8.3: Methodology for Determining Sensitivity

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

Table 8.4: Effect Significance Matrix

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

Assumptions/Limitations

8.40 The assessment has been informed by information sourced from statutory authorities including the Environment Agency and utility providers and as such to some extent is dependent on the accuracy of this information.

8.41 In assessing cumulative impacts, it is assumed that all committed local developments will comply with Policy as a minimum.

Consultation

8.42 Table 8.5 below summarises the consultations conducted thus far:

Table 8.5: Consultations

Consultee	Date and Time	Comments	Actions
LLFA	22/10/20	Points of Discharge: Although some level of contamination on site has been mentioned in the 'Preliminary Risk Assessment', we would require that a Site Investigation is carried out on both sites to identify the specific levels of pollution and then how this relates to the potential for draining areas of the site via infiltration. In accordance with the drainage hierarchy we would require that soakaway tests are carried out on site to BRE 365 standard before any other points of discharge are agreed. Note: Our records show a culverted main river Moston Brook to run through the centre of the Collyhurst Village site, any works involving/within close proximity to this culvert will require discussions with the EA. Discharge rates: Both of the existing sites are green areas with a substantial amount of green vegetation and which are frequently used by the public for recreational activities. Therefore, we would require that all discharge rates are restricted to greenfield run-off rates to mimic that of the existing site and to create a drainage betterment. In addition, as both of the sites are existing green areas we would require that the use of green SuDS on site are maximised to compensate for the removal of the existing green space. Historic Flood Records: Our records do not show any previous records of flooding on either of the sites.	Comments from LLFA are addressed within the Drainage strategy
UU	19/10/2020	***"Foul Water*** *Foul flow from this site will be allowed to drain into the public foul water/combined sewer system.* *Our preferred point of discharge would be to the 375mm diameter public foul water sewer within Thornton Street North located to the East of your proposed development at an unrestricted rate.*	Comments from UU are addressed within the Drainage strategy

Consultee	Date and Time	Comments	Actions
		If you are able to identify an alternative, more suitable point of discharge, we request that you contact us at your earliest convenience so that we can assess suitability. ***Surface Water*** *All surface water flow from the proposed development should drain in-line with the drainage hierarchy, as outlined in Paragraph 80, (Reference ID: 7-080-20150323), of the National Planning Practice Guidance. We also recommend you prioritise the use of multi-functional sustainable drainage systems for the management of surface water in accordance with national planning policy.* *Generally, the aim should be to discharge surface run off as high up the following hierarchy of drainage options as reasonably practicable.* *This is outlined as follows, in order of priority:* ***1. into the ground (infiltration);*** ***2. to a surface waterbody;*** ***3. to a surface water sewer or highway drain;*** ***4. to a combined sewer.*** *For guidance, The North West SuDS Pro-Forma provides information on the appropriate evidence required at each stage of the hierarchy, to demonstrate how each level has been discounted.* *The Lead Local Flood Authority has responsibility for all surface water drainage concerns and their input to your proposal is critical. You should also consider whether it is necessary to discuss your proposal with the Environment Agency, or Internal Drainage Board (if operating in your area).* *The Local Planning Authority are the determining authority for any application for planning permission and the appropriate authority for determining cost viability of a proposed drainage scheme, such assessments are outside of the jurisdiction of United Utilities.* ***Infiltration*** *Surface water runoff generated from this development*	

Consultee	Date and Time	Comments	Actions
		should discharge to the ground via infiltration system where feasible. *A detailed evidence based feasibility assessment must be carried out in line with Chapter 25 of the CIRIA SuDS Manual 2015 to determine whether infiltration is a suitable method of surface water disposal.* *Particular attention must be paid to Ground Water Source Protection Zones to ensure that the risk of pollution to these valuable resources is not compromised. Details can be obtained from the government website:* *https://www.gov.uk/guidance/groundwater-source-protection-zones-spzs#find-groundwater-spzs* *If your site is in a Groundwater Source Protection Zone, you should have regard to the Environment Agency's approach to Groundwater Protection. Information on this is available via the link below:* *https://www.gov.uk/government/publications/groundwater-protection-position-statements* *Please note that such a location could have implications for the principle of your development and the need for additional mitigating measures to protect the groundwater environment and public water supply in the detailed design of your site.* ***Waterbody*** *If an evidence based assessment has been carried out and confirms that infiltration is not feasible, we recommend that you contact the Lead Local Flood Authority and/or Environment Agency to discuss a point of discharge to the culverted watercourse located within Thornton Street North of the proposed site.* *We would encourage you to identify and engage with any third party landowner and riparian owner to agree access and discharge rights to the water body if this is not in your ownership.* ***Levels*** *For low-lying sites, (where the ground level of the site or the*	

Consultee	Date and Time	Comments	Actions
		level of a basement is below the ground level at the point where the drainage connects to the public sewer), care should be taken to ensure that the property is not at increased risk of flooding. If these circumstances exist, we recommend that you contact us to discuss further. It could affect the detailed design of your site and result in the need to incorporate appropriate mitigating measures in your drainage scheme. ***Sewer Adoptions*** *You have indicated on your application form that you intend to put the sewers forward for adoption (including any SuDS components that can come within the meaning of a sewer).* *United Utilities assess adoption applications based on the current Design & Construction Guidance and local practices which have now replaced 'Sewers For Adoption 6th Edition'.* *We recommend that you submit a pre design assessment to the sewer adoption mailbox (SewerAdoptions@uuplc.co.uk) stating pre design assessment in the title* *Please refer to link**s** below to obtain further guidance:* *https://www.unitedutilities.com/builders-developers/larger-developments/wastewater/sewer-adoptions/* *Site drainage must be designed in accordance with Building Regulations, National Planning Policy, and local flood authority guidelines, we would recommend that you speak and make suitable agreements with the relevant statutory bodies.* *If you intend to put forward your wastewater assets for adoption by United Utilities, the proposed detail design will be subject to a technical appraisal by an Adoption Engineer as we need to be sure that the proposals meets the requirements set out in the Design & Construction Guidance. The proposed design should give consideration to long term operability and give United Utilities a safe and cost effective proposal for the lifetime of the assets. In these cases, we strongly recommend that no construction*	

Consultee	Date and Time	Comments	Actions
		commences until the detailed drainage design, submitted as part of the Section 104 application, has been assessed and accepted in writing by United Utilities. Any work carried out prior to the technical assessment being approved is done entirely at the developer's own risk and could be subject to change. ***Codes For Adoption*** *The new Codes for Adoption are outlined on the Water UK Website. The link below takes you to their webpage:* *https://www.water.org.uk/technical-guidance/developers-services/codes-for-adoption/* *A free copy of the new Design & Construction Guidance can be downloaded via the link below:* *https://www.water.org.uk/wp-content/uploads/2020/03/SSG-App-C-Des-Con-Guide-v-2-100320-C.pdf* ***Existing Wastewater Assets Crossing the Site*** *According to our public sewer records there are public sewers located within your site boundary. We will require unrestricted access to the sewer for maintenance purposes, we would ask that you maintain a minimum clearance of 6m which is measured 3m from the centre line of the pipe unless there happens to be a formal easement agreement in place, in which case the specified easement width would apply. If you cannot achieve this then you may wish to consider diverting and or abandoning the public sewer.* *Please refer to the link below to obtain full details of the processes involved with sewer diversions:* *https://www.unitedutilities.com/builders-developers/larger-developments/wastewater/sewer-diversions/* ***Existing Water Assets Crossing the Site*** *It is the developer responsibility to identify utilities on-site. Where clean water assets are shown on our records, we recommend that you contact our Water Pre-Development Team, via the following email address: DeveloperServicesWater@uuplc.co.uk. Further information*	

Consultee	Date and Time	Comments	Actions
		for this service can be found on our website via the link below: *https://www.unitedutilities.com/builders-developers/larger-developments/pre-development/water-pre-dev/* ***Connection Application*** *Although we may discuss and agree discharge points and rates in principle, please be aware that you will have to apply for a formal sewer connection. This is so that we can assess the method of construction, Health & Safety requirements and to ultimately inspect the connection when it is made. Details of the application process and the form itself can be obtained from our website by following the link below:* *https://www.unitedutilities.com/builders-developers/larger-developments/wastewater/sewer-connections/* *We recommend that the detailed design should confirm the locations of all utilities in the area and ensure that any proposed drainage solution considers routing and clash checks where required."*	
EA	15/10/20	*Thank you for your pre-application enquiry.* *Regarding your drainage proposals, rates of discharge will be for confirmation/acceptance by the Lead Local Flood Authority, we do not comment on this aspect at planning.* *Regarding infiltration, I note that due to historic conditions / potential for contamination this approach for site drainage has been ruled out. It would be advisable to confirm as part of any subsequent planning application that infiltration will not occur and that any features which could enable infiltration e.g. swales will be lined with an impermeable membrane, or similar, if there is the possibility of remnant contamination beneath.* *Regarding your FRA enquiry, please can I draw your attention to the previous letters of advice/ correspondence held with Civic Design Engineers, attached above, for the Collyhurst Village site. A check with our Flood Risk Team indicates that the post-meeting actions noted within EA letter SO/2020/120194/01-L01 have not yet occurred.* *Once you have had a chance to review the attached letters and liaise with your internal team I would happy to discuss appropriate next steps.*	Comments from the EA are addressed within the Drainage Strategy

8.43

Baseline Conditions

8.44 The site is located within the Collyhurst area of Manchester which is approximately 2.4km northeast of the city centre. The development will occupy a discrete site. The site is within Manchester City Council's Northern Gateway Strategic Regeneration Framework (SRF). The site is approximately 4.2ha and is bound by wooded area to the north, Burgess St and Anslow Close to the east, Shellard Road to the south and Rochdale Road to the west. Paget St crosses the site from east to west and Thornton St North runs through the site from north to south. National Grid Reference is 385601,4001519 and nearest post code is M40 7XH.

8.45 There are residential dwellings and a shop existing on site.

Current and Historic Use

8.46 Historic records for the site commence circa 1850 which shows the Moss Brook watercourse crossing the very north eastern corner of the site and entering the reservoir within the areas towards the western edge of the site on the land which is proposed as a park.

8.47 Maps from 1890 show the site almost wholly consisting of terraced housing on a regular grid of streets. The reservoir has been infilled and the watercourse culverted. The street which is currently called Thornton St North is labelled as Culvert St but only extends as far south as Churnet St. Mapping shows that between 1931 and 1949 residential housing changed significantly, with terraced blocks replaced with larger detached dwellings and other facilities including a Day Nursery to the north of Churnet St whilst the area to the south of Churnet St has been cleared with new housing developed to the south east of the site in the area proposed as a new park.

8.48 By 1960 the site has changed dramatically and was largely cleared with a care home labelled as White Gates present immediately to the north of Paget St and further housing served by Overbrook Close to the south of the site. By 1984 further housing and been delivered to the north of the site served by Needwood Close. Thornton St North now extends to the south of Churnet St and the housing to the south eastern site area has been demolished and replaced with new.

8.49 Mapping from 1994 suggest that the access roads to the housing in the southern portion of the site were reconstructed (potentially to bring them up to adoptable standards) but the housing itself appears to remain the same as that shown on earlier maps. Churnet St is also now shown as footpath (as it remains today) rather than a street.

8.50 Aerial imagery from the year 2000 shows the Day Nursery to have been demolished. Demolition records provided by MCC show that the houses served by Needwood Close and Overbrook Close were demolished in 2017 and correspondence in the Health and Safety file suggests foundation were grubbed up to 1m depth at Needwood and 2m depth at Overbrook Close. The care home has also been demolished although no records are

available recording the demolitions. There are residential dwellings and a shop existing on site. Existing Watercourses and Waterbodies

8.51 Desk study and drainage surveys undertaken at the site have identified that there are two culverts that pass beneath the site, both of which are understood to be associated with the Moss Brook, which is classed as a main river and is maintained by the EA. One of the culverts is understood to enter the site from the north before turning ninety degrees and exiting towards Rochdale Road, the second culvert generally follows the line of Thornton Street North (previously known as Culvert Street) but mapping suggests that the culvert veers to the west as it reaches the southernmost part of the site, running across the street currently known as Overbrook Street. The approximate alignment is illustrated in Figure 8.1 below and shown on Civic Engineers' Constraints Drawing in Appendix B of the FRA.

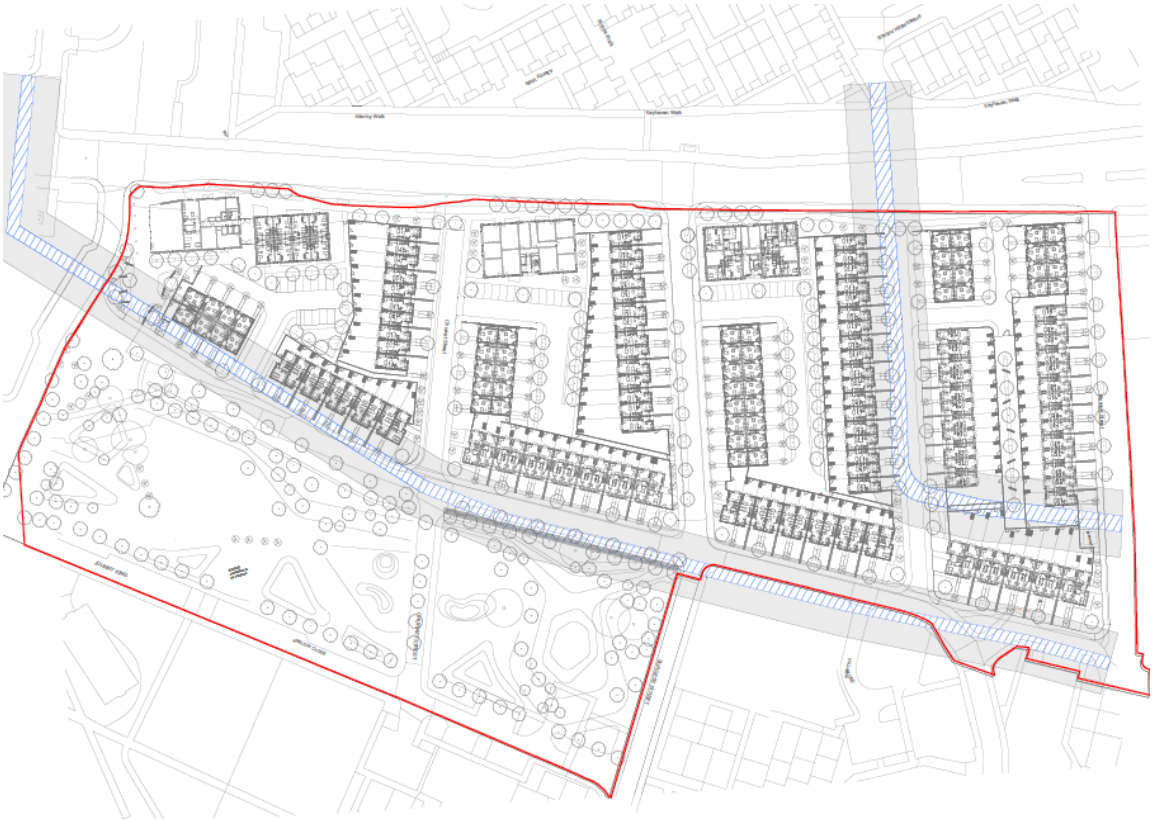


Figure 8.2: Approximate alignment of culverts beneath the site

Existing Drainage

8.52 A Drainage survey was carried out in May 2020 by Layer Surveys Ltd. The drainage survey shows the following drainage networks located within boundary:

- A 225-300mm diameter surface water network running north-east, discharging into a manhole within Stretton Close;

- A 225-300mm diameter foul water network running north-east, discharging into a manhole within Stretton Close;
- There is a surface water network running within the culvert located in the northern parcel of the site, running in a west to east then northernly direction; and
- Two culverted watercourses run beneath the site at depths of between 10m and 20m. Both of these culverts are associated with the Moss Brook.

Topography

8.53 A topographical survey was undertaken by Survey Operations in December 2019. This survey was provided to Civic Engineers in March 2020 and was used to develop an Existing Site Constraints package of information which is included in Appendix E of the FRA presented at **Appendix 8.1**.

8.54 The survey identifies various features on the site including dense vegetation, concrete walls, pavers, tarmac, rough ground, infilled manholes and inspection chambers which may have been associated with the previous development.

8.55 The site falls from the north-west to the south west. The lowest point is shown as approximately 53.00mAOD south west of the site whilst the highest point is approximately 62.3mAOD north of the site.

Geology

8.56 A Phase 1 Preliminary Risk Assessment (PRA) and Mining Risk Assessment was carried out by LK Group in February 2020, investigating the existing ground conditions present on the site.

8.57 Geology is mapped as Till over Pennine Coal Measures in the north and central parts of the site, Penning Upper Coal Measures in the south and central part of the site and Worsley Delf rock in the southern part of the site. The limited historic investigations that are available show there to be varying depths of made ground present across the site. Given the history of the site, deep made ground is anticipated in localised areas.

8.58 The site sits above a Secondary A Aquifer.

8.59 The PRA identified the following site-specific elements that need to be investigated further prior to any construction works being commenced:

- Deep made ground and /or obstructions remnant from previous development including housing and a former reservoir; and
- Potentially variable superficial deposits.

Hydrogeology

8.60 The site sites above a Secondary A Aquifer which is a permeable layer capable of supporting water supplies at a local rather than strategic scale. These are generally classed as minor aquifers. The MAGIC maps, are interactive maps that provide information on rural, urban, coastal and marine environments. The maps identified a secondary aquifer within the bedrock and superficial layers across the sites. The site is not within a Source Protection Zone.

Flood Risk (Fluvial)

8.61 The entirety of Collyhurst Village is located within Flood Zone 1 (see **Figure 8.2**) which means the site is considered to be at less than 0.1% chance of flooding in any year and so is not at risk of fluvial flooding.

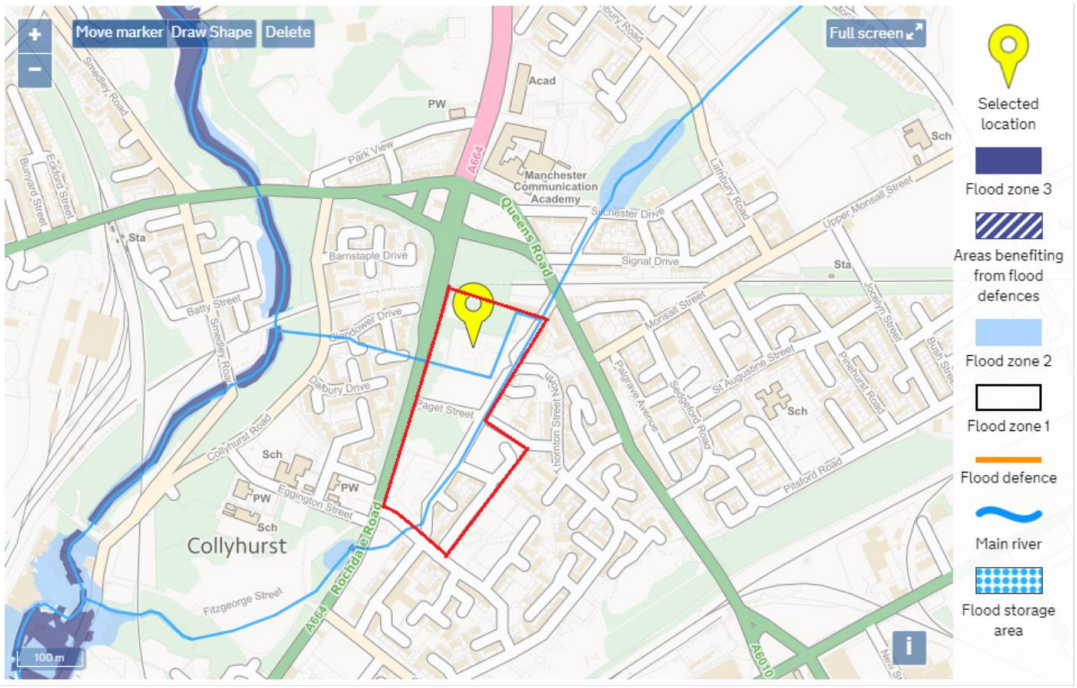


Figure 8.3: Flood Risk Maps for Planning

Flood Risk (Tidal)

8.62 As the proposed site is approximately 45km from the nearest coastal body of water, the risk from tidal flooding is considered to be Low.

Flood Risk (Groundwater)

8.63 The Manchester City, Salford City and Trafford Councils Level 2 Hybrid SFRA details the risk of groundwater flooding within the city based on the best available information at the time it was produced. The 'Groundwater Flooding' map does not show the proposed site within an 'area at risk of Groundwater flooding' or within an 'area at risk of Groundwater rebound'. It should also be noted that this information should not be viewed as fully

comprehensive due to the nature of groundwater flooding and there are potentially additional areas of risk within the city.

8.64 The Manchester City Council Local Flood Risk Management Strategy document notes that flood risk from groundwater has not been historically significant.

Flood Risk (Surface Water)

8.65 Surface water flooding can be caused when rainwater, during extreme rainfall events, does not drain away through the normal drainage system or soak into the ground. Surcharging sewers can result in overland flows which if originating at a higher elevation than a development site can potentially pose a flood risk.

8.66 Surface water flooding is dependant primarily on topography which dictates either the flow path of overland flow which is not contained within public sewers, or areas in which ponding may occur. Surface water flooding is more difficult to predict than the risk of flooding from rivers or sea as it is dependent on the amount of rain which will fall in a very localised area, the specific topography of that area and the capacity and functionality of the drainage network within that area.

8.67 From the UK Government's Flood Risk from Surface Water (extent of flooding) map:

- Where a site is located in a dark blue shaded zone, this indicates that the site is at high risk of flooding where there is a chance of flooding of greater than 1 in 30 (3.3%).
- Where a site is located in a mid-blue shaded zone, this indicates that the site is at medium risk of flooding where there is a chance of flooding of between 1 in 100 (1%) and 1 in 30 (3.3%).
- Where a site is located in a light blue shaded zone; this indicates that the site is at low risk of flooding where there is a chance of flooding between 1 in 1000 (0.1%) and 1 in 100 (1%).
- Where a site is located in a white (unshaded) area; this indicates that the site is at very low risk of flooding where there is a chance of flooding of less than 1 in 1000 (0.1%).

8.68 The Flood Risk for Planning maps shows the majority of the site is at Very Low risk of surface water flooding with some areas indicated as being within a low to high risk of surface water flooding and can be seen below in Figure 8.3.

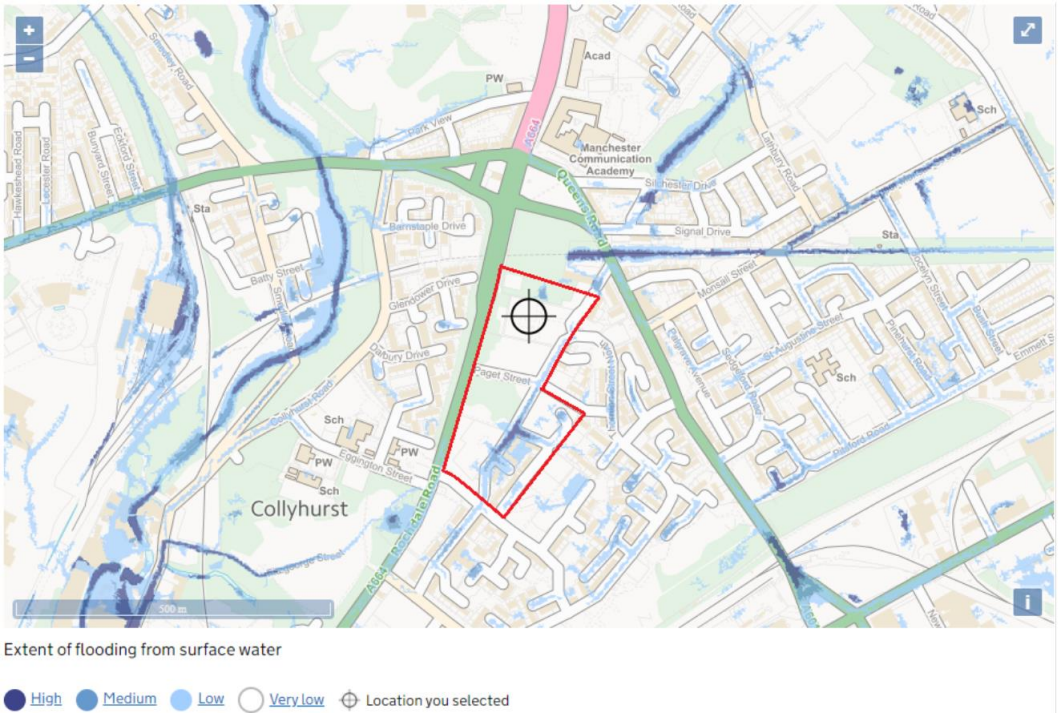


Figure 8.4: Surface Water Flood Risk

Flood Risk (Drainage Infrastructure)

8.69 As outlined in **Appendix 8.1**, there are a number of surface and foul water sewers within the vicinity of the site.

8.70 Providing United Utilities and Manchester City Council maintain their drainage assets in the vicinity of the site, the risk of flooding to the proposed development site from public sewer or highway drainage is considered to be Low.

Embedded Mitigation

Construction

8.71 There are no embedded mitigation measures proposed as part of the construction phase.

Completed Development

8.72 The following embedded mitigation measures are proposed as part of the completed development:

- The surface water drainage will be designed to restrict run off to brownfield discharge rates including a 50% betterment in line with the requirements of the SFRA and as such will not result in an increase of flooding elsewhere.
- Low flow fittings and appliances will be specified where feasible to reduce foul flow discharge from the site.

Potential Impacts

8.73 The proposed development is to consist of a residential-led, mixed-use development on land to the east of Rochdale Road, Collyhurst, Manchester, known as 'Collyhurst Village'. The development proposals will include:

- 244 residential dwellings (Use Class C3);
- 162.6 sqm of commercial space (Use Class E);
- 79.9sqm of residents' communal space;
- 0.8 ha of park;
- Access; and
- Associated infrastructure

8.74 Construction of the proposed development is anticipated to start on site in 2021 with full completion expected by 2023. Due to the scale and nature of the development a two phased approach for the construction of the scheme with be necessary. This will take the form of:

- Parcel D and C together with apartment blocks A and B. Commercial floorspace is being delivered as part of apartment block A to ensure that the existing shop is relocated into the new development; and
- Parcel B and A together with demolition of existing houses and construction of park (parcels E and F).

Construction

8.75 During site operations there is a risk of potential contaminants including fuel, oils and other effluents from mechanical plant, dirty water cement and general impacting on the adjacent Moss Brook through infiltration or through overland flow. Without mitigation the impact would be **minor adverse** in the short term in the local area which is **not significant**. With the magnitude assessed as minor and the sensitivity assessed as medium.

Completed Development

8.76 Without appropriate mitigation measures the development could result in an increase in surface water discharge to the Moss Brook as a result of climate change if flows were not managed. This increase in run-off could add to the resulting flooding during large storm events. The impact would be **major-moderate adverse** in the long term at the local level. With the magnitude assessed as moderate and the sensitivity assessed as high. However, with the implementation of mitigation measures, this is not considered to have a significant impact.

8.77 From the evidence collated and subsequent negotiations, the flood risk proposed to the development can be summarised as follows:

- Rivers and sea – Very Low Risk;

- Reservoirs – Very Low Risk;
- Ground Water – Very Low Risk;
- Public sewers – Low Risk; and
- Surface Water – Very Low Risk, with some areas at low to high risk.

8.78 Additional wastewater discharging to the local infrastructure.

Mitigation Measures

Demolition and Construction

Construction Environmental Management Plan

8.79 Many of the short-term impacts arising from the development of the site can be effectively mitigated by the utilisation of good construction techniques and practices implemented by a project Construction Environmental Management Plan (CEMP). These will include the following measures as a minimum:

- Where feasible, site-specific construction techniques will be adopted to ensure that no migration pathways are created to jeopardise groundwater quality. Where deeper foundations are required such as for basement levels, appropriate piling techniques (i.e. non driven techniques) will be used to minimise the associated risk;
- The use of appropriate measures as outlined in EA Pollution Prevention Guidance to prevent spillage of potentially polluting substances, including:
    - Appropriate storage and handling measures for all hydrocarbon fuels and lubricating oils, including the use of bunded storage areas or the use of double-skinned storage tanks;
    - The use of drip trays for static plant and designated refuelling areas for mobile plant;
    - The implementation of appropriate spillage contingency measures to mitigate the impact of such spillages on the surface water; and
    - Appropriate personnel awareness training of the potential environmental implications of all construction work on Site.
- The prevention of silt-laden run-off and mud entering the foul sewers by:
- Timely site phasing and engineering, thus minimising un-surfaced and un-vegetated areas of the site to as small as practicably possible;
- The provision of measures to intercept and treat such run-off prior to it leaving the site, including the use of peripheral cut-off ditches, settlement facilities, filtration and/or use of flocculants to effect the removal of water borne particulates; and

- The provision of wheel-cleaning equipment for site plant to prevent the tracking of mud onto the public highway and therefore into the off-site surface water drainage systems.

Suspended Sediment

8.80 A number of measures will be employed during construction to prevent the release of suspended sediments including:

- Site access points will be regularly cleaned to prevent build-up of dust and mud;
- Earth movement will be controlled to reduce the risk of silt combining with the site runoff;
- Properly contained wheel wash facilities will be used (where required) to isolate sediment rich runoff;
- Cut-off ditches and/or geotextile silt-fences will be installed around excavations, exposed ground, stockpiles to prevent the uncontrolled release of sediments from the site;
- Sediment traps will be required on all surface water drains in the surrounding region; and
- Silty water abstracted during excavations will be discharged to settlement tanks. Cleaned runoff will be discharged through the existing foul sewer drains. If sewer capacity is limited, then silty water will need to be stored and removed from the Site by tanker and disposed of at a suitably licensed location. A discharge consent detailing volumes and rates of discharge will be agreed with UU prior to the commencement of works, if necessary.

Oils and Hydrocarbons

8.81 Measures will be taken to protect controlled waters from the release of oil and hydrocarbons. Wherever possible, plant and machinery will have drip trays beneath oil tanks/engines/gearboxes/hydraulics which will be checked and emptied regularly and correctly disposed of via a licensed waste disposal operator.

8.82 Oils and hydrocarbons will be stored in designated locations with specific measures to prevent leakage and release of their contents, including the siting of the storage area away from the drainage system on an impermeable base, with an impermeable bund that has no outflow and is of adequate capacity to contain 100% of the contents. Valves and trigger guns will be protected from vandalism and kept locked when not in use.

8.83 There is a risk of accidental spillage of oils and fuels. An emergency spillage action plan will be produced, which site staff will have read and understood. On-site provisions will be made to contain a serious spill or leak through the use of booms, bunding and absorbent material.

Concrete and Cement Products

8.84 A number of on-site precautions will be taken to reduce the potential effect. This will be subject to detailed design and would include pre-mixing the majority of concrete used and delivering it from an off-site source, thereby negating the need to mix concrete on-site and reducing the creation of alkaline wastewater on-site.

8.85 Wherever necessary, any mixing and handling of wet concrete that is required on-site will be undertaken in designated areas; and a designated area will be used for any washing down or equipment cleaning associated with concrete or cementing processes and facilities provided to remove sediment prior to disposal of foul water.

Completed Development

8.86 There would be no mitigation measures other than those embedded in the design.

Residual Impacts

Construction

8.87 With appropriate mitigation the impact associated with anticipated on-site activities can be limited to **negligible**.

Completed Development

8.88 The introduction of new residencies and foul flows that the proposed development would generate will place additional demand on the sewerage network in the area. The impact would be minor adverse in the long term at the local level.

Table 8.6: Residual Effects Summary

Description of Effect	Potential impact including significance	Mitigation	Residual Effect including significance
Construction and Demolition			
Pollution of groundwater or of the Moss Brook resultant from construction activities	Minor adverse in the short term in the local area	Mitigation measures including the production of a Construction Environmental Management Plan and adoption of best practice would mitigate the impact associated with anticipated on-site activities.	Negligible – not considered significant
Completed Development			
Additional wastewater discharging to the local infrastructure.	Minor adverse in the long term at the local level	No mitigation measures are proposed other than those designed.	Minor adverse in the long term at the local level. Permitting adequate maintenance of the system - effects are not considered

Description of Effect	Potential impact including significance	Mitigation	Residual Effect including significance
			significant.

Assessment of In-Combination Effects

8.89 On the basis that all new development will comply with appropriate policy with regards to flood risk and surface water management and all relevant approvals processes associated with discharge of foul water then the in-combination effects associated with flood risk and drainage would be **negligible** which is **not significant**.

Conclusions

8.90 The majority of potential impacts associated with the development will be mitigated through "embedded mitigation" measures designed into the development.

8.91 The only impact which will remain post mitigation will be the minor adverse impact associated with the increased discharge of wastewater to the local combined sewer network. The impact will be managed through consultation and securing appropriate approvals from United Utilities for discharge to the sewer.

9. Transport and Access

Introduction

9.1 This chapter assesses the effects of the proposed development on transport and access. It considers the anticipated effects of the proposed development on existing traffic conditions in the local area.

9.2 The chapter describes the methods used to assess the baseline conditions currently existing at the site and surroundings, the potential direct and indirect impacts of the development arising from changes in traffic flows during construction and operation, the mitigation measures required to prevent, reduce, or offset the impacts and the residual impacts. It has been written by Civic Engineers and should be read in conjunction with the Transport Assessment (TA), and Travel Plan (TP) in **Appendix 9.1** and **9.2** respectively.

Planning Policy Context

National Planning Policy

9.3 National planning policy in relation to transport matters is set out in the revised National Planning Policy Framework (NPPF) (Issued February 2019, updated June 2019).

9.4 Regarding transport, the policies are contained within paragraphs 102 to 111 at Section 9 and all relate to the promotion of sustainable transport. Paragraph 102 of the NPPF states that:

> *"Transport issues should be considered from the earliest stages of plan-making and development proposals, so that:*
>
> *a) the potential impacts of development on transport networks can be addressed;*
>
> *b) opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised – for example in relation to the scale, location or density of development that can be accommodated;*
>
> *c) opportunities to promote walking, cycling and public transport use are identified and pursued;*
>
> *d) the environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains; and e) patterns of movement, streets, parking and other transport considerations are integral to the design of schemes, and contribute to making high quality places.*

9.5 In considering development proposals, paragraph 108 states that:

"In assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:

a) appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;

b) safe and suitable access to the site can be achieved for all users; and

c) any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree"

9.6 Paragraph 109 then goes on to state that:

"Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.

Within this context, applications for development should:

a) give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;

b) address the needs of people with disabilities and reduced mobility in relation to all modes of transport;

c) create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;

d) allow for the efficient delivery of goods, and access by service and emergency vehicles; and

e) be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.

All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed."

Local Planning Policy

Manchester Core Strategy (2012-2027)

9.7 **Policy CC5 – Transport –** states that: "*the Transport Strategy for Manchester City Centre will be delivered to ensure that transport is managed in a way which supports the projected growth of the City Centre.*

Developers should work with public transport providers to ensure that all users are able to access development by sustainable means, especially taking account of times when developments are likely to be busiest.

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

- *Remove buses and private cars from St Peter's Square*
- *Create a new pedestrian priority zone initially the area bounded by Deansgate, Peter Street / Oxford Street, Portland Street, Piccadilly North, Manchester Arndale, Corporation Street and Exchange Square*
- *Close Victoria Street in the Medieval Quarter to traffic and create a new public realm around the Cathedral and Chethams*
- *The council will seek to ensure that development includes adequate parking provision for cars and bicycles. This should be based on the parking standards described in Appendix B of the Core Strategy."*

9.8 **Policy T1 – Sustainable Transport** – "*To deliver a sustainable, high quality, integrated transport system to encourage modal shift away from car travel to public transport, cycling and walking, to support the needs of residents and businesses and to prepare for carbon free modes of transport, the Council will support proposals that:*

- *Improve choice by developing alternatives to the car.*
- *Promote regeneration and economic vitality by relieving traffic congestion and improving access to jobs and services, particularly for those most in need and for those without a car.*
- *Improve access to transport services and facilities in order to enable disabled people and people with mobility impairments to participate fully in public life.*
- *Improve pedestrian routes and the pedestrian environment.*
- *Improve and develop further Manchester's cycle network (for example the Manchester Cycleway and the Trans Pennine Trail).*
- *Contribute to improvements to the extent and reliability of the public transport network through safe and attractive waiting and interchange facilities, better priority, improved services and information provision.*
- *Improve and develop appropriate road, rail and water freight transport routes and associated intermodal freight transport facilities in order to assist in the sustainable and efficient movement of goods.*
- *Facilitate modes of transport that reduce carbon emissions e.g. by incorporating charging points for electric vehicles, subject to their appropriate design and location.*
- *Would reduce the negative impacts of road traffic, for example, congestion, air pollution and road accident casualties.*
- *Take account of the needs of road users according to a broad hierarchy consisting of, in order of priority:*

- *Pedestrians and disabled people;*
- *Cyclists, public transport;*
- *Commercial access;*
- *General off-peak traffic; and*
- *General peak time traffic."*

9.9 **Policy T2 – Accessible Areas of Opportunity and Need** – "*The Council will actively manage the pattern of development to ensure that new development:*

- *Is located to ensure good access to the City's main economic drivers, including the Regional Centre, the Oxford Road Universities and Hospitals and the Airport and to ensure good national and international connections*
- *Is easily accessible by walking, cycling and public transport; connecting residents to jobs, centres, health, leisure, open space and educational opportunities. Particular priority will be given to providing all residents access to strategic employment sites including:*
  - *Links between North Manchester residents and key employment locations, including the City Centre, Central Park, Salford Quays and Chadderton Industrial Estate and Trafford Park.*
  - *Links within East Manchester to employment locations, Central Park and Eastlands in particular.*
  - *Links within Central Area between residents and employment, the Corridor in particular and east/west connectivity for residents in Central Area to employment areas in Trafford and East Manchester.*
  - *Maintaining strong links between residential areas in the South and the Regional Centre and improving connectivity with the Airport.*
  - *Ensuring good links between Wythenshawe residents and the Airport and further employment opportunities in Stockport, Trafford and the Regional Centre.*
- *Within the City Centre, provides a level of car parking which reflects the highly accessible nature of the location, as well as the realistic requirements of the users of the development. Elsewhere, all new development should provide appropriate car parking facilities, taking account of the guidance in appendix B, which reflects policy in the Regional Strategy (RS). In all parts of the City proposals should have regard to the need for disabled and cycle parking, in line with appendix B. If the RS is revoked the Council will continue to use these standards when applying this policy. Standards are set for two different area types:*
  - *District Centres*
  - *Areas not within the City Centre or District Centres*

(The car parking standards are maximums and the cycle and disabled car parking standards are minimums. However, the Council will take the circumstances of each proposal into account to establish what level of parking is appropriate.)

- *Includes proportionate Traffic Impact Assessments and Travel Plans for all major applications and for any proposals where there are likely to be access or transport issues."*

9.10 **Policy T3 – Strategic Integration –** The council will support proposals that contribute to an economically and environmentally sustainable transport network including the following strategic transport initiatives:

- *Metrolink extensions to Rochdale, Oldham, Ashton, South Manchester and the Airport. The Council also supports future aspirations to extend the network to Trafford Park and Stockport.*
- *A second Metrolink crossing in the City Centre.*
- *A Metrolink extension to Marple on the current heavy rail network.*
- *Improvements to the heavy rail infrastructure.*
- *The Cross City Bus Package comprising new connections through the City Centre to Parrs Wood, Middleton and Salford.*
- *Any proposals which would prejudice the implementation of the strategic integration of projects will be refused."*

Greater Manchester Transport Strategy 2040

9.11 The Greater Manchester Transport Strategy 2040 outlines the growth strategies for the Greater Manchester region to 2040, including multi-modal transport options and the growth of non-motorised transport, particularly for commuting to the City Centre.

9.12 The strategy identifies a vision of "*world class connections that support long-term, sustainable economic growth and access to opportunity to all*" and aims to focus on creating an "*integrated, sustainable, and well co-ordinated transport system which supports a wide range of travel needs*", allowing the transport system to be more customer focused and responsive to changing travel needs.

9.13 The strategy makes note of an increased investment toward public transport, with medium and long term heavy and light rail strategies to connect both areas of Greater Manchester and cities across the north, increased frequency and development of the Metrolink network, and integration across transport modes of ticketing and door-to-door transport.

9.14 Walking and cycling links are also stated to be vital to the strategy, with investment in walking route networks to local and regional centres, segregated from the road network to allow direct entry to public transport interchanges, as well as improved cycle parking and cycling facilities at key destinations with greater on-street wayfinding.

9.15 The accessible location of the site would encourage travel by sustainable modes, supported by measures in the TP.

Other Relevant Policy, Standards and Guidance

Northern Gateway – Strategic Regeneration Framework

"The Vision for the Northern Gateway is to deliver a series of vibrant, sustainable and integrated residential neighbourhoods within the extended city centre of Manchester. These neighbourhoods will provide a range of housing options in a high-quality, well managed environment, with high levels of connectivity that link the growth of the city centre with surrounding Manchester communities. This will include the delivery of a range of affordable housing products to meet the needs of residents on a range of incomes. The Northern Gateway SRF will support long-term growth and promote economic, social and cultural uses to support the creation of high performing and sustainable new communities where people choose to live, work, and play."

Core objectives presented to support the regeneration framework are listed as follows:

1. *A unique and high-quality residential-led regeneration scheme,*
2. *A varied network of high-quality green streets and public open spaces,*
3. *Manchester's unique city river park,*
4. *Build on the best of what is there,*
5. *Improve connectivity across the northern gateway and beyond,*
6. *Create new gateways to and from the city centre,*
7. *Promote truly sustainable places,*
8. *Foster the emergence of local retail and service hubs.*

9.16 The proposed development is within the 'Collyhurst Village' neighbourhood which is to be a residential-led neighbourhood with a distinctive sense of place, a mix of housing options and a dynamic community heart.

Manual for Streets and Manual for Streets 2 – Application of the Wider Principles

9.17 Manual for Streets (MfS) was jointly published in 2007 by the DfT and Department for Communities and Local Government (DCLG) to provide guidance on the design of residential streets.

9.18 MfS2 was published in September 2010 by the Chartered Institution of Highways and Transportation (CIHT). It does not supersede the guidance in MfS but explains how the principles can be applied on the wider highway network.

9.19 As detailed in the TA, the development masterplan has been prepared in such a way as to respect the character of the existing area and ensure that the development attractively fits in with the local environment.

Approach

Assessment Methodology

9.20 The aim of the assessment is to identify, as far as reasonably possible, the nature of the transport changes within the area of the proposed development, to assess the significance and to make appropriate recommendations.

9.21 The TA considers the traffic impacts during construction as well as impacts during the operation of the proposed development.

9.22 The content of the TA, including trip rates, trip distribution, and scope of impact assessment, has been agreed with MCC and TfGM. Any comments from the highway authorities have been given due consideration as part of the TA.

Desk-based Data

9.23 Various online resources were used to gather data for the report, the specific details of which can be found below.

Local Highway Network

9.24 An initial site visit was carried out to assess the Local Highway Network surrounding the site. Any information gathered about Traffic Regulation Orders (TROs) in the area was combined with online map data to provide an analysis of the network.

Highway Safety

9.25 Details of collisions in the area surrounding the site are taken from crashmap.co.uk for the five years up to 2019. Data on this site is collected from the official data published by the Department for Transport which is based of records submitted to them by police forces across the UK. It only provides information about collisions that happen on public roads, are reported to the police and that are subsequently recorded. While fatal accidents are almost always known to the police, there are a considerable proportion of non-fatal collisions that are not reported. Collisions are categorised by incident severity, all of which are analysed in the initial assessment. Results can also be filtered by casualty type to help identify any trends in the data, collisions involving pedestrians, cyclists and motorcycles are each looked at individually.

Walking Links

9.26 Online streetview tools, and a site visit were used to assess the walking network in the area. Details including street lighting, footway conditions and widths, locations of pedestrian crossings, and the types of crossings that

are present are all recorded. Hazards in the area (e.g. cars parked on the footway) are also noted along with any obstacles or route severance that is present.

Cycle Links

9.27 TfGM publish a map of all the cycle routes around the city. This is used to inform the assessment about cycle routes in the area. The maps provide up to date details of traffic free routes, on-road routes (segregated/signposted/advisory etc.), streets that have 20mph limits, and the locations of cycle parking.

Public Transport Links

9.28 Information on transport links in the area was gathered using information from TfGM and National Rail. TfGM provide details of bus and tram services operating in the city while National Rail provide information on the rail services in and out of the city.

Characterisation of Impact

9.29 Impacts consider the following, including details of how the impacts are categorised in terms of positive or negative; extent; magnitude; duration; timing; frequency; reversibility; and likelihood:

- **Severance** – Severance is defined in the Design Manual for Roads and Bridges (DMRB) as "*the separation of residents/site users from facilities and services they use within their community caused by new or improved roads or by changes in traffic flows*". Developments cause severance when they cut existing routes by placing physical obstructions in the way of pedestrians, cyclists, or vehicular traffic. Severance is generally a negative impact. Conversely developments can improve connectivity by creating new routes, which have a positive impact. The change in route length will determine the extent and magnitude of the impact. The duration, timing and reversibility of the impact will depend on whether the change is temporary, during the construction phase, or permanent. Because creating or severing routes requires physical infrastructure, it is possible to clearly state the likelihood of this impact occurring.
- **Driver delay** – It is considered that driver delay contributes to the level of driver stress, outlined in the DMRB as having three principal elements: frustration, fear of potential accidents and uncertainty relating to the route being followed. It is recognised that the weight of these factors varies depending on the driver. For example, those who drive for commuting purposes will often have a higher stress threshold, due to route experience and knowledge, compared to those who may only drive on a route occasionally for leisure purposes. An increase in vehicle journey times (driver delay) can be caused by developments through either changes to the highway network, for example, introducing a new junction, or by the addition of traffic generated by the new development. Generally, driver delay is perceived to be negative, although it can result in slower vehicle speeds which can have a positive impact on road safety (see below). The extent of the impact is measured by looking at the trip distribution across the wider highway network. Generally, the further away from the development, the more the development traffic disperses, and the impact has less magnitude. Weekday morning and afternoon peak hours are considered because these are the times when

the development will generate most trips and when the network is at its busiest. Vehicle trip generation estimations are based on the Trip Rate Information Computer System (TRICS) database and data from the 2011 Census. Actual trip generation may differ depending on the availability of car parking, availability of alternative modes of transport and the measures implemented through the TP (which accompanies this planning application) which will incentivise modes of transport other than the private car. Therefore, while it is possible to estimate the impacts on journey time, there is the possibility that the actual impacts may differ. There is also potential for impacts to be reversed if fewer people choose to use the private car. Values for delay can be determined using junction modelling software.

- **Pedestrian delay** – The Institute of Environmental Management and Assessment (IEMA) guidelines describe how changes in the volume, composition or speed of traffic have the potential to affect the ability of people to cross roads. Changes to pedestrian journey times can be either positive (shorter or less busy) or negative (longer and busier). The magnitude of the impact is usually greater immediately surrounding the development because both pedestrians and development-related vehicular traffic quickly disperse through the network of streets. Weekday peak hour trip generation is assessed as this represents the periods when the development will generate the most trips, as well as when the surrounding streets are at their busiest with existing demand. Changes to pedestrian journey times are highly likely if they are caused by physical changes to the network but may fluctuate if caused by other pedestrians or vehicles.
- **Pedestrian amenity** – Pedestrian amenity is broadly defined as the relative pleasantness of a journey, and is considered to be affected by traffic flow, traffic composition, footway widths and separation from traffic. Improvements to the landscape treatment (such as the introduction of street trees or benches) can have a positive impact on pedestrian amenity. An increase in traffic and reduction in footway widths would have a negative impact. The greatest impact will be in the immediate environs of the development where changes to the site frontage and landscaping will have a permanent effect on pedestrian amenity. Changes associated with traffic flows generated by the development will depend on the time of day and the way that people choose to travel.
- **Accidents and safety** – The IEMA guidelines state that an assessment of road safety on the highway network should be undertaken based on recent personal injury accident (PIA) records. An increase in traffic is generally understood to increase the likelihood of an accident occurring. The severity of the impact will depend on vehicle speeds and the specific characteristics of the accident. An increase in road safety incidents is negative. A development can have a positive impact on road safety by reducing the number of conflict points or by managing these conflict points to engender slower vehicle speeds or warn pedestrians, particularly those with disabilities, about the potential hazard, for example by installing tactile paving at a pedestrian crossing. As the occurrence of an accident is "*an unfortunate incident that happens unexpectedly and unintentionally, typically resulting in damage or injury*", it is difficult to predict the timing or frequency of any incidents. Mitigation measures that influence the impact of the development on accidents and safety can include measures to reduce vehicle speeds and traffic volumes.

- **Hazardous loads** – The assessment considers whether hazardous load movements will be required as part of the life cycle of the proposed development, and the potential effect this may have relating to transport and access. Hazardous loads are more likely to be associated with the development during the construction and demolition phases and are unlikely to occur, even temporarily, during the operation of the proposed development. Risks associated with hazardous loads are generally considered to be negative. The magnitude and extent of the risk during the construction period will be managed by contractors to reduce the impact of hazardous loads on the surrounding area. There are not expected to be any hazardous loads at the development site because a previously consented scheme undertook groundworks to remove contaminants, therefore hazardous loads are not considered for the rest of this assessment.

Significance Criteria

9.30 For both the construction and operational phases the receptor has been identified as road users i.e. pedestrians, cyclists and motorists. For the purposes of this assessment the receptor is considered to be of high sensitivity, thus providing the most robust assessment of environmental effects. The significance of change in traffic flow volume on road users for each of the environmental effects previously identified is considered in relation to the significance matrix of Table 9.1.

Table 9.1: Matrix of significance for the consideration of environmental effects

Magnitude of Change/Effect	Sensitivity of Receptor		
	High	**Medium**	**Low**
Major	Major Adverse/Beneficial	Major – Moderate Adverse/Beneficial	Moderate – Minor Adverse/Beneficial
Moderate	Major – Moderate Adverse/Beneficial	Moderate – Minor Adverse/Beneficial	Minor Adverse/Beneficial
Minor	Moderate – Minor Adverse/Beneficial	Minor Adverse/Beneficial	Minor - Negligible
Negligible	Negligible	Negligible	Negligible

9.31 Within the assessment, the level of magnitude will be defined on the basis of relevant guidance and the application of standard transport planning practice. Considering Table 9.1the following terms will be used to assess the significance of environmental effects:

- Major adverse or beneficial effect – where the development would cause a significant improvement or deterioration to the receptor;
- Moderate adverse or beneficial effect – where the development would cause a noticeable improvement or deterioration to the receptor;
- Minor adverse or beneficial effect – where the development would cause a barely noticeable improvement or deterioration to the receptor; and
- Negligible effect – where the development would cause no noticeable improvement or deterioration to the receptor.

9.32 Any links predicted to experience a change of traffic flow of less than 30% as a result of the proposed development are considered to be subject to negligible magnitude of change. In considering the level of significance, any impact above 'Minor effect' has been considered as a significant effect.

Assumptions/Limitations

9.33 Detailed information regarding the construction methodology and total forecast construction traffic movements is not available so estimated traffic volumes have been calculated based upon experience of similar schemes in consideration of the development proposals.

9.34 At this stage it is not envisaged that any hazardous material will be exported from the site. If at a later stage the investigations do find material considered as being hazardous then an appropriate risk assessment would be carried out so that any significant effects would be identified and appropriately mitigated.

9.35 As detailed in the TA and discussed with MCC and TfGM, the proposed commercial/community space is ancillary to the residential units and as such would not generate trips in its own right. As such, this assessment only considers trips generated by the residential element of the proposed development.

Consultation

9.36 Consultations that have taken place are shown in Table 9.2

Table 9.2: Consultation

Consultee	Date	Comments	Actions
Manchester City Council	May 2019	Agreed scope of the Transport Assessment	TA produced as agreed
Transport for Greater Manchester	May 2019	Agreed scope of the Traffic Impact Assessment. Agreed the trip generation methodology and	TA produced as agreed

Consultee	Date	Comments	Actions
		mode share for assessment	

Baseline Conditions

9.37 This section describes the baseline conditions of the site and surrounding area. More detail is included in Section 2 of the TA.

Local Highway Network

9.38 Rochdale Road is a strategic radial route from Manchester city centre through the Northern Gateway Strategic Regeneration Framework (SRF) area. To the south Rochdale Road connects with Angel Street which is part of the Manchester ring road. To the north is a junction with Queens Road, after which the road continues north providing a connection with the M60 and continues to Rochdale.

9.39 Queens Road A6010, to the east of the site is a local strategic route through the north of Manchester. Queens Road connects with Oldham Road to the south and with Cheetham Hill Road to the west.

9.40 Oldham Road to the south of the site is another radial route to Manchester city centre to the west and a connection to the M60 to the east before reaching Oldham.

9.41 Other streets in the area are local access streets providing access to the residential areas in Collyhurst and Miles Platting.

Highway Safety

9.42 Data was examined for road traffic collisions in the vicinity of the site that took place in the 5-year period to 2019. All collisions that occurred on the surrounding street are summarised in Table 9.3. The total number of incidents have been broken down by severity. In addition, the number of collisions involving pedestrians, cyclists or motorcyclists have been recorded.

Table 9.3: List of collisions on the streets surrounding the site.

Location	Fatal	Serious	Slight	Pedestrian	Cycle	Motorcycle
A6010/Rochdale Road	-	1	10	2	2	-
Rochdale Road	-	3	6	3	1	1

Location	Fatal	Serious	Slight	Pedestrian	Cycle	Motorcycle
A6010 Queens Road	-	1	4	-	-	1
Oldham Road	-	1	11	1	3	1
Total	-	6	31	6	6	3

Walking Links

9.43 The site is accessible to pedestrians from all directions, those who are walking from public transport stops will most likely access the site from the west along Rochdale Road or from the east via Thornton Street North.

9.44 Rochdale Road has 3-3.5m footways along either side with controlled crossing points at various points along its length. The nearest controlled crossing to the site is approximately 40m south of Paget Street, there is another 50m to the south of Shellard Street and another at the junction of Rochdale Road and the A6010 about 130m to the north of the site. Rochdale Road has streetlighting along its length and informal crossings with dropped kerbs at junctions with side roads, some of which have tactile paving. The other streets in and around the site have 1.8m footways either side with dropped kerbs and tactile paving at the crossing points.

9.45 To the east of the site there are a network of footpaths through the existing residential area. These provide access to Queens Road where there are controlled crossings at Monsall Street on route to Monsall tram stop.

Cycle Links

9.46 There are several dedicated cycle facilities around the site including on-road routes along Rochdale Road shared with a bus lane in the northbound direction and only for a short distance southbound from the junction with the A6010.

9.47 Along Queens Road the cycle facilities are on road to the south of the site and shared with the pedestrian footway further north. These facilities form a section of the National Cycle Route (NCR) 60 which runs between Sale water park to the south west of Manchester city centre and Harpurhey to the north of Collyhurst.

9.48 Many of the streets within Collyhurst Village are subject to a 20mph speed limit, so although they do not have specific cycle infrastructure the traffic speed is low enough that a confident cyclist could use any of these streets to get around.

Public Transport Links

Bus

9.49 Table 9.4 sets out a summary of the most regular bus services calling at the stops on Rochdale Road and Queens Road. The closest bus stops to the development are on Rochdale Road, adjacent to the site, buses stopping here are shown in bold in the table.

Table 9.4: Local bus services and their frequency

Service	Route	Frequency (minutes)			
		Monday - Saturday		Sunday	
		Daytime	Evening	Daytime	Evening
17	**Manchester - Collyhurst - Blackley - Middleton - Castleton - Rochdale**	**10**	**10**	**15**	**30**
18	**Langley — Middleton — Manchester — Manchester Royal Infirmary**	**10**	**10**	**15**	**30**
53	Cheetham Hill - Gorton - Rusholme - Old Trafford - Salford Quays - Pendelton	30	60	60	60
56	**Manchester - NMGH - Manchester circular**	**30**	**-**	**-**	**-**
81	**Manchester - Collyhurst - Moston - Werneth - Oldham - Derker**	**30**	**60**	**60**	**60**
112/113	**Middleton – Moston – Collyhurst – Piccadilly Gardens**	**15**	**20**	**30**	**30**
114	Manchester - Collyhurst - Moston - Alkrington - Boarshaw	20/30	60	60	60
117	**Greengate - Moston – Collyhurst – Piccadilly Gardens**	**30**	**-**	**60**	**-**
118	**Boarshaw - Moston – Collyhurst – Piccadilly Gardens**	**15**	**15**	**30**	**60**
119	**N. Manchester General Hospital –**	**30**	**30**	**60**	**60**

Service	Route	Frequency (minutes)			
		Monday - Saturday		Sunday	
		Daytime	Evening	Daytime	Evening
	Moston – Piccadilly Gardens				
151	Hollinwood - Failsworth - Collyhurst - NMGH - Cheetham Hill - Mandley Park	60	-	-	-
156	**Middleton – Rhodes – N. Manchester General Hospital – Shudehill Interchange**	**30**	**30**	**60**	**60**
162/163	**Norden/Bury - Heywood – Middleton – Collyhurst - Piccadilly Gardens**	**10**	**20**	**15**	**60**

9.50 The information in Table 9.4 is correct at the time of writing (December 2020), however, many services are operating on temporary timetables in response to Covid-19 and as such may not be representative of 'normal' operations.

Tram

9.51 The closest Metrolink stop to the site is Monsall, which is located approximately 600m to the east of the site. Monsall is served by the pink Metrolink line, providing services between Rochdale and East Didsbury.

9.52 Another stop near to the site is Queens Road, approximately 700m to the northwest of the site. Queens Road is served by the green and yellow lines which offer services between Bury and Piccadilly or Altrincham.

9.53 Services run 06:00-00:00 Monday to Saturday; from 06:00-19:00 Monday to Friday and 08:00-20:00 Saturday trams run at 10-minute intervals, at other times there is a 20-minute service. On Sunday, a 15-minute service runs from 07:00-23:00.

Train

9.54 The nearest train station to the development is Manchester Victoria Station located approximately 2km (as the crow flies) to the southwest of the site. The station can be reached on foot in about 30 minutes, by bicycle in around 10 minutes, or by bus in around 15 minutes.

9.55 Manchester Victoria Station is the city's second largest mainline station and home to one of the nine Metrolink stops within the City Zone. The station hosts local and regional services to destinations such as Leeds, Newcastle, Liverpool, Rochdale and Huddersfield, operating across 6 platforms.

9.56 The station is staffed between the hours 0630 – 2200 Monday to Saturday and 0800 – 2215 on Sundays. The station benefits from both a ticket office and ticket machines with ticket barriers. Cycle storage is available within the station (38 cycle stands). Refreshment facilities and toilets are also available.

Embedded Mitigation

9.57 The appropriate mitigation measures have been explored at the design stage to eliminate, minimise or manage identified potential significant effects on the environment by the proposed development. Strategies of best practice for mitigation will be followed when considering the methods of dealing with the environmental impacts.

9.58 The assessment of transport and access impacts assumes that the measures outlined below will be implemented, with the initial significance of the impacts assessed on the basis that these embedded measures are effective.

Demolition and Construction

9.59 There are no embedded mitigation measures proposed for during the demolition and construction phase at the proposed development.

Completed Development

9.60 This section provides details of the mitigation measures 'embedded' into the proposed development.

Parking

9.61 As detailed in the TA, 204 car parking spaces are proposed at the development, 168 spaces are in driveways at the houses with the remaining 35 spaces in the communal parking courts for the apartments, 16 of which are for visitor parking, this is in line with appropriate guidelines and scoping discussions. There are additional parking spaces proposed on-street on Thornton Street North.

9.62 Cycle parking is proposed across the development with two spaces allocated for every house (200% provision) and a space for 100% of the apartments. Cycle parking for residents will be in secure stores that are accessed from street level for the apartment blocks and the houses will each have their own secure cycle stores.

Sustainable Infrastructure

9.63 Inclusive access will be provided to the proposed development with well signposted entrance points. Access to the buildings will accommodate the needs of all users, including those people with disabilities. This will have a positive impact on pedestrian amenity.

9.64 Furthermore, the development will provide high quality public realm along Rochdale Road, Thornton Street North, and the internal streets of the development. This will have a positive impact on pedestrian amenity in the area.

Potential Impacts

9.65 This section details the potential impacts of the scheme and their significance. It covers the potential impacts, issues identified in the EIA Scoping Report, issues raised through all consultations and the LPA's formal scoping opinion.

Demolition and Construction

9.66 During the enabling works phase there will be an increase in HGV movements at the site. This has been estimated at 2,000 two-way vehicle movements (1,000 vehicles arriving and then departing) over a period of about 6 months which equates to approximately 6 vehicles per day, the impact of this is likely to be **negligible** which is **not significant**.

9.67 It is likely that there will be an increase in traffic on the local highway network from construction workers, this might be car or cycle traffic and will include additional pedestrians. It is likely there will be an increase in HGVs on the local highway network associated with the construction and delivery of materials to site. The impact of this temporary additional traffic on severance, driver delay and pedestrian delay is expected to be **negligible** which is **not significant**.

9.68 The environmental impacts of construction traffic could potentially include the following:

- Dust and air pollution from material being removed from site (see Chapter 10: Air Quality and Dust);
- Mud and dirt from the site ending up on the local highway and making its way into local waterways (see Chapter 8: Drainage and Flood Risk); and
- Noise generated by construction traffic (see Chapter 11: Noise and Vibration).

Completed Development

Severance

9.69 No single link or junction will experience an increase of more than 30 two-way traffic movements in the AM or PM peak. As such, these increases in traffic are likely to be indiscernible when compared with day-to-day fluctuations in traffic and therefore the development is considered to have a **negligible** impact on severance which is **not significant**.

Pedestrian amenity & pedestrian delay

9.70 Increased numbers of pedestrian and cyclists on the local highway network are to be expected. This has the potential to create a permanent long-term moderate beneficial impact on pedestrian delay and pedestrian amenity. Increased active travel will reduce the number of private vehicles generated by the development and therefore reduce the impact of the development on air pollution and traffic noise. The additional benefit will come from improved perception of safety due to more people using the streets surrounding the site, resulting in a positive impact on pedestrian amenity. There is expected to be a **negligible** impact, which is **not significant**, on public transport, details of which are provided in the TA.

Driver delay & driver stress

9.71 The potential impact of the development on other road users is likely to be **negligible** which is **not significant**, with little increase in driver delay or driver stress expected.

Accidents & safety

9.72 Accidents are anticipated to reduce, and safety improve due to the public realm improvements associated with the site providing a better environment for pedestrians and cyclists, this will create a minor beneficial impact. The increase in traffic associated with the development is not significant enough to result in a noticeable impact on accidents and safety.

Mitigation Measures

9.73 The following paragraphs summarise the design features that will be implemented in order to reduce the likely significant environmental effects of changes in traffic flow volume as a result of construction and operation of the proposed development, while maximising the environmental benefits.

Demolition and Construction

9.74 A Construction Environmental Management Plan (CEMP) will be produced and implemented by the appointed contractor in such a way as to minimise the impacts of construction traffic, in particular reducing the risk of likely environmental effects.

9.75 The CEMP will include details of routing and the times of day of movements, which will be undertaken in accordance with best practice construction management processes. It will include details of acceptable practices with respect to vehicle movements.

9.76 During the construction period it is anticipated that associated traffic flows will not compromise the efficiency of the existing highway network. It is envisaged that the construction traffic would be managed through a CEMP which could include the following measures in order to further reduce the impact of the development traffic:

- Preferred routes for heavy good vehicles (HGVs) to and from the site to be identified and agreed with the local highway authority;
- Tracking of mud from site entrances to be addressed by on-site wheel cleaning;
- Efforts to be made to minimise dust and mud emissions generated from HGV movements (HGVs to be sheeted);
- The highway in the vicinity of all site access to be kept free from dirt generated by the site clearance activities;
- Any abnormal loads to be scheduled in consultation with both the local highway authorities and the local Constabulary and to be advertised well in advance in order to minimise possible disruption;
- HGV movements to be confined to a designated operational period, the precise hours to be agreed with the highway authority;
- The operator should ensure that all drivers are informed of the requirement to drive slowly and safely on approaches to the site. Supplementary road signs enforcing such instructions could also be erected, if this is felt necessary;
- Warning signs indicating the presence of the site entrances and directing HGV traffic to be erected;
- Car parking to be provided on-site for contractor vehicles; and
- Instructing HGV drivers that they are not to arrive at the site outside of the site's permitted period of operation and that they should not park/lay-over on the adjacent highway network.

9.77 It is anticipated that a planning condition will be attached to any planning consent to cover these aspects.

9.78 Additional measures to be considered within the CEMP should include, but are not limited to, areas inclusive of:

- Construction Travel Plan;
- Agreed vehicle route plan;
- Agreed hours of operation;
- Details of wheel washes;
- Details of dust limitation; and
- Details of road cleaning.

Completed Development

9.79 No off-site highway improvement schemes are required as the proposed development will not result in a severe impact on the surrounding highway network.

Travel Plan

9.80 The TP (see Appendix 9.2) prepared in support of the development identifies potential measures to promote the available sustainable transport options to users of the site and minimise single occupancy car trips associated with the development. The subsequent reduction in traffic will mitigate the impacts of the development in terms of severance, driver delay, pedestrian delay, pedestrian amenity and road safety.

9.81 The TP defines site specific initiatives and measures to help reduce the dependency on the private car and to increase the use of more sustainable modes of travel. This includes:

- Identification of a Travel Plan Coordinator who will be responsible for the implementation of the TP;
- Distribution of information to residents regarding the best walking, cycling, and public transport routes to the City Centre and Greater Manchester;
- Promotion of walking and cycling resources; and
- Provision of safe and secure cycle parking.

9.82 The success of the implemented TP initiatives and measures will be measured against targets which will be defined alongside a full implementation, management and monitoring strategy.

Residual Impacts

Construction Phase

9.83 The anticipated Transport and Access associated environmental effects on road users as a result of increased traffic levels associated with the demolition and construction phase of the proposed development are **negligible** given their temporary nature and magnitude of effect which is **not significant**.

9.84 Following the introduction of the best practice construction mitigation measures it is concluded that the residual effects on road users will remain as **negligible** which is **not significant**.

Operational Phase

9.85 The Transport and Access associated environmental effects on road users as a result of increased traffic levels associated with the operational phase of the proposed development are **negligible** given their magnitude of effect which is **not significant**.

9.86 Following the introduction of the operational mitigation measures it is concluded that the residual effects on road users will remain as **negligible** which is **not significant**.

Table 9.5: Residual Effects Summary

Description of Effect	Potential impact including significance	Mitigation	Residual Effect including significance
Construction and Demolition			
Severance	Negligible (detailed assessment not required)	Production of Construction Environmental Management Plan. Key principles adhered to.	**Negligible** which is **not significant**
Driver Stress			
Pedestrian Delay			
Pedestrian Amenity			
Accidents and Safety			
Hazardous Loads			
Completed Development			
Severance	Negligible (detailed assessment not required)	None required	**Negligible** which is **not significant**
Driver Stress			
Pedestrian Delay			
Pedestrian Amenity			
Accidents and Safety			
Hazardous Loads			

Assessment of In-Combination Effects

9.87 This section details the potential in-combination effects of the development of the wider Northern Gateway Strategic Regeneration Framework (NGSRF).

Approach

9.88 Where possible the consented developments within the NGSRF area have been considered, see **Error! Reference source not found.**.

9.89 The transport impacts of the NGSRF were assessed in the in the Northern Gateway Technical Services Transport Evidence Report, published by Arup in January 2018.

Potential Impacts

Construction

9.90 At present, due to the lack of availability of construction traffic data for NGSRF sites, it is not possible to make an accurate assessment of the likely construction in combination impact.

9.91 There is potential for significant increase in traffic if all the development sites in the NGSRF area start construction at a similar time.

9.92 There is also potential for pedestrian connections to be temporarily severed, for example through footway closures.

Completed Development

9.93 Once all Northern Gateway developments are operational, there is the potential for increase in vehicle movements at junctions located within the Northern Gateway. Junction modelling has been undertaken to understand the impacts on driver delay. The results are documented in the Northern Gateway Technical Services Transport Evidence Report, published by Arup in January 2018. There is the potential for a minor adverse impact if there are no highway improvements carried out in relation to the other developments across the Northern Gateway.

9.94 The Transport Evidence Report also assesses the impact of the wider development on the existing public transport network and looks at ways to encourage active travel modes.

9.95 There will be an increase in the number of pedestrians and cyclists in the area when all the developments in the NGSRF are completed.

Mitigation Measures

Construction

9.96 Construction vehicle movements and footway closures will be agreed with MCC as each site comes forward for development and this process will be managed by MCC accordingly.

Completed Development

9.97 A parking strategy will accompany the NGSRF and will include measures to alter the Traffic Regulation Orders (TROs) in the area. Updating TROs can help reduce the incidences of inappropriate on-street parking.

9.98 As set out in the NGSRF there will be an overall improvement to the public realm and footway frontage in the area, increasing pedestrian connectivity, amenity and safety. There will also be traffic calming measures brought

in to make local routes safer for cyclists and upgrades to the cycle infrastructure on busier roads to create safer commuting routes into the city centre.

9.99 The Transport Evidence Report recommends four priority areas of intervention:

- Sand Street multi-modal transport hub – provision for a dedicated Metrolink Stop, bus pick-up/drop-off facility and cycle facilities;
- A664 Rochdale Road Infrastructure – provision for improvements to walking and cycling infrastructure, which may include provision for segregated cycleways along the section of highways between Addington Street and Queens Road;
- Collyhurst Road – provision for bus and cycle infrastructure along Collyhurst Road. This is also likely to include junction improvements to the Collyhurst Road and Queens Road junctions to facilitate bus movements at this location; and,
- Highways improvements – a total of eleven off-site junctions (including the Collyhurst Road and Queens Road) junction may require an improvement scheme at different phases of the development build-out.

Residual Impact

9.100 There are likely to be residual impacts following the implementation of the measures recommended in the Transport Evidence Report. The increase in vehicle trips generated by the developments coming forward as part of the Northern Gateway may impact severance, driver delay, pedestrian amenity, accidents and safety and hazardous loads. The severity and magnitude of the in-combination residual impacts will depend on wider policies, funding, infrastructure provision and cultural changes which will dictate the popularity of the private car as a transport mode of choice. Should policies and infrastructure move towards supporting cleaner, active travel (for example implementation of the Manchester Bee Network Cycling Improvements, reduction in parking requirements and an increase in the proportion of electric vehicles), encouraging transformational modal shift, the negative impacts of vehicular traffic will be less significant and the positive impacts on pedestrian journey times, pedestrian amenity and road safety will be more significant.

9.101 With the information available at this stage it is not possible to quantify the likely in-combination residual impacts or comment on their magnitude. For example, a development site may discover a hazardous material on-site such as asbestos, but this will not be known until ground investigations have been carried out.

Conclusions

9.102 Mitigation measures to be embedded into proposed development have been explored during the design stage to eliminate, minimise or manage the identified potential significant effects. Measures to achieve this include a parking strategy (both for cycles and cars) and sustainable infrastructure such as inclusive access which will positively impact on pedestrian amenity.

9.103 The potential impacts of the development on severance, driver delay and driver stress are anticipated to be negligible. However, the potential impacts on pedestrian amenity and pedestrian delay are anticipated to be moderately beneficial while the potential impact on accidents and safety likely to see a minor beneficial impact.

9.104 Additional mitigation measures during the construction phase such as a CEMP will help mitigate the impacts of construction traffic on the local highway, with these measures it is not anticipated that the construction phase traffic will have a significant impact on the efficiency of the local highway network.

9.105 The residual effects from both the construction phase and operational phase are anticipated to be negligible which is not significant.

9.106 With the information available at this stage it is not possible to quantify the likely in-combination residual impacts or comment on their magnitude.

Other Information

References

Accident information taken from crashmap.co.uk

Manchester Cycle Map:
https://assets.ctfassets.net/nv7y93idf4jq/jdJT410VnqQ6UeCSOioMG/53ffeaf12f1da91158f92ebf73013551/17-0095_MANCHESTER__8__Cycle_map_leaflet_48pp_A1_Hi-res_PRINT.pdf

Design manual for roads and bridges. (2003). London: HMSO.

Institute of Environmental Assessment, 2004. Guidelines for Environmental Impact Assessment. Lincoln: IEMA.

Arup, 2018. Northern Gateway Technical Services Transport Evidence Report, Arup, Manchester.

10. Air Quality and Dust

Introduction

10.1 This chapter assesses the impact of the proposed development on local air quality. In particular it considers the potential effects of construction phase dust and operational phase road traffic emissions on air quality at identified existing receptor locations.

10.2 The chapter describes the methods used to assess the impacts, the baseline conditions currently existing at the site and surroundings, the potential direct and indirect air quality impacts of the proposed development, the mitigation measures required to prevent, reduce, or offset the impacts and the residual impacts. It has been written by Redmore Environmental Ltd.

Planning Policy Context

Legislation

10.3 The Air Quality Standards Regulations (UK, Government, 2010) came into force on 11th June 2010 and include Air Quality Limit Values (AQLVs) for the following pollutants:

- Nitrogen dioxide (NO_2);
- Sulphur dioxide;
- Lead;
- Particulate matter with an aerodynamic diameter of less than 10µm (PM_{10});
- Particulate matter with an aerodynamic diameter of less than 2.5µm ($PM_{2.5}$);
- Benzene; and,
- Carbon monoxide.

10.4 Target Values were also provided for an additional 5 pollutants. These include:

- Ozone;
- Arsenic;
- Cadmium;
- Nickel; and,
- Benzo(a)pyrene.

10.5 Part IV of the Environment Act (UK Government, 1995) requires UK government to produce a national Air Quality Strategy (AQS) which contains standards, objectives and measures for improving ambient air quality. The most recent AQS was produced by the Department for Environment, Food and Rural Affairs (DEFRA) and published in July 2007 (DEFRA, 2007). The AQS sets out Air Quality Objectives (AQOs) that are maximum ambient pollutant concentrations that area not to be exceeded either without exception or with a permitted number of exceedences over a specified timescale. These are generally in line with the AQLVs, although the requirements for the determinations of compliance vary. It should be noted that AQOs were not determined for $PM_{2.5}$. As such, the relevant Air Quality Target Value (AQTV) has been utilised throughout the assessment.

10.6 Table 10.1 presents the AQOs for pollutants considered within the assessment.

Table 10.1: Air Quality Objectives

Pollutant	Air Quality Objective	
	Concentration (µg/m^3)	Averaging Period
NO_2	40	Annual mean
	200	1-hour mean, not to be exceeded on more than 18 occasions per annum
PM_{10}	40	Annual mean
	50	24-hour mean, not to be exceeded on more than 35 occasions per annum

10.7 Table 10.2 presents the AQTV considered within this assessment.

Table 10.2: Air Quality Target Values

Pollutant	Air Quality Target Values	
	Concentration (µg/m^3)	Averaging Period
$PM_{2.5}$	25	Annual mean

10.8 Table 10.3 summarises the advice provided in DEFRA guidance (DEFRA, 2018) on where the AQOs for pollutants considered with this Chapter apply.

Table 10.3: Examples of Where the Air Quality Objectives Apply

Averaging Period	Where Objectives Should Apply	Where Objectives Should Not Apply
Annual mean	All locations where members of the public might be regularly exposed. Building facades 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 and 8-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 Air Quality Management

10.9 Under Section 82 of the Environment Act (Part IV) (UK Government, 1995) Local Authorities (LAs) are required to periodically review and assess air quality within their area of jurisdiction under the system of Local Air Quality Management (LAQM). This review and assessment of air quality involves comparing present and likely future pollutant concentrations against the AQOs. If it is predicted that levels at locations of relevant exposure, as summarised in Table 10.3, are likely to be exceeded, the LA is required to declare an Air Quality Management Area (AQMA). For each AQMA the LA is required to produce an Air Quality Action Plan (AQAP), the objective of which is to reduce pollutant concentrations in pursuit of the AQOs.

Dust

10.10 The main requirements with respect to dust control from industrial or trade premises not regulated under the Environmental Permitting (England and Wales) Regulations (UK Government, 2016) and subsequent

amendments, such as construction sites, is that provided in Section 79 of Part III of the Environmental Protection Act (UK Government, 1990). The Act defines nuisance as:

> *"any dust, steam, smell or other effluvia arising on industrial, trade or business premises and being prejudicial to health or a nuisance,"*

10.11 Enforcement of the Act, in regard to nuisance, is currently under the jurisdiction of the local Environmental Health Department, whose officers are deemed to provide an independent evaluation of nuisance. If the LA is satisfied that a statutory nuisance exists, or is likely to occur or happen again, it must serve an Abatement Notice under Part III of the Environmental Protection Act (UK Government, 1990). The only defence is to show that the process to which the nuisance has been attributed and its operation are being controlled according to best practicable means.

National Planning Policy

10.12 The revised National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, 2019) was published in February 2019 and sets out the Government's planning policies for England and how these are expected to be applied.

10.13 The purpose of the planning system is to contribute to the achievement of sustainable development. In order to ensure this, the NPPF recognises three overarching objectives, including the following of relevance to air quality:

> *"c) An environmental objective - to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy."*

10.14 Chapter 15 of the NPPF details objectives in relation to conserving and enhancing the natural environment. It states that:

> *"Planning policies and decisions should contribute to and enhance the natural and local environment by:*
>
> *[...]*
>
> *e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality [...]"*

10.15 The NPPF specifically recognises air quality as part of delivering sustainable development and states that:

> *"Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel*

management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications. Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan."

10.16 The implications of the NPPF have been considered throughout this assessment.

National Planning Policy

10.17 The National Planning Practice Guidance (NPPG) (Ministry of Housing, Communities and Local Government, 2019) web-based resource was launched on 6th March 2014 and updated on 1st November 2019 to support the NPPF and make it more accessible. The air quality pages are summarised under the following headings:

1. What air quality considerations does planning need to address?
2. What is the role of plan-making with regard to air quality?
3. Are air quality concerns relevant to neighbourhood planning?
4. What information is available about air quality?
5. When could air quality considerations be relevant to the development management process?
6. What specific issues may need to be considered when assessing air quality impacts?
7. How detailed does an air quality assessment need to be?
8. How can an impact on air quality be mitigated?

10.18 These were reviewed and the relevant guidance considered as necessary throughout the undertaking of this assessment.

Local Planning Policy

10.19 The Manchester Local Development Framework consists of a series of planning documents of which the Core Strategy (MCC, 2012) is central. This was adopted by MCC on 11th July 2012 and provides policies which guide the determination of planning applications within the city.

10.20 A review of the Core Strategy indicated the following policies of relevance to the assessment:

"Policy EN 16

Air Quality

The Council will seek to improve the air quality within Manchester, and particularly within Air Quality Management Areas, located along Manchester's principal traffic routes and at Manchester Airport. Developers will be expected to take measures to minimise and mitigate the local effect of emissions from

traffic generated by the development, as well as emissions created by the use of the development itself, including from Combined Heat and Power and biomass plant.

When assessing the appropriateness of locations for new development the Council will consider the effects on air quality, alongside other plan objectives. This includes cumulative effects, particularly in Air Quality Management Areas."

"Policy DM 1

Development Management

All development should have regard to the following specific issues for which more detailed guidance may be given within a supplementary planning document:-

[...]

Effects on amenity, including privacy, light, noise, vibration, air quality, odours, littler, vermin, birds, road safety and traffic generation. This could also include proposals which would be sensitive to existing environmental conditions, such as noise."

10.21 The implications of the above policies were taken into consideration through the undertaking of the assessment.

Other Relevant Policy, Standards and Guidance

10.22 The following air quality related guidance was utilised throughout the assessment:

- Guidance on the Assessment of Dust from Demolition and Construction Version 1.1 (Institute of Air Quality Management (IAQM), 2016);
- Guidance of Land-Use Planning & Development Control: Planning for Air Quality (IAQM, 2017);
- Local Air Quality Management Technical Guidance (TG16) (DEFRA, 2018);
- Design Manual for Roads and Bridges (DMRB) Volume 11, Section 3, Part 1, LA 105 (Highways England, 2019);
- Mitigation of Development Air Quality Impacts V1.1. (IAQM, 2018); and,
- Town and Country Planning (Environmental Impact Assessment) Regulations (UK Government, 2011).

Approach

Assessment Methodology

Construction Phase

10.23 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 V1.1' (IAQM, 2016).

10.24 Due to the scale and nature of the development, there will be a need to sequence the construction phase over two main phases. It should be noted that the assessment assumed that the existing properties will be in place during the construction of both phases so to provide an assessment of the worst-case scenario.

10.25 Activities on the proposed construction site have been divided into four types to reflect their different potential impacts. These are:

- Demolition;
- Earthworks;
- Construction; and,
- Trackout.

10.26 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 significant increase in exposure to PM_{10}.

10.27 The first stage screens the requirement for a more detailed assessment. Should human receptors be identified within 350m from the boundary or 50m from the construction vehicle route up to 500m from the site entrance, then the assessment proceeds to the next stage. Additionally, should ecological receptors be identified within 50m of the site, or the construction vehicle route up to 500m from the site entrance, then the assessment also proceeds to the next stage.

10.28 The second stage of the assessment screens the risk of potential dust impacts. It should be noted that the standard IAQM terminology of risk has been replaced with significance criteria, and the magnitude of dust emissions 'small', 'medium' and 'large' have been replaced with '**minor**', '**moderate**' and '**major**', respectively, to allow continuity throughout the Environmental Statement (ES) and comparison of various effects. A site is initially allocated an effect significance (risk) category based on two factors:

- The sensitivity of the area to dust impacts, which can be defined as low, medium or high sensitivity; and,
- The scale and nature of the works, which determines the magnitude of dust arising as low, medium or high.

10.29 The two factors are combined in order to determine the potential effect significance without the mitigation applied.

10.30 The influencing factors that define the sensitivity of the area around a development to potential impacts as shown in Table 10.4.

Table 10.4: Construction Dust - Examples of Factors Defining Sensitivity of an Area

Sensitivity	Examples	
	Human Receptors	Ecological Receptors
High	• Users expect of high levels of amenity; • High aesthetic or value property; • People expected to be present continuously for extended periods of time; and • Locations where members of the public are exposed over a time period relevant to the AQO for PM_{10} e.g. residential properties, hospitals, schools and residential care homes.	• Internationally or nationally designated site e.g. Special Area of Conservation (SPA).
Medium	• Users would expect to enjoy a reasonable level of amenity; • Aesthetics or value of their property could be diminished by soiling; and • People or property wouldn't reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land e.g. parks and places of work.	• Nationally designated site e.g. Sites of Special Scientific Interest (SSSI).
Low	• Enjoyment of amenity would not reasonably be expected; • Property would not be expected to be diminished in appearance; and • Transient exposure, where people would only be expected to be present for limited periods. e.g. public footpaths, playing fields, shopping streets, playing fields, farmland, footpaths, short term car park and roads.	• Locally designated site e.g. Local Nature Reserve (LNR).

10.31 The guidance also provides the following factors to consider when determining the sensitivity of an area to potential dust impacts:

- Any history of dust generating activities in the area;
- The likelihood of concurrent dust generating activity on nearby sites;
- Any pre-existing screening between the source and receptors;
- Any conclusions drawn from analysing local meteorological data which accurately represent the area; and if relevant the season during which works will take place;
- Any conclusions drawn from local topography;
- Duration of the potential impact, as a receptor may become more sensitive over time; and,
- Any known specific receptor sensitivities which go beyond the classifications given in the document.

10.32 These factors were considered in the undertaking of this assessment.

10.33 The criteria for determining the sensitivity of the area to dust soiling effects on people and property is summarised in Table 10.5.

Table 10.5: Construction Dust - Sensitivity of the Area to Dust Soiling Effects on People and Property

Receptor Sensitivity	Number of Receptors	Distance from the Source (m)			
		Less than 20	Less than 50	Less than 100	Less than 350
High	More than 100	High	High	Medium	Low
	10 - 100	High	Medium	Low	Low
	1 - 10	Medium	Low	Low	Low
Medium	More than 1	Medium	Low	Low	Low
Low	More than 1	Low	Low	Low	Low

10.34 Table 10.6 outlines the criteria for determining the sensitivity of the area to human health impacts

Table 10.6: Construction Dust - Sensitivity of the Area to Human Health Impacts

Receptor Sensitivity	Background Annual Mean PM_{10} Concentration	Number of Receptors	Distance from the Source (m)				
			Less than 20	Less than 50	Less than 100	Less than 200	Less than 350
High	Greater than 32µg/m^3	More than 100	High	High	High	Medium	Low
		10 - 100	High	High	Medium	Low	Low
		1 - 10	High	Medium	Low	Low	Low
	28 - 32µg/m^3	More than 100	High	High	Medium	Low	Low
		10 - 100	High	Medium	Low	Low	Low
		1 - 10	High	Medium	Low	Low	Low
	24 - 28µg/m^3	More than 100	High	Medium	Low	Low	Low
		10 - 100	High	Medium	Low	Low	Low
		1 - 10	Medium	Low	Low	Low	Low
	Less than 24µg/m^3	More than 100	Medium	Low	Low	Low	Low
		10 - 100	Low	Low	Low	Low	Low

Receptor Sensitivity	Background Annual Mean PM_{10} Concentration	Number of Receptors	Distance from the Source (m)				
			Less than 20	Less than 50	Less than 100	Less than 200	Less than 350
		1 - 10	Low	Low	Low	Low	Low
Medium	Greater than 32µg/m^3	More than 10	High	Medium	Low	Low	Low
		1 - 10	Medium	Low	Low	Low	Low
	28 - 32µg/m^3	More than 10	Medium	Low	Low	Low	Low
		1 - 10	Low	Low	Low	Low	Low
	24 - 28µg/m^3	More than 10	Low	Low	Low	Low	Low
		1 - 10	Low	Low	Low	Low	Low
	Less than 24µg/m^3	More than 10	Low	Low	Low	Low	Low
		1 - 10	Low	Low	Low	Low	Low
Low	-	More than 1	Low	Low	Low	Low	Low

10.35 Table 10.7 outlines the sensitivity of the area to ecological impacts.

Table 10.7: Construction Dust - Sensitivity of the Area to Ecological Impacts

Receptor Sensitivity	Distance from the Source (m)	
	Less than 20	Less than 50
High	High	Medium
Medium	Medium	Low
Low	Low	Low

10.36 The scale and nature of the construction works determine the magnitude of dust impacts arising from each activity. The relevant criteria are summarised in Table 10.8.

Table 10.8: Construction Dust - Magnitude of Emission

Magnitude	Activity	Criteria
Large	Demolition	• Total volume of building to be demolished greater than 50,000m^3 • Potentially dusty material (e.g. concrete) • On-site crushing and screening • Demolition activities more than 20m above ground level
	Earthworks	• Total site area greater than 10,000m^2 • Potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size) • More than 10 heavy earth moving vehicles active at any one time • Formation of bunds greater than 8m in height • More than 100,000 tonnes of material moved
	Construction	• Total building volume greater than 100,000m^3 • On site concrete batching • Sandblasting
	Trackout	• More than 50 Heavy Duty Vehicle (HDV) trips per day • Potentially dusty surface material (e.g. high clay content) • Unpaved road length greater than 100m
Medium	Demolition	• Total volume of building to be demolished between 20,000m^3 and 50,000m^3 • Potentially dusty construction material • Demolition activities 10m to 20m above ground level
	Earthworks	• Total site area 2,500m^2 to 10,000m^2 • Moderately dusty soil type (e.g. silt) • 5 to 10 heavy earth moving vehicles active at any one time • Formation of bunds 4m to 8m in height • Total material moved 20,000 tonnes to 100,000 tonnes
	Construction	• Total building volume 25,000m^3 to 100,000m^3 • Potentially dusty construction material (e.g. concrete) • On site concrete batching
	Trackout	• 10 to 50 HDV trips per day • Moderately dusty surface material (e.g. high clay content) • Unpaved road length 50m to 100m
Small	Demolition	• Total volume of building to be demolished less than 20,000m^3

Magnitude	Activity	Criteria
		• Construction material with low potential for dust release (e.g. metal cladding or timber) • Demolition activities less than 10m above ground and during wetter months
	Earthworks	• Total site area less than 2,500m^2 • Soil type with large grain size (e.g. sand) • Less than 5 heavy earth moving vehicles active at any one time • Formation of bunds less than 4m in height • Total material moved less than 20,000 tonnes • Earthworks during wetter months
	Construction	• Total building volume less than 25,000m^3 • Construction material with low potential for dust release (e.g. metal cladding or timber)
	Trackout	• Less than 10 HDV trips per day • Surface material with low potential for dust release • Unpaved road length less than 50m

10.37 The dust emission impact magnitude and the sensitivity of the area is combined to determine the impact significance. This is explained in the Significance Criteria Section.

Operational Phase

10.38 The proposed development has the potential to impact on existing air quality as a result of road traffic exhaust emissions, such as NO_2, PM_{10} and $PM_{2.5}$, associated with vehicles travelling to and from the site. Potential impacts were defined by predicting pollutant concentrations at sensitive locations using dispersion modelling for the following scenarios:

- 2019 - Verification;
- Opening year Do-Minimum (DM) (predicted traffic flows in 2023 should the proposed development not proceed);
- Opening year Do-Something (DS) (predicted traffic flows in 2023 should the proposed development be completed).

10.39 The DM scenario (i.e. without the proposed development) included baseline traffic data, inclusive of anticipated growth, for the relevant assessment year. The DS scenario (i.e. with the proposed development) included baseline traffic data, inclusive of anticipated growth for the relevant assessment year, in addition to predicted traffic associated with the operation of the proposed development.

10.40 For the purpose of the assessment traffic data for 2023 was utilised as the proposed development opening year. Air quality is predicted to improve in the future. However, in order to provide a robust assessment, emission factors for 2019 were utilised within the dispersion model. The use of 2023 traffic data and 2019 emission factors is considered to provide a worst-case scenario and therefore the predicted pollution concentrations are likely to overestimate actual levels during the operation of the proposed development.

10.41 Reference should be made to **Appendix 10.1** for assessment input data and details of the verification process.

10.42 Locations sensitive to potential changes in off-site pollutant concentrations were identified within 200m of the highway network in accordance with the guidance provided within the DMRB (Highways England, 2019) on the likely limits of pollutant dispersion from road sources. The criteria provided within DEFRA guidance (DEFRA, 2018) on where the AQOs apply, as summarised in Table 10.3, was utilised to determine worst-case receptor positions in the vicinity of links likely to be affected by changes in traffic flows as a result of the proposed development.

10.43 The sensitivity of receptors to potential changes in pollutant concentrations as a result of road vehicle exhaust emissions is outlined in Table 10.9. It should be noted that these are based on the values provided within the IAQM guidance (IAQM, 2017) with additional descriptors in ensure consistency throughout the ES.

Table 10.9: Operational Phase Receptor Sensitivity

Receptor Sensitivity	Pollutant Concentration at Receptor in Assessment Year
Very High	110% or more of AQO
High	103 - 109% of AQO
Medium	95 - 102% of AQO
Low	76 - 94% of AQO
Very Low	75% or less of AQO

10.44 The magnitude of predicted air quality impacts was calculated based on the predicted concentration change between DM and DS scenarios as a proportion of the AQO. This is outlined in Table 10.10.

Table 10.10: Operational Phase Magnitude of Impact

Predicted Concentration Change as a Proportion of AQO (%)	Magnitude of Impact
0	Negligible
1	Very Minor
2 - 5	Minor
6 - 10	Moderate

Predicted Concentration Change as a Proportion of AQO (%)	Magnitude of Impact
More than 10	Major

10.45 It should be noted that the categories in Table 10.10 are intended to be used by rounding the change in percentage pollutant concentration to whole numbers.

Significance Criteria

10.46 The significance of potential effects was determined by integrating the assessments of sensitivity and impact magnitude in a reasoned way. This is described separately for the construction and operational phase impacts in the following Sections.

Construction Phase

10.47 The dust emission magnitude and the sensitivity of the area were combined to determine the significance of the unmitigated effects.

10.48 Table 10.11 outlines the effect significance from demolition activities.

Table 10.11: Construction Dust - Effect Significance from Demolition Activities

Receptor Sensitivity	Dust Emissions Magnitude		
	Large	Medium	Small
High	Major	Moderate	Moderate
Medium	Major	Moderate	Minor
Low	Moderate	Minor	Negligible

10.49 Table 10.12 outlines the effect significance from earthworks and construction activities.

Table 10.12: Construction Dust - Effect Significance from Earthworks and Construction Activities

Receptor Sensitivity	Dust Emissions Magnitude		
	Large	Medium	Small
High	Major	Moderate	Minor
Medium	Moderate	Moderate	Minor
Low	Minor	Minor	Negligible

10.50 Table 10.13 outlines the effect significance from trackout.

Table 10.13: Construction Dust - Effect Significance from Trackout Activities

Receptor Sensitivity	Dust Emissions Magnitude		
	Large	Medium	Small
High	Major	Moderate	Minor
Medium	Moderate	Minor	Negligible
Low	Minor	Minor	Negligible

10.51 It should be noted that all construction dust impacts are classified as adverse as they relate to a deterioration in baseline air quality.

10.52 Site specific mitigation measures were identified from the IAQM guidance (IAQM, 2016) to reduce potential dust impacts based upon the predicted effect significance. For sites with **negligible** effects, mitigation measures beyond those required by legislation are not required. However, additional controls may be applied as part of good practice.

10.53 The significance of residual impacts was determined based on the dust effect significance and appropriate mitigation measures. 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 **negligible**. This is regarded as **not significant** with respect to the Town and Country Planning (Environmental Impact Assessment) Regulations (UK Government, 2017).

Operational Phase

10.54 The significance of operational phase road vehicle exhaust emissions effects was determined through the interaction between the magnitude of impact and sensitivity of the receptor, as outlined in Table 10.14.

Table 10.14: Operational Phase Road Vehicle Exhaust Emissions - Effect Significance

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

Magnitude	Sensitivity				
	Very High	High	Medium	Low	Very Low
		Beneficial	Beneficial		
Very Minor	Moderate Adverse/ Beneficial	Moderate Adverse/ Beneficial	Minor Adverse/ Beneficial	Negligible Adverse/ Beneficial	Negligible
Negligible	Negligible	Negligible	Negligible	Negligible	Negligible

10.55 An adverse impact would be a deterioration in baseline air quality, whilst a beneficial impact would be an improvement.

10.56 Following the prediction of impacts at discrete receptor locations, the IAQM document (IAQM, 2017) provides guidance on determining the overall air quality impact significance of the operation of a development. The following factors are identified for consideration by the assessor:

- The existing and future air quality in the absence of the proposed development;
- The extent of current and future population exposure to the impacts; and,
- The influence and validity of any assumptions adopted when undertaken the prediction of impacts.

10.57 The IAQM guidance (IAQM, 2017) states that an assessment must reach a conclusion on the likely significance of the predicted impact. Where the overall effect is **moderate** or **major**, the effect is likely to be considered **significant** in regards the EIA Regulations (UK Government, 2017), whilst if the impact is **minor** or **negligible**, the impact is likely to be considered **not significant** in regards the EIA Regulations (UK Government, 2017).

Assumptions/Limitations

10.58 A number of air quality factors are likely to change in future years and therefore act as limitations to the assessment, these include:

- Background pollutant concentrations are predicted to decrease in future years as a result of Government policies and legislation to reduce pollutant emissions. However, there is current uncertainty over the level of likely decrease. As such, a worst-case assumption that air quality conditions do not improve in the future was adopted to ensure robust results; and,
- Road traffic exhaust emissions are predicted to decrease in future years with changes to the UK's vehicle fleet in line with Government legislation. However, similarly to background concentrations, there is current uncertainty over the level of likely decrease. As such, a worst-case assumption that emissions do not reduce in the future was adopted to ensure robust results.

10.59 A number of assumptions have been made in the undertaking of the assessment. These include the following:

- The meteorological data used for the assessment is representative of the conditions at the site;
- The background concentrations used for the assessment are representative of baseline annual mean pollutant concentrations at the site;
- The traffic data obtained for the purpose of the assessment is accurate;
- The road widths and speeds applied to traffic data are accurate;
- The emissions factors obtained from the Emission Factor Toolkit, as described in Appendix 10.1 and used in the assessment of operational phase road traffic exhaust emissions, are representative of vehicle emissions;
- The monitoring data used in the assessment was accurate;
- The total building volume will be between 25,000m^3 and 100,000m^3; and,
- The unpaved length of roads on-site during the construction phase will be less than 50m.

10.60 The above assumptions are similar to those required for any project of this nature and the adoption of worst-case parameters where necessary has ensured the assessment results can be considered sufficiently robust.

Consultation

10.61 A formal scoping report was prepared and a scoping opinion provided to MCC in March 2020. The scoping exercise identified several study areas which have the potential to generate significant environmental effects, including air quality. The formal scoping exercise was supplemented by consultation with Rebecca Twigg-Purcell, Environmental Protection Neighbourhood Officer at MCC, in order to agree the specific assessment methodology. This is summarised in Table 10.15.

Table 10.15: Summary of Consultation Responses

Consultee	Date and Time	Comments	Actions
MCC	13th March 20202	Potential construction effects should consider any impacts on air quality from the use of plant and equipment together with the impact from emissions from construction vehicles and construction workers vehicles in and around the development site The likely impacts of air quality on climate change require consideration within this chapter of the ES. This should include consideration of the extent that the Proposed Development will contribute to greenhouse gas	A qualitative construction dust assessment was undertaken in accordance with the Institute of Air Quality Management (IAQM) document 'Guidance on the Assessment of Dust from Demolition and Construction V1.1'. In regard to the consideration of construction vehicles, it is considered unlikely that vehicle exhaust emissions from on-site plant and site traffic will have a significant impact on local air quality, given the size and nature of the proposed development. As such, this was not considered further within the

Consultee	Date and Time	Comments	Actions
		emissions, either through vehicles accessing the development during construction and the operation of the development, through to the wider operations of the development and running of the new homes. Impacts on air quality should also be considered in the context of the broader Northern Gateway proposals	assessment The impacts on climate change as a result of emissions from the proposed development during the construction and operational phases are detailed in Chapter 14: Climate Change
MCC	17th March 2020	The proposed methodology for the air quality assessment is acceptable. Due to the size and nature of the scheme, Good Practice Design Principles as detailed within the Land-Use Planning & Development Control: Planning for Air Quality (IAQM, 2017) document should be considered	A number of measures have been included within the scheme in accordance with the requirements of the IAQM document 'Land-Use Planning & Development Control: Planning for Air Quality' (IAQM, 2017) to encourage the use of sustainable transport modes, manage vehicle flow and reduce pollution around the site

Baseline Conditions

Introduction

10.62 Existing air quality conditions in the vicinity of the proposed development were identified in order to provide a baseline for assessment. These are detailed in the following sections.

Local Air Quality Management

10.63 As required by the Environment Act, MCC has undertaken Review and Assessment of air quality within their area of jurisdiction. This process has indicated that annual mean concentrations of NO_2 are above the AQO within the city. As such, a number of roads within Manchester have been included within the Greater Manchester Combined Authority (GMCA) AQMA. This is described as follows:

> *"This is the part of the Greater Manchester Combined Authority AQMA located within the Manchester City Council area."*

10.64 The south-western portion of the proposed development along Rochdale Road is located within the AQMA. As such, there is the potential for emissions associated with the proposals to cause air quality effects within this sensitive area. This has been considered throughout the assessment.

10.65 MCC has concluded that concentrations of all other pollutants considered within the AQS are currently below the relevant AQOs. As such, no further AQMAs have been designated.

Background Concentrations

10.66 Predictions of background pollutant concentrations on a 1km by 1km grid basis have been produced by DEFRA for the entire UK to assist LAs in their Review and Assessment of air quality. The proposed development is located in grid square National Grid Reference (NGR): 385500, 400500. Data for this location was downloaded from the DEFRA website (DEFRA, 2020) for the purpose of the assessment and is summarised in Table 10.16.

Table 10.16: Background Pollutant Concentration Predictions

Pollutant	Predicted Background Pollutant Concentrations (µg/m^3)		
	2019	2020	2023
NO_2	19.32	18.35	16.42
PM_{10}	12.72	12.47	12.18
$PM_{2.5}$	8.40	8.23	8.01

10.67 As shown in Table 10.16, predicted background NO_2, PM_{10} and $PM_{2.5}$ concentrations are below the relevant AQOs and AQTV at the site.

Local Air Quality Monitoring Data

10.68 Monitoring of pollutant concentrations is undertaken by MCC throughout their area of jurisdiction. Recent results from the closest survey position to the site is shown in Table 10.17.

Table 10.17: Monitoring Results

Monitoring Site		Monitored NO_2 Concentrations (µg/m^3)		
		2017	2018	2019
36	Rochdale Road	34.0	33.1	31.7

10.69 As shown in Table 10.17, annual mean NO_2 concentrations were below the relevant AQO at the 36 - Rochdale Road monitoring location in recent years. Reference should be made to **Figure 10.1** for a map of the survey position.

10.70 Monitoring of PM_{10} and $PM_{2.5}$ concentrations is not undertaken within the vicinity of the site.

Air Quality Receptors

10.71 A sensitive receptor is defined as any location which may be affected by changes in air quality as a result of a development. These have been defined for construction and operational phase impacts in the following Sections.

10.72 Due to the scale and nature of the proposed development, there will be a need to sequence construction over two main phases. These are summarised as follows and on drawing 1226-01-CIV-XX-ZZ-SK-0005:

- Parcel D and C together with apartment blocks A and B. Commercial floorspace is being delivered as part of apartment block A to ensure that the existing shop is relocated into the new development; and,
- Parcel B and A together with demolition of existing houses and construction of park (parcels E and F).

10.73 There is a potential for the demolition of the existing houses on site and construction of Parcel F of the park to occur after the construction of parcels A, B and E. This assessment has therefore assumed that the existing residential dwellings will be in place during the construction of each phase so to assess the worst-case scenario i.e. those existing receptors being in place during the construction of Parcels A-E.

Construction Phase Sensitive Receptors

10.74 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 site boundary. These are summarised in Table 10.18.

Table 10.18: Construction Dust - Demolition, Earthworks and Construction Dust Sensitive Receptors

Distance from Site Boundary (m)	Approximate Number of Human Receptors	Approximate Number of Ecological Receptors
Up to 20	More than 100	0
Up to 50	More than 100	0
Up to 100	More than 100	-
Up to 350	More than 100	-

10.75 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. These are summarised in

Table 10.19.

Table 10.19: Construction Dust - Trackout Dust Sensitive Receptors

Distance from Site Access Route (m)	Approximate Number of Human Receptors	Approximate Number of Ecological Receptors
Up to 20	More than 100	0
Up to 50	More than 100	0

10.76 A number of additional factors have been considered when determining the sensitivity of the surrounding area. These are summarised in Table 10.20.

Table 10.20: Additional Area Dust Sensitivity Factors

Guidance	Comment
Whether there is any history of dust generating activities in the area	The desk top study did not indicate any dust generating activities in the local area
The likelihood of concurrent dust generating activity on nearby sites	A review of the planning portal indicated consent has recently been granted for the following developments: • Erection of 22 two and three storey dwellings (Use Class C3a) with associated access, car parking, boundary treatment and landscaping, approximately 620m south of the site. Planning reference: 126467/FO/2020); and, • Erection of 22, two and three storey residential dwellings (C3a) with associated landscaping, car parking, boundary treatment and other associated works, approximately 690m south-west of the site. (Planning reference: 125927/FO/2020) Should the construction phases of the above developments and the proposed site overlap, it is possible there will be concurrent dust generation
Pre-existing screening between the source and the receptors	There is no significant screening around the boundary
Conclusions drawn from analysing local meteorological data which accurately represents the area and if relevant the season during which the works will take place	As shown in **Figure 10.2**, the predominant wind bearing at the site is from the south. As such, receptors to the north of the site are most likely to be affected by dust releases
Conclusions drawn from local topography	There are no significant topographical constraints to dust dispersion
Duration of the potential impact, as a receptor may become more sensitive over time	Development construction is estimated to take approximately two years. It is considered unlikely that receptor sensitivity would change significantly over this time period

Guidance	Comment
Any known specific receptor sensitivities which go beyond the classifications given in the document	No specific receptor sensitivities identified during the baseline assessment

10.77 Based on the criteria shown in Table 10.20, the sensitivity of the receiving environment to potential dust soiling and health impacts is classified as **high**. This was because identified receptors included residential properties.

10.78 The sensitivity of the receiving environment to specific dust impacts is shown in Table 10.21.

Table 10.21: Sensitivity of the Surrounding Areas to Specific Dust Impacts

Potential Impact	Sensitivity of the Surrounding Area			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	High	High	High	High
Human Health	Medium	Medium	Medium	Medium

Operational Phase Sensitive Receptors

10.79 Receptors sensitive to potential road vehicle exhaust emission impacts were identified from a desk top study and are summarised in Table 10.22. It should be noted that the assessment has assumed the existing residential dwellings at the proposed site will be in place during the operational phase to provide an assessment of the worst-case scenario.

Table 10.22: Operational Phase Road Vehicle Exhaust Emissions Sensitive Receptor Locations

Receptor		NGR (m)		Distance from Site Boundary (m)
		X	Y	
R1	Residential - Collyhurst Street	385425.4	399987.7	70
R2	Residential - Thornton Street North	385554.3	400141.9	40
R3	Residential - Rochdale Road	385458.5	400221.5	30
R4	Residential - Rochdale Road	385493.2	400321.8	30
R5	Residential - Rochdale Road	385513.7	400440.5	45
R6	Residential - Rochdale Road	385535.9	400549.4	100

Receptor		NGR (m)		Distance from Site Boundary (m)
		X	Y	
R7	Residential - Topley Street	385514.0	400588.0	145
R8	Residential - Queens Road	385433.3	400658.0	240
R9	Educational Facility - Queens Road	385689.6	400656.5	225
R10	Residential - Queens Road	385723.2	400561.3	140
R11	Residential - Queens Road	385768.8	400468.1	70
R12	Residential - Queens Road	385814.9	400380.1	110
R13	Residential - Thornton Street North	385658.8	400329.1	5
R14	Residential - Thornton Street North	385761.7	400183.6	115
R15	Residential - Carslake Road	385767.8	400230.4	80
R16	Residential - Carslake Road	385848.5	400236.1	150
R17	Residential - Carslake Road	385828.9	400268.9	130
R18	Residential - Queens Road	385865.5	400262.0	170

10.80 Reference should be made to **Figure 10.3** for a graphical representation of operational phase road vehicle exhaust emission sensitive receptor locations.

Embedded Mitigation

Demolition and Construction

10.81 There is no proposed embedded mitigation included within the development for demolition and construction.

Completed Development

10.82 Several features have been included in the plans for the proposed development that will provide mitigation against air quality impacts during the operational phase. It is proposed to provide an Electric Vehicle (EV) charging point at each residential property as well as cycle storage for each house and apartment block. These measures are anticipated to promote the use of sustainable modes of transport and reduce road traffic exhaust emission impacts. The location of the proposed development also promotes sustainable travel due to the accessibility of bus and tram services, as well as pedestrian and cycle connections. Local amenities including health centres, education facilities and small retail stores have also been identified within approximately 1km of the site.

Potential Impacts

Demolition and Construction

10.83 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. Vehicles movements both on-site and on the local road network also have the potential to result in the re-suspension of dust from haul roads and highway surfaces.

10.84 The potential impacts at sensitive locations depends significantly on local meteorology during that undertaking of dust generating activities, with the most significant effects likely to occur during dry and windy conditions.

10.85 The desk-study undertaken to inform the baseline identified a number of sensitive receptors within 350m of the site boundary. As such, a detailed assessment of potential dust impacts has been undertaken.

10.86 Given the sequencing of construction is likely to take place in two phases, it was assumed that the existing residential properties will be in place during throughout construction to provide an assessment of the worst-case scenario.

10.87 It should be noted that predicted environmental impacts from construction phase activities are considered to be adverse but temporary in nature.

Demolition

10.88 Demolition will involve the clearance of specific buildings on site. It should be note that demolition of the existing houses on site may occur after the construction of parcels A, B and E. It is estimated that the building volume to be demolished is less than 20,000m^3. In accordance with the criteria outlined in Table 10.8, the magnitude of potential dust emissions from earthworks is therefore **small**.

10.89 Table 10.5 indicates the sensitivity of the area to dust soiling effects on people and property is **high**. In accordance with the criteria outlined in Table 10.11, the significance of unmitigated dust soiling effects as a results of demolition activities is predicted to be **moderate adverse,** which is considered to be **significant**.

10.90 Table 10.6 indicates the sensitivity of the area to human health impacts is **medium**. In accordance with the criteria outlined in Table 10.11, the significance of unmitigated effects at human health receptors as a result of demolition is predicted to be **minor adverse,** which is considered to be **not significant**.

Earthworks

10.91 Earthworks will primarily involve excavating material, haulage, tipping and stockpiling, as well as site levelling and landscaping. The site covers an area greater than 100,000m^2 and there may be the requirement for material

movement during certain operations. In accordance with the criteria outlined in Table 10.8, the magnitude of potential dust emissions from earthworks is therefore **large**.

10.92 Table 10.5 indicates the sensitivity of the area to dust soiling effects on people of property is **high**. In accordance with the criteria outlined in Table 10.12, the significance of unmitigated dust soiling effects as a results of earthworks is predicted to be **major adverse,** which is considered to be **significant**.

10.93 Table 10.6 indicates the sensitivity of the area to human health is **medium**. In accordance with the criteria outlined in Table 10.12, the significance of unmitigated effects at human health receptors as a result of earthworks is predicted to be **moderate adverse,** which is considered to be **significant**.

Construction

10.94 Based on the site layout designs, the new buildings are anticipated to have a total volume of between 25,000m^3 and 100,000m^3. In accordance with the criteria outlined in Table 10.8, the magnitude of potential dust emissions from construction is therefore **medium.**

10.95 Table 10.5 indicates the sensitivity of the area to dust soiling effects on people or property is **high**. In accordance with the criteria outlined in Table 10.12, the significance of unmitigated dust soiling effects as a results of construction activities is predicted to be **moderate adverse,** which is considered to be **significant**.

10.96 Table 10.6 indicates the sensitivity of the area to human health is **medium**. In accordance with the criteria outlined in Table 10.12, the significance of unmitigated effects at human health receptors as a result of construction is predicted to be **moderate adverse,** which is considered to be **significant**.

Trackout

10.97 Based on the site area, it is anticipated that the unpaved road length is likely to be less than 50m. In accordance with the criteria outlined in Table 10.8, the magnitude of potential dust emissions from trackout is therefore **small**.

10.98 Table 10.5 indicates the sensitivity of the area to dust soiling effects on people or property is **high**. In accordance with the criteria outlined in Table 10.13, the significance of unmitigated dust soiling effects as a result of trackout activities is predicted to be **minor adverse,** which is considered to be **not significant**.

10.99 Table 10.6 indicates the sensitivity of the area to human health is **medium**. In accordance with the criteria outlined in Table 10.13, the significance of unmitigated effects at human health receptors as a result of trackout is predicted to be **negligible,** which is considered to be **not significant**.

Summary of Dust Effects

10.100 A summary of the potential construction phase effect significance from each dust generating activity is provided in Table 10.23.

Table 10.23: Summary of Potential Unmitigated Effect Significance

Potential Impact	Potential Effect on the Surrounding Area			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	Moderate Adverse/Significant	Major Adverse/Significant	Moderate Adverse/Significant	Minor Adverse/Not Significant
Human Health	Minor Adverse/Not Significant	Moderate Adverse/Significant	Moderate Adverse/Significant	Negligible/Not Significant

Completed Development

10.101 Vehicle movements associated with the operation of the proposed development will generate exhaust emissions on the local and regional road networks. An assessment was therefore undertaken using dispersion modelling in order to quantify potential changes in pollutants concentrations at sensitive locations in the vicinity of the site.

10.102 For the purpose of the assessment, traffic data for 2023 was utilised as the opening year of the proposed development. Air quality is predicted to improve in the future. However, in order to provide a robust assessment, emission factors and background concentrations for 2019 were utilised within the dispersion model. The use of 2023 traffic data and 2019 emission factors is considered to provide a worst-case scenario and therefore predicted pollution concentrations are likely to overestimate actual levels during the operational of the proposed development. Reference should be made to **Appendix 10.1** for assessment inputs.

10.103 It should be noted that predicted environmental impacts from operational phase activities are considered to be adverse and permanent in nature.

Predicted Concentrations

10.104 Annual mean NO_2 concentrations were predicted at the sensitive receptor locations for the DM and DS scenarios. The results are summarised in Table 10.24.

Table 10.24: Predicted Annual Mean NO_2 Concentrations

Receptor		Predicted Annual Mean NO_2 Concentration ($\mu g/m^3$)		
		DM	DS	Change
R1	Residential - Collyhurst Street	24.41	24.42	0.01
R2	Residential - Thornton Street North	22.33	22.37	0.04
R3	Residential - Rochdale Road	27.21	27.23	0.02
R4	Residential - Rochdale Road	28.54	28.59	0.05
R5	Residential - Rochdale Road	26.77	26.80	0.03
R6	Residential - Rochdale Road	27.40	27.43	0.03
R7	Residential - Topley Street	26.76	26.78	0.02
R8	Residential - Queens Road	36.64	36.68	0.04
R9	Educational Facility - Queens Road	26.27	26.29	0.02
R10	Residential - Queens Road	33.87	33.92	0.05
R11	Residential - Queens Road	32.98	33.03	0.05
R12	Residential - Queens Road	32.92	32.98	0.06
R13	Residential - Thornton Street North	22.70	22.79	0.09
R14	Residential - Thornton Street North	22.07	22.11	0.04
R15	Residential - Carslake Road	22.71	22.86	0.15
R16	Residential - Carslake Road	26.60	26.67	0.07
R17	Residential - Carslake Road	26.55	26.74	0.19
R18	Residential - Queens Road	33.96	34.07	0.11

10.105 As shown in Table 10.24, predicted annual mean NO_2 concentrations were below the relevant AQO at all sensitive receptors in both the DM and DS scenarios.

10.106 Reference should be made to **Figure 10.10** for a graphical representation of annual mean NO_2 concentrations across the assessment area for the DS scenario.

10.107 Annual mean PM_{10} concentrations were predicted at the sensitive receptor locations for the DM and DS scenarios. The results are summarised in Table 10.25.

Table 10.25: Predicted Annual Mean PM_{10} Concentrations

Receptor		Predicted Annual Mean PM_{10} Concentration ($\mu g/m^3$)		
		DM	DS	Change
R1	Residential - Collyhurst Street	12.98	12.98	0.00
R2	Residential - Thornton Street North	12.60	12.61	0.01
R3	Residential - Rochdale Road	13.47	13.47	0.01
R4	Residential - Rochdale Road	13.71	13.72	0.01
R5	Residential - Rochdale Road	13.39	13.39	0.01
R6	Residential - Rochdale Road	13.48	13.49	0.01
R7	Residential - Topley Street	13.37	13.38	0.00
R8	Residential - Queens Road	15.45	15.46	0.01
R9	Educational Facility - Queens Road	13.31	13.31	0.00
R10	Residential - Queens Road	14.78	14.79	0.01
R11	Residential - Queens Road	14.62	14.63	0.01
R12	Residential - Queens Road	14.60	14.62	0.01
R13	Residential - Thornton Street North	12.66	12.68	0.02
R14	Residential - Thornton Street North	12.56	12.56	0.01
R15	Residential - Carslake Road	12.67	12.69	0.02
R16	Residential - Carslake Road	13.39	13.40	0.01
R17	Residential - Carslake Road	13.37	13.40	0.03
R18	Residential - Queens Road	14.82	14.84	0.02

10.108 As shown in Table 10.25, predicted annual mean PM_{10} concentrations were below the relevant AQO at all sensitive receptors in both the DM and DS scenarios.

10.109 Reference should be made to **Figure 10.11** for a graphical representation of annual mean PM_{10} concentrations across the assessment area for the DS scenario.

10.110 Annual mean $PM_{2.5}$ concentrations were predicted at the sensitive receptor locations for the DM and DS scenarios. The results are summarised in Table 10.26.

Table 10.26: Predicted Annual Mean $PM_{2.5}$ Concentrations

Receptor		Predicted Annual Mean $PM_{2.5}$ Concentration ($\mu g/m^3$)		
		DM	DS	Change
R1	Residential - Collyhurst Street	8.57	8.57	0.00
R2	Residential - Thornton Street North	8.35	8.35	0.00
R3	Residential - Rochdale Road	8.86	8.86	0.00
R4	Residential - Rochdale Road	9.00	9.00	0.00
R5	Residential - Rochdale Road	8.81	8.81	0.00
R6	Residential - Rochdale Road	8.87	8.87	0.00
R7	Residential - Topley Street	8.80	8.80	0.00
R8	Residential - Queens Road	10.01	10.02	0.01
R9	Educational Facility - Queens Road	8.76	8.76	0.00
R10	Residential - Queens Road	9.62	9.63	0.01
R11	Residential - Queens Road	9.53	9.54	0.01
R12	Residential - Queens Road	9.52	9.53	0.01
R13	Residential - Thornton Street North	8.38	8.39	0.01
R14	Residential - Thornton Street North	8.32	8.33	0.00
R15	Residential - Carslake Road	8.39	8.40	0.01
R16	Residential - Carslake Road	8.81	8.82	0.01
R17	Residential - Carslake Road	8.80	8.82	0.02
R18	Residential - Queens Road	9.65	9.66	0.01

10.111 As shown in Table 10.26, predicted annual mean $PM_{2.5}$ concentrations were significantly below the relevant AQTV at all sensitive receptors in both the DM and DS scenarios.

10.112 Reference should be made to **Figures 10.12** for a graphical representation of annual mean $PM_{2.5}$ concentrations across the assessment area for the DS scenario.

Effect Significance

10.113 Predicted effects on annual mean NO_2 concentrations at the sensitive receptor locations in are summarised in Table 10.27.

Table 10.27: Predicted Operational Phase Road Vehicle Exhaust Emissions Effect Significance - NO_2

Receptor		Sensitivity of Receptor	Magnitude of Impact	Effect Significance
R1	Residential - Collyhurst Street	Low	Negligible	Negligible
R2	Residential - Thornton Street North	Low	Negligible	Negligible
R3	Residential - Rochdale Road	Low	Negligible	Negligible
R4	Residential - Rochdale Road	Low	Negligible	Negligible
R5	Residential - Rochdale Road	Low	Negligible	Negligible
R6	Residential - Rochdale Road	Low	Negligible	Negligible
R7	Residential - Topley Street	Low	Negligible	Negligible
R8	Residential - Queens Road	High	Negligible	Negligible
R9	Educational Facility - Queens Road	Low	Negligible	Negligible
R10	Residential - Queens Road	Medium	Negligible	Negligible
R11	Residential - Queens Road	Medium	Negligible	Negligible
R12	Residential - Queens Road	Medium	Negligible	Negligible
R13	Residential - Thornton Street North	Low	Negligible	Negligible
R14	Residential - Thornton Street North	Low	Negligible	Negligible
R15	Residential - Carslake Road	Low	Negligible	Negligible
R16	Residential - Carslake Road	Low	Negligible	Negligible
R17	Residential - Carslake Road	Low	Negligible	Negligible
R18	Residential - Queens Road	Medium	Negligible	Negligible

10.114 As indicated in Table 10.27, impacts on annual mean NO_2 concentrations as a result of road vehicle exhaust emissions associated with the proposed development were predicted to be **negligible** at all receptors.

10.115 Predicted effects an annual mean PM_{10} concentrations at the sensitive receptor locations are summarised in Table 10.28.

Table 10.28: Predicted Operational Phase Road Vehicle Exhaust Emissions Effect Significance - PM_{10}

Receptor		Sensitivity of Receptor	Magnitude of Impact	Effect Significance
R1	Residential - Collyhurst Street	Low	Negligible	Negligible
R2	Residential - Thornton Street North	Low	Negligible	Negligible
R3	Residential - Rochdale Road	Low	Negligible	Negligible
R4	Residential - Rochdale Road	Low	Negligible	Negligible
R5	Residential - Rochdale Road	Low	Negligible	Negligible
R6	Residential - Rochdale Road	Low	Negligible	Negligible
R7	Residential - Topley Street	Low	Negligible	Negligible
R8	Residential - Queens Road	Low	Negligible	Negligible
R9	Educational Facility - Queens Road	Low	Negligible	Negligible
R10	Residential - Queens Road	Low	Negligible	Negligible
R11	Residential - Queens Road	Low	Negligible	Negligible
R12	Residential - Queens Road	Low	Negligible	Negligible
R13	Residential - Thornton Street North	Low	Negligible	Negligible
R14	Residential - Thornton Street North	Low	Negligible	Negligible
R15	Residential - Carslake Road	Low	Negligible	Negligible
R16	Residential - Carslake Road	Low	Negligible	Negligible
R17	Residential - Carslake Road	Low	Negligible	Negligible
R18	Residential - Queens Road	Low	Negligible	Negligible

10.116 As indicated in Table 10.28, impacts on annual mean PM_{10} concentrations as a result of road vehicle exhaust emissions associated with the proposed development were predicted to be **negligible** at all receptors

10.117 Predicted effects an annual mean $PM_{2.5}$ concentrations at the sensitive receptor locations are summarised in Table 10.29.

Table 10.29: Predicted Operational Phase Road Vehicle Exhaust Emissions Effect Significance - $PM_{2.5}$

Receptor		Sensitivity of Receptor	Magnitude of Impact	Effect Significance
R1	Residential - Collyhurst Street	Low	Negligible	Negligible
R2	Residential - Thornton Street North	Low	Negligible	Negligible
R3	Residential - Rochdale Road	Low	Negligible	Negligible
R4	Residential - Rochdale Road	Low	Negligible	Negligible
R5	Residential - Rochdale Road	Low	Negligible	Negligible
R6	Residential - Rochdale Road	Low	Negligible	Negligible
R7	Residential - Topley Street	Low	Negligible	Negligible
R8	Residential - Queens Road	Low	Negligible	Negligible
R9	Educational Facility - Queens Road	Low	Negligible	Negligible
R10	Residential - Queens Road	Low	Negligible	Negligible
R11	Residential - Queens Road	Low	Negligible	Negligible
R12	Residential - Queens Road	Low	Negligible	Negligible
R13	Residential - Thornton Street North	Low	Negligible	Negligible
R14	Residential - Thornton Street North	Low	Negligible	Negligible
R15	Residential - Carslake Road	Low	Negligible	Negligible
R16	Residential - Carslake Road	Low	Negligible	Negligible
R17	Residential - Carslake Road	Low	Negligible	Negligible
R18	Residential - Queens Road	Low	Negligible	Negligible

10.118 As indicated in Table 10.29, impacts on annual mean $PM_{2.5}$ concentrations as a result of road vehicle exhaust emissions associated with the proposed development were predicted to be **negligible** at all receptors

Overall Impact Significance

10.119 The overall significance of operational phase road traffic emission effects was determined as **negligible**, which is considered to be **not significant**. This was based on the overall predicted impacts at discrete receptor locations and the considerations outlined previously. Further justification is provided in Table 10.30.

Table 10.30: Operational Phase Road Vehicle Exhaust Emissions - Overall Effect Significance

Guidance	Comment
The existing and future air quality in the absence of the development	Predicted annual mean NO_2, PM_{10} and $PM_{2.5}$ concentrations were below the relevant AQOs and AQTV at all receptor locations in the absence of the proposed development It is considered unlikely that future air quality conditions will change significantly in the absence of the proposed development based on the relatively established nature of the area
The extent of current and future population exposure to the impacts	The proposed development is not predicted to affect the population exposed to exceedences of the AQOs
The influence and validity of any assumptions adopted when undertaking the prediction of impacts	The assessment assumed that vehicle exhaust emission rates and background pollutant levels will not reduce in future years. This provides worst-case results when comparted with DEFRA and Highways England methods Due to the adopted assumptions it is considered the presented results are sufficiently robust for an assessment of this nature

Mitigation Measures

Demolition and Construction

10.120 Due to the size and nature of the proposed development a Construction Environmental Management Plan (CEMP) should be produced to control potential impacts during the construction phase. The mitigation measures outlined in Table 10.31 should be included within the CEMP to mitigate fugitive dust emissions during construction. These are based on the advice provided within IAQM guidance (IAQM, 2016) and are therefore considered suitable for the site. It should be noted that these measures will also provide adequate control of potential impacts on early phases of the proposed development that may be finished prior to construction of the overall site.

Table 10.31: Fugitive Construction Dust Emissions Mitigation Measures

Guidance	Comment
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 site manager. Display the head or regional office contact information. Develop and implement a Dust Management Plan (DMP) as part of the CEMP, which may include measures to control other emissions, approved by the LA.
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 measure taken. Make the complaints log available to the LA upon request. 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 visual inspections to monitor dust, record inspection results, and make the log available to the LA upon request. Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the LA upon request. Increase the frequency of site inspections when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.
Site Preparation	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 specific operations where there is a high potential for dust production and they are active for an extensive 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. Cover, seed or fence stockpiles to prevent wind whipping.
Operating vehicle/machinery and sustainable travel	Ensure all vehicles switch off engines when stationary - no idling vehicles. Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where practicable. Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.
Operations	Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques. Ensure an adequate water supply on the site for effective dust suppression, using non-potable water where possible and appropriate.

Guidance	Comment
	Use enclosed chutes and conveyors and covered skips. Minimise drop heights and use fine water sprays wherever appropriate. Ensure equipment is available to clean any dry spillages, and clean up spillages as soon as reasonably practicable using wet cleaning methods.
Waste Management	Avoid bonfires and burning of waste materials.
Demolition	Ensure effective waster suppression is used during demolition operations. Avoid explosive blasting, using appropriate manual or mechanical alternatives. Bag and remove any biological debris or damp down such material before demolition.
Earthworks	Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable. Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable. Only remove the cover in small areas during work and not all at once.
Construction	Avoid scabbing (roughening of concrete surfaces) if possible. Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out.
Trackout	Use water-assisted dust sweeper on access and local roads, if required. Avoid dry sweeping of large areas. Ensure vehicles entering and leaving site are covered to prevent escape of materials. Implement a wheel washing system, if required.

Completed Development

10.121 The IAQM have released a position statement 'Mitigation of Development Air Quality Impacts' (IAQM, 2018) which provides guidance on determining appropriate mitigation measures for new development. This states:

"'The IAQM position is that the appropriate mitigation solution for the operational air quality impact of any given general development scheme should be principle-led rather than specified by detailed prescription."

10.122 The following hierarchy of principles is provided for use when determining an appropriate level of mitigation:

- Prevent or avoid;
- Reduction and minimisation; and,
- Off-setting.

10.123 The air quality assessment has shown that impacts associated with additional vehicle emissions produced by the proposed development are predicted to be **negligible** at all receptors. As such, mitigation to reduce potential

impacts is not considered necessary. However, a number of measures have been included within the scheme in accordance with the requirements of the IAQM 'Land-Use Planning & Development Control: Planning for Air Quality' guidance (IAQM, 2017) to encourage the use of sustainable transport modes, manage vehicle flow and reduce pollution around the site. Table 10.32 describes the good practice principles detailed in the IAQM guidance (IAQM, 2017) along with how each has been addressed with regards to the proposals.

Table 10.32: Good Practice Design Principles

Phase	Principle	Action
Design Phase	New developments should not contravene the Council's Air Quality Action Plan (GMCA, 2016) or render any of the measures unworkable	It is confirmed that the proposals will not contravene MCC's Air Quality Action Plan, or render any of the measures unworkable
	Wherever possible, new developments should not create a new "street canyon", or a building configuration that inhibits effective pollution dispersion	The proposals will not lead to the generation of a street canyon
	Delivering sustainable development should be the key theme of any application	The proposals have been designed to encourage sustainable behaviours, such as active and public transport, due to its close proximity to local bus routes and amenities
	New development should be designed to minimise public exposure to pollution sources, e.g. by locating habitable rooms away from busy roads, or directing combustion generated pollutants through or chimney stacks	The results of the dispersion modelling indicated that residents are not predicted to be exposed to exceedences of the relevant AQOs and AQTV with the development in place
Operational Phase	The provision of at least 1 Electric Vehicle (EV) "rapid charge" point per 10 residential dwellings and/or 1,000m^2 of commercial floor space. Where on-site parking is provided for residential dwellings, EV charging points for each parking space should be made	The following EV charging point provision has been confirmed: • 100% Infrastructure to the houses; • 50% EV charging points for provided in the base build to the houses; and • 10% EV charging points provided in the base build to the apartments.
	Where development generates significant additional traffic, provision of a detailed Travel Plan (with provision to measure its implementation and effect) which sets out measures to encourage sustainable means of transport (public, cycling and walking) via subsidised or free-ticketing, improved links to bus stops, improved infrastructure and layouts to improve accessibility and safety	A Travel Plan, produced by Civic Engineers, will be submitted with the planning application
	All gas-fired boilers to meet a minimum standard of <40mgNO_x/kWh. All gas-fired CHP plant to meet a minimum	Any boilers to be included in the development will be provisioned in accordance with the relevant requirements

Phase	Principle	Action
	emissions standard of: • Spark ignition engine: 250mgNO_x/Nm^3; • Compression ignition engine: 400mgNO_x/Nm^3; • Gas turbine: 50mgNO_x/Nm^3. A presumption should be to use natural gas-fired installations. Where biomass is proposed within an urban area it is to meet minimum emissions standards of: Solid biomass boiler: 275mgNOx/Nm^3 and 25mgPM/Nm^3	

10.124 Implementation of the above methods should encourage site access by sustainable transport measures and further minimise air quality impacts throughout the operational phase.

Residual Impacts

10.125 Residual effects are summarised in Table 10.33.

Table 10.33: Residential Effects Summary

Description of Effect	Potential impact including significance	Mitigation	Residual Effect including significance
Construction Phase			
Fugitive dust emissions associated with demolition, earthworks, construction and trackout activities	Demolition: **Moderate adverse** in the short term at local level	Suitable mitigation measures identified in Table 10.31 would be detailed in the CEMP to control effects to an acceptable level	**Negligible and not significant**
	Earthworks: **Major adverse** in the short term at local level		
	Construction: **Moderate adverse** in the short term at local level		

Description of Effect	Potential impact including significance	Mitigation	Residual Effect including significance
	Trackout: **Minor adverse** in the short term at local level		
Operational Phase			
Road traffic vehicles exhaust emissions associated with vehicles travelling to and from the site	**Negligible** in the long term at local level and **not significant**	Further mitigation to reduce potential impacts is not considered necessary	**Negligible** and **not significant**

Assessment of In-Combination Effects

Approach

10.126 There is the potential for in-combination effects to occur as a result of development associated with the Northern Gateway Strategic Regeneration Framework (NGSRF). As such, the potential for cumulative impacts has been considered for both the construction and operational phases.

Potential Impacts

Construction Cumulative Impacts

10.127 Should construction phase activities of developments associated with the NGSRF take place within 700m of the boundary it is possible that cumulative dust impacts may occur. However, as previously outlined, any fugitive dust emissions generated by the proposals will be controlled through the outlined mitigation measures. A similar level of control would also be expected for any other scheme associated with the NGSRF. Therefore, cumulative impacts are predicted to be **not significant** in accordance with the EIA Regulations (UK Government, 2017) and no further mitigation measures are required.

Completed Development

10.128 Once all developments associated with the NGSRF are operational, there is the potential for increased vehicles movements and associated exhaust emissions within the Northern Gateway and on the wider road network. As such, there is the potential for these developments to affect existing air quality. Modelling was therefore undertaken and the results documented in the Northern Gateway Technical Services Transport Evidence Report, published by Arup in January 2018.

10.129 It should be noted that where an increase in vehicle movements is likely, it is possible that there may be an impact on local air quality.

Mitigation Measures

Construction

10.130 It is predicted that in-combination impacts will not be significant during the construction phase providing any fugitive dust emissions generated are controlled through the measures outlined within the IAQM guidance (IAQM, 2016). Therefore, no further mitigations measures are required beyond those that have been specified in Table 10.31.

Completed Development

10.131 The Northern Gateway Technical Services Transport Evidence Report, published by Arup in January 2018 recommends improvements in public transport provision and infrastructure, cycle facilities and pedestrian walkways. Several features have been included in the plans for the proposed development that will provide mitigation against air quality impacts during the operational phase. These are detailed further in the Transport Chapter of this ES (see Chapter 9: Transport and Access) and the Travel Plan (see **Appendix 9.2**) produced by Civic Engineers.

Residual Impact

10.132 It is possible that there may be residual impacts following the implementation of the recommended measures. Given the magnitude of these impacts will depend on a number of factors including infrastructure provision, policy and funding as well as popularity of private car ownership. It is not possible to quantify the likely in-combination residual impacts at this stage, or comment on their magnitude.

10.133 It should be noted that if improvements such as the provision of sustainable transport modes and encouragement of sustainable behaviours are supported, it is likely that operational phase impacts will be less significant.

Conclusions

10.134 The proposed development has the potential to cause air quality impacts as a result of fugitive dust emissions during construction and road traffic exhaust emissions associated with vehicles travelling to and from the site during operation. As such, an assessment was undertaken in order to determine baseline conditions and assess potential effects as a result of the proposed development.

10.135 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 methodology (IAQM, 2016). Assuming good practice dust control measures are implemented, the residual effect of potential air

quality effects from dust generated by demolition, earthworks, construction and trackout activities was predicted to be **negligible**, which is considered to be **not significant**.

10.136 Potential impacts during the operational phase of the proposals may occur due to road traffic exhaust emissions associated with vehicles travelling to and from the site. Dispersion modelling was therefore undertaken in order to predict pollutant concentrations at sensitive locations as a result of emissions from the local highway network both with and without the proposed development in place. Results were subsequently verified using local monitoring data.

10.137 Review of the dispersion modelling results indicated that effects on annual mean NO_2, PM_{10} and $PM_{2.5}$ concentrations as a result of traffic generated by the proposed development were classified as **negligible** at all receptor locations. Following consideration of the relevant factors, the overall significance of potential air quality effects was classified as **negligible**, which is considered to be **not significant**.

Other Information

References

Ministry of Housing, Communities & Local Government, UK Government (2019). NPPF.

Ministry of Housing, Communities & Local Government, UK Government (2019). NPPG.

MCC, 2012, Core Strategy.

UK Government, 1995. The Environment Act

DEFRA, 2007. Air Quality Strategy for England, Scotland, Wales and Northern Ireland.

UK Government, 2010. Air Quality Standards Regulations.

DEFRA, 2018. Local Air Quality Management (TG16).

UK Government, 1990. The Environmental Protection Act 1990.

UK Government, 2017. Town and Country Planning (Environmental Impact Assessment) Regulations.

UK Government, 2016. Environmental Permitting (England and Wales) Regulations.

IAQM, 2016. Guidance on the Assessment of Dust from Demolition and Construction.

IAQM, 2017. Land-Use Planning & Development Control: Planning for Air Quality.

Ordinance Survey Open Map, 2016.

Highways Agency, 2019. DMRB Volume 11, Section 3, Part 1, LA 105.

DEFRA, n.d. Background Mapping Data for Local Authorities - 2017

IAQM, 2018. Mitigation of Development Air Quality Impacts V1.1.

GMCA, 2016, Greater Manchester Air Quality Action Plan (GMAQAP) 2016-2021.

11. Noise and Vibration

Introduction

11.1 This chapter assesses the impact of the proposed development on Noise and Vibration. It considers the potential effects of noise and vibration impacts associated with the construction and operation of the proposed development as well as assessing the suitability of the site for residential development.

11.2 The chapter describes the methods used to assess the baseline conditions currently existing at the site and surroundings, the potential direct and indirect impacts of the development arising from noise and vibration, the mitigation measures required to prevent, reduce, or offset the impacts and the residual impacts. It has been written by Sandy Brown.

Planning Policy Context

National Planning Policy

Noise Policy Statement for England (NPSE)

11.3 NSPE is to provide clarity regarding current policies and practices to enable noise management decisions to be made within the wider context, at the most appropriate level, in a cost-effective manner and in a timely fashion.

11.4 The NPPF sets out the Government's planning policies for England and how these should be applied. It provides a framework within which locally-prepared plans for housing and other development can be produced. Paragraph 170 of the NPPF (February 2019) states that:

> *"Planning policies and decisions should contribute to and enhance the natural and local environment by:*
>
> *[…]*
>
> *e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans."*

11.5 It also makes the following references to noise at paragraph 180:

> *"Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions*

and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

a) mitigate and reduce to a minimum potential adverse impact resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;

b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason […]"

Local Planning Policy

11.6 Manchester City Council (MCC) planning and noise technical guidance December 2015 references Manchester Core Strategy 2012. Manchester Core Strategy (2012) Policy DM1 states that all development should have regards to the following specific issues for which more detailed guidance may be given within supplementary planning document:

- Effects on amenity including privacy, light, noise, vibration, air quality, odours, litter, which would be sensitive to the existing environmental conditions such as noise.
- Manchester City Council, GD03 Public protection information for developers, Section 3, sets out planning conditions in relation to noise egress from plant associated with developments:

'Before the development hereby approved is occupied, the building, together with any externally mounted ancillary equipment, shall be acoustically insulated in accordance with the scheme submitted to and approved in writing by the City Council as local planning authority in order to secure a reduction in the level of noise emanating from the site/property. Externally mounted ancillary plant, equipment and servicing shall be acoustically treated in accordance with a scheme designed so as to achieve a noise level of 5dB below the existing background (LA90) in each octave band at the nearest noise sensitive location.'

11.7 MCC's guidance document 'GD03 Public Protection Information for Developers', Section 3, sets planning conditions in relation to internal noise levels for individual developments. These are broadly in line with BS 8233 guidance.

11.8 MCC's planning and noise technical guidance (December 2015) also provides guidance on entertainment noise, which could result from the commercial units proposed as part of the development. This guidance states:

'Music noise levels in the 63 Hz and 125 Hz octave centre frequency bands (L_{eq}) should be controlled so as not to exceed (in habitable rooms) 47 dB and 41 dB (L_{eq}), respectively'.

11.9 In addition to the above, for units which are structurally detached from other building uses it should demonstrate that music noise from the proposal will not be audible in nearby residential dwellings, assuming that the residential dwellings in question have their windows open. The criterion is noted as:

'Entertainment noise (L_{Aeq}) should be controlled to 10 dB below the background noise level (L_{A90}) without the entertainment noise present, in each octave band at the nearest noise sensitive location'

Other Relevant Policy, Standards and Guidance

BS 4142:2014+A1:2019 – Methods for rating and assessing industrial and commercial sound

11.10 BS 4142 provides a method for assessing the likelihood of complaints due to noise emissions. The noise level resulting from emissions is measured or predicted at a distance of one metre from the façade of the nearest noise sensitive premises. The emission noise level is compared to the existing background noise level in the area, as determined by a noise survey, over the proposed operational hours. While written for industrial noise, the method used in the standard is often a useful guidance rating method for other types of noise.

BS 4866:2010 Mechanical vibration and shock. Vibration of fixed structures. Guidelines for the measurement of vibrations and evaluation of their effects on structures

11.11 BS 4866 provides the principles for carrying out vibration measurements the processing of vibration data with regards to evaluating vibration effects on structures.

BS 5228-1&2:2009+A1:2014 – Noise and vibration control on construction and open sites

11.12 BS 5228 refers to the need for the protection against noise and vibration of persons living and working in the cavity of, and those working on, construction and open sites. It recommends procedures for noise and vibration control in respect of construction operations and aims to assist architects, contractors and site operatives, designers, developers, engineers, local authority environmental health officers and planners.

BS 6472-1:2008 – Guide to evaluation of human exposure to vibration in buildings: Part 1 – Vibration sources other than blasting

11.13 BS 6472-1 provides guidance on the measurement and assessment of vibration levels affecting humans in buildings resulting from sources such as road and rail traffic or building services systems. The probability of adverse comment is assessed by considering the vibration dose value (VDV), which quantifies the total exposure to vibration over a specified period.

BS 7385-2:1993 – Evaluation and measurement for vibration in buildings

11.14 BS 7385-2 provides guidance on the measurement and assessment of the effects of vibration on buildings. Of particular relevance is Part 2: 'Guide to Damage Levels from Ground borne Vibration', which sets out the thresholds for vibration induced damage in a variety of building types.

BS 7445-1:2003 – Description and measurement of environmental noise

11.15 BS 7445-1 defines the basic quantities to be used for the description of noise in community environments and describes basic procedures for the determination of these quantities.

BS 8233:2014 – Guidance on sound insulation and noise reduction for buildings

11.16 BS 8233 recommends internal ambient noise levels for various types of room, based on achieving appropriate conditions for activities such as sleeping/resting or carrying out work requiring concentration.

World health Organisation 'Guidance for Community Noise', 1999

11.17 The World Health Organisation (WHO) document 'Guidelines for Community Noise' discusses the potential adverse health effects of noise. Recommended internal ambient noise levels for residences are given and applies to all forms of noise including environmental noise, neighbour noise and neighbourhood noise.

Calculation of Road Traffic Noise, Department of Transport 1988

11.18 This document sets out calculation methods for road traffic noise.

IEMA 'Guidelines for Noise Impact Assessment' 2014

11.19 IEMA 'Guidelines for Noise Impact Assessment' 2014 provides guidelines for noise impact assessment to provide specific support on how noise impact assessment fits within the EIA process.

DEFRA Noise from pubs and clubs report dated 2005

11.20 DEFRA Noise from pubs and clubs report dated 2005 provides guidance and methodology on assessing the impact of noise from pubs and clubs.

Professional Practice Guidance (ProPG): Planning and Noise (2017)

11.21 The Professional Practice Guidance (ProPG) on Planning and Noise provides practitioners with guidance on a recommended approach to the management of noise within the planning system in England.

National Planning Practice Guidance (NPPG) for Noise (2014)

11.22 NPPG provides guidance on assessing noise generated from a development, the impact the future noise climate will have on the development and guidance on good acoustic design.

The Highways Agency (2011) Design Manual for Roads and Bridges (DMRB) Volume 11, Part 3, Section 7.

11.23 DMRB lists by discipline and asset lifecycle, an index of the documents in the DMRB, their legacy decimal references and date of issue.

Approach

11.24 Environmental noise and vibration surveys have previously been undertaken at the site in order to ascertain the existing noise and vibration levels experienced at the nearby receptors. The surveys have been used as a basis

for setting limiting noise emissions criteria for sources associated with the proposed development, primarily for new building services plant, as well as to assess the impact of construction noise and traffic noise on nearby receptors.

11.25 The measurement locations and methods are discussed in the following sections.

11.26 The proposed layout of the development is shown in **Figure 11.1**.



Figure 11.1: Proposed layout (Buttress drawing 8871-BA-MP-00-DR-A-(04)706)

Noise Measurements

11.27 Attended noise sample measurements were undertaken at 6 locations around the site. These are indicated in **Figure 11.2** as location 'L1' to 'L6'. The site is highlighted in red.



Figure 11.2: Noise Monitoring Locations

11.28 The attended measurements were carried out on 18 December 2019 during the daytime and on 9 January 2020 during the night-time. All measurements were carried out over 5-minute periods.

11.29 Details of these measurements can be found in **Appendix 11.2**.

Vibration Measurements

11.30 Vibration measurements were undertaken at location 'L4' due to the levels of vibration at this location being considered representative of the proposed residential dwellings. These measurements were carried out on 18 December 2019 and on 20 January 2020.

11.31 Details of these measurements are presented in **Appendix 11.2**.

Site Preparation and Construction Assessment

11.32 The extent of the study area for the assessment is defined by the location of the sensitive receptors identified (see section 'Receptors and Sensitivity' of this ES chapter).

11.33 This section presents the methodology used to assess each type of noise and vibration impact, in terms of the application of relevant standards and guidance, along with the types of data and analyses carried out.

11.34 The assessment considers the following types of noise and vibration:

- Site enabling, demolition and construction noise – Airborne noise from machinery used during the site enabling, demolition and construction of the proposed development, and the works themselves (construction plant noise assumptions are presented in **Appendix 11.1**);
- Demolition and construction vibration – Ground-borne vibration from machinery used during the demolition and construction of the proposed development, and the works themselves;
- Demolition and construction traffic – Noise from construction vehicles used during the demolition and construction of the proposed development;
- Completed proposed development – Vibration affecting the future occupants of the proposed development;
- Completed proposed development – Road traffic noise affecting surrounding receptors;
- Completed proposed development – Building services noise egress affecting surrounding receptors; and
- Completed and proposed development – Entertainment noise egress affecting surrounding receptors from the commercial units.

Noise Sensitive Receptors

11.35 The surrounding area to the north site is predominantly a residential area. The site is highlighted in red in **Figure 11.3**.

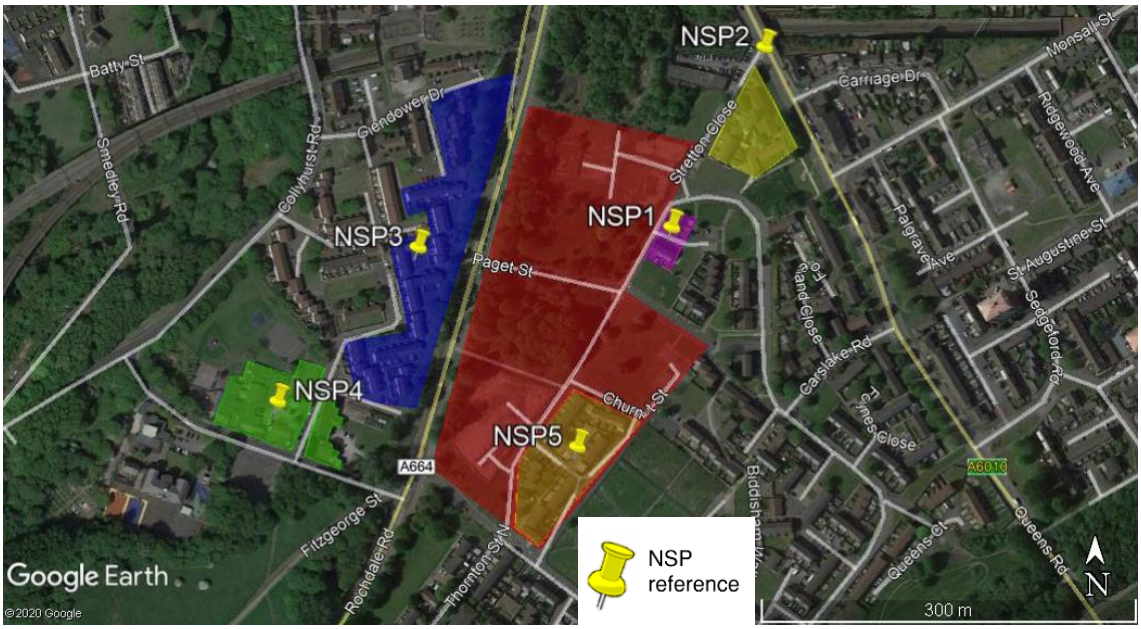


Figure 11.3: Noise Sensitive Receptors

11.36 The nearest residential receivers to the site are:

- NSP 1 - Residential dwellings along Thornton Street North, highlighted in pink in **Figure 11.3**, located approximately 10m from the site boundary to the north and within the site boundary to the south;
- NSP 2 - Residential dwellings along Stretton Close, highlighted in yellow in **Figure 11.3**, located approximately 30m from the site boundary;
- NSP 3 - Residential dwellings along Rochdale Road, highlighted in blue in **Figure 11.3**, located approximately 70m from the site boundary;
- NSP4 - The Church of the Saviour church and school (NSP 4), highlighted in green in **Figure 11.3** approximately 150m from the site boundary; and
- NSP5 - Existing residential dwellings along Thornton Street North. It is understood that once the development is completed, the NSP5 dwellings to the south of the site are to be demolished and will be redeveloped as the new Collyhurst Park.

Characterisation of Impact

Receptor sensitivity

11.37 The receptor sensitivities for the identification of potentially sensitive noise and vibration receptors on and surrounding the site are illustrated in Table 11.1.

Table 11.1: Receptor sensitivity

Sensitivity of receptor	Description
High	Residential dwellings (Class C3 use) and hotels (Class C1 use)
Medium	Offices (Class E), Health care (Class E) and educational and religious buildings (Class F1)
Low	Commercial and retail buildings (Class E)

Magnitude of Impact

Demolition and Construction Noise

11.38 BS 5228 provides practical information on construction noise and vibration reduction measures and promotes a 'Best Practicable Means' approach to control noise and vibration. The calculation method provided in BS 5228 is based on the number and types of equipment operating, their associated Sound Power Level (SWL), and the distance to receptors.

11.39 The magnitude of impact for assessing the effect of demolition and construction plant noise has been based on the guidance set out in BS 5228 and is presented in Table 11.2 These levels are external noise levels measured at the facade of the building.

11.40 These are based on the following average ambient daytime (07:00-20:00) noise levels for the noise sensitive premises:

- NSP1 – L_{Aeq} 55 dB;
- NSP2 – L_{Aeq} 55 dB;
- NSP3 – L_{Aeq} 70 dB;
- NSP4 – L_{Aeq} 70 dB; and
- NSP5 – L_{Aeq} 55 dB.

11.41 Based on the above, NSPS1, NSP2 and NSP5 would use Category A threshold values for construction noise significance, listed in Appendix E of BS 5228, whilst NSPS 3 and NSP4 would use Category C threshold values. The magnitude of impact criteria are provide in Table 11.2.

Table 11.2: Demolition and Construction Noise Magnitude of Impact

Magnitude of Impact	**Daytime Noise Level**	
	NSP1, NSP2 and NSP5	NSP3 and NSP4
Very low	Daytime noise levels less than or equal to L_{Aeq} 65 dB	Daytime noise levels less than or equal to L_{Aeq} 75 dB
Low	Daytime noise levels between L_{Aeq} 65 and 75 dB (up to and including)	Daytime noise levels between L_{Aeq} 75 and 85 dB (up to and including)
Medium	Daytime noise levels greater than L_{Aeq} 75 dB, for a total of less than 10 days in any 15 day period, or for a total of less than or equal to 40 days in any 6 month period.	Daytime noise levels greater than L_{Aeq} 85 dB, for a total of less than 10 days in any 15 day period, or for a total of less than or equal to 40 days in any 6 month period.
High	Daytime noise levels greater than L_{Aeq} 75 dB, for a total of more than 10 days in any 15 day period, or for a total of more than 40 days in any 6 month period.	Daytime noise levels greater than L_{Aeq} 85 dB, for a total of more than 10 days in any 15 day period, or for a total of more than 40 days in any 6 month period.

Demolition and Construction Vibration

11.42 BS 5228 provides guidance on the perception of vibration within occupied buildings. This provides a simple method of assessing annoyance associated with vibration.

11.43 Table 11.3 Details Peak Particle Velocity (PPV) levels and their potential effect on humans and provides a semantic scale for the description of demolition and construction vibration impacts on human receptors.

Table 11.3: Guidance on Human Effects of Peak Particle Velocity (PPV) Levels

Magnitude of Impact Category	Peak Particle Velocity Level	Description
Very Low	0.3 mm/s	Vibration might be just perceptible in the most sensitive situations for most vibration frequencies associated with construction. At lower frequencies, people are less sensitive to vibration.
Low	0.3 – 1.0 mm/s	Vibration might be just perceptible in residential environments.
Medium	1.0 – 3.0 mm/s	It is likely that vibration of this level in residential environments will cause complaint but can be tolerated if prior warning and explanation has been given to residents.
High	>3.0 mm/s	Vibration is likely to be intolerable for any more than a very brief exposure to this level.

11.44 In addition to the human effects, BS 5228 also provides vibration thresholds for cosmetic damage within buildings with reference to BS 7385. Levels of vibration required for cosmetic damage are far higher than those that would result in an unacceptable impact in terms of annoyance.

Completed Development

Building Services Plant Noise

11.45 Noise levels from building services plant associated with the proposed development would need to be controlled to ensure that it would not have an effect on nearby noise sensitive receptors relative to the background sound level.

11.46 The magnitude for the assessment of building services plant noise are set in accordance with BS 4142 and the Institute of Acoustics (IOA) / Institute of Environmental Management and Assessment (IEMA) 'Guidelines for Noise Impact Assessment, as identified in Table 11.4

Table 11.4: Description of the Magnitude of Impact Rating for Assessing the Likely and Residual Effects of Building Services Plant Noise

Magnitude of Impact	Increase in Noise Level (dBA)	Description
Very low	<1.0	Noise increase is unlikely to be discernible
Low	1.0 – 2.9	A slight increase in noise levels may be perceived in affected buildings and outdoor recreational areas
Medium	3.0 – 4.9	Increase in noise levels is likely to be noticeable in affected buildings and outdoor recreational areas
High	>5.0	Increase in noise levels is likely to be clearly perceptible and could have a significant effect on the continued use of a building

Operational Road Traffic Noise

11.47 The operational road traffic effects (of the proposed development on nearby noise sensitive receptors) can be categorised as noise associated with changes in road traffic movements around the site from the proposed development.

11.48 The magnitude of impact for the assessment of operational traffic effects are presented in Table 11.5. The different levels of the magnitude of impact are based on the IOA / IEMA 'Guidelines for Noise Impact Assessment.

Table 11.5: Description of the Magnitude of Impact Rating for Assessing the Likely Residual Effect of Increases in Road Traffic Noise

Magnitude of Impact	Increase in Noise Level (dBA)	Description
Very low	<1.0	Noise increase is unlikely to be discernible
Low	1.0 – 2.9	A slight increase in noise levels may be perceived in affected buildings and outdoor recreational areas
Medium	3.0 – 4.9	Increase in noise levels is likely to be noticeable in affected buildings and outdoor recreational areas
High	>5.0	Increase in noise levels is likely to be clearly perceptible and could have a significant effect on the continued use of a building

Site Suitability

Noise Ingress

11.49 Criteria for the noise ingress assessment will be set in accordance with the requirements of Manchester City Council.

11.50 The existing external noise levels, L_{Aeq}, at the site have been determined as part of the noise and vibration survey, and further details can be found in **Appendix 11.2**.

11.51 Criteria for assessing external noise ingress are set out in Manchester City Council criteria and are presented in Table 11.6. It is also stipulated that individual noise events should not normally exceed L_{Amax} 45 dB.

Table 11.6: Criteria for Assessing External Noise Ingress

	Internal noise limit, L_{Aeq} (dB)	
Internal space	Daytime (07:00 – 23:00)	Night-time (23:00 – 07:00)
Living rooms	35	35
Bedrooms	35	30

Vibration Ingress

11.52 Criteria for the tactile vibration assessment are set out in BS 6472 and the Acoustics & Noise Consultants (ANC) guidelines.

11.53 The existing vibration levels at the site, have been determined as part of the Noise and Vibration Survey, and further details can be found in **Appendix 11.2**.

11.54 Significance criteria for assessing the effects of tactile vibration are set out in BS 6472 are presented in Table 11.7.

Table 11.7: Significance Criteria for Assessing Tactile Vibration

Vibration dose values (m/s1.75) above which might result in various degrees of adverse comment within residential buildings			
Place and time	Low probability of adverse comment	Adverse comment possible	Adverse comment probable
Residential buildings 16 hr day	0.2 to 0.4	0.4 to 0.8	0.8 to 1.6
Residential building 8 hr night	0.1 to 0.2	0.2 to 0.4	0.4 to 0.8

11.55 Criteria for re-radiated noise levels as set out in a variety of documents are reviewed in the ANC guidelines. The criteria adopted vary, however a limit of L_{ASmax} 35 dB for re-radiated noise due to ground-borne vibration is typically deemed reasonable.

Defining the Effect

Effect Nature

11.56 All noise and vibration effects are considered either Adverse or Negligible. Whilst Beneficial noise effects can occur, this assumes an improvement from the Baseline environment and in practice is unlikely when new development is being introduced to the local environment.

11.57 An 'adverse effect' is anything that can cause a change in behaviour, attitude or changes the character of a place.

Effect Scale

11.58 Table 11.8 relates the scale of effects to the sensitivity of the receptor and the magnitude of the impact, based on the IOA / IEMA Guidelines.

Table 11.8: Scale of Effects

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

Geographic Extent of Effect

11.59 The geographic extent of the effects is identified. At a spatial level, 'site' or 'local' effects are those affecting the site and neighbouring receptors, while effects upon receptors beyond the vicinity of the site and its neighbours are at a 'district' level. Effects affecting Manchester are at a 'regional' level, whilst those which affect different parts of the country, are considered being at a 'national' level.

Effect duration

11.60 For the purposes of the ES, effects that are generated as a result of the demolition and construction works (i.e. those that last for this set period of time) are classed as 'temporary'; these may be further classified as either 'short term' or 'medium-term' effects depending on the duration of the demolition and construction works that generate the effect in question. Short term duration is typically considered to be a duration of a month or less.

11.61 Effects that result from the completed and operational proposed development are classed as 'permanent' or 'long-term' effects.

Categorising Likely Significant Effects

11.62 Table 11.9 categorises the likely scale of effect in context of what would be experienced by the receptors. This is based on the IOA/IEMA guidelines and the Planning Practice Guidelines (PPG).

11.63 Table 11.9 also relates the scale of effect with the Lowest Observed Adverse Effect Level (LOAEL) and Significant Observed Adverse Effect Level (SOAEL) rating.

Table 11.9: Classification of Noise Effects Relative to LOAEL and SOAEL

Scale of Effect (adverse)	Description of Effect	Exceeds SOAEL?	Exceeds LOAEL?	Scale of Effect is Significant?
Major	Disruptive, causes a material change in behaviour and/or attitude. Potential for sleep disturbance. Quality of life diminished due to change in character of the area.	Yes	Yes	Yes
Moderate	Intrusive, noise can be heard and causes small changes in behaviour and/or attitude. Potential for non-awakening sleep disturbance. Affects the character of an area such that there is a perceived change in the quality of life.	No	Yes	
Minor	Non-intrusive, can be heard but does not cause any change in behaviour or attitude. Can slightly affect the character of an area but not such that there is a perceived change in the quality of life.	No	No	No
Negligible	No discernible effect on the receptor	No	No	

Assumptions/Limitations

11.64 It is assumed that trade contractors will comply with all legislation relevant to the control of noise and vibration from demolition and construction works including:

11.65 The Control of Pollution Act (COPA) 1974 with particular reference to part III:

- The Environmental Protection Act 1990;
- The Control of Noise at Work Regulations 2005; and
- The Health and Safety at Work Act 1974.

11.66 The predictions of potential demolition and construction noise and vibration effects have assumed the following:

- Construction plant that is compliant with the sound and vibration levels published within BS 5288;
- The use of hand-held tools when used for a prolonged period will be adequately screened (the assessment does not account for noise from hand held tools); and
- Mobile plant will be moved across the site equally across the construction period.

11.67 It has been assumed that plant will be operating predominantly in the centre of the site, to be representative of average conditions throughout the programme and a reasonable worst case assessment (i.e. assuming high levels of numbers of individual plant and high percentage of operating time, not considering any potential mitigation measures being implemented). The absolute worst-case conditions would be when construction activity occurs close to the perimeter of the site (adjacent to a nearby receptor), but these would be limited in duration and not worst case for all receptors surrounding the development.

11.68 The reasoning for this is that the mobile plant items will move across the site (i.e. from one side of the site to the other throughout the day). The noise emissions from this would be the same as the average location of the plant item, which would be equivalent to being located predominantly in the centre of the site.

Baseline Conditions

Baseline Noise

11.69 The daytime (07:00-23:00) and night-time (23:00-07:00) noise levels measured at each of the noise sensitive receptors are summarised in Table 11.10. Further details can be found in **Appendix 11.2**.

Table 11.10: Background noise levels for noise sensitive receptors

Receptor	**Lowest background sound levels $L_{A90,5min}$ (dB)**	
	Daytime (07:00 to 23:00)	Night-time (23:00 to 07:00)
NSP1 - Residential dwellings along Thornton Street North	51	41
NSP2 - Residential dwellings along Stretton Close	53	40
NSP3 - Residential dwellings along Rochdale Road	58	47
NSP4 - Church of the Saviour church and	57	45

Receptor	Lowest background sound levels $L_{A90,5min}$ (dB)	
	Daytime (07:00 to 23:00)	Night-time (23:00 to 07:00)
school		
NSP5 - Residential dwellings along Thornton Street North	51	41

Baseline Vibration

11.70 Baseline vibration measurements have been undertaken. Details of these measurements can be found in **Appendix 11.2**.

Receptors and receptor sensitivity

Existing Receptors

11.71 The location of receptors taken into consideration in the impact assessment are shown in Figure 11.3 and listed with their sensitivity in Table 11:11.

Table 11:11: Existing receptors and receptor sensitivities

NSP ref.	Receptor	Category	Receptor sensitivity
NSP1	Residential dwellings along Thornton Street North	Residential (Class C3)	High
NSP2	Residential dwellings along Stretton Close	Residential (Class C3)	High
NSP3	Residential dwellings along Rochdale Road	Residential (Class C3)	High
NSP4	Church of the Saviour church and school	Educational and religious buildings (Class F1)	Medium
NSP5	Existing residential dwellings on the site (discussed further below)	Residential (Class C3)	High

11.72 It is anticipated that construction will start on site in 2021 and full site completion by 2023. Due to the scale and nature of the development, there will be a need to sequence the construction of the scheme. The sequencing of

construction is likely to take place in two main phases as follows and as shown on drawing 1226-01-CIV-XX-ZZ-SK-0005:

- Parcel D and C together with apartment blocks A and B. Commercial floorspace is being delivered as part of apartment block A to ensure that the existing shop is relocated into the new development; and
- Parcel B and A together with demolition of existing houses and construction of park (parcels E and F).

11.73 There is a potential for the demolition of the existing houses on site and construction of Parcel F of the park to occur after the construction of parcels A, B and E.

11.74 This assessment has assumed that the existing residential dwellings are in place during construction of each phase so to assess the worst-case scenario i.e. those existing receptors being in place during the construction of Parcels A-E.

Introduced Receptors

11.75 Introduced receptors will include occupants of the completed proposed residential development. These will be high sensitivity receptors.

Embedded Mitigation

Demolition and Construction

11.76 The embedded mitigation within the demolition and construction phases includes the use of a specific piling method, 'continuous flight auger piling', which is a form of embedded mitigation as it produces significantly lower vibration levels than typical bored piling.

11.77 No other forms of embedded mitigation are proposed.

Potential effects

Demolition and Construction

11.78 A summary of the predicted noise levels during the demolition and construction works is presented Table 11.12.

11.79 The noise levels presented are the maximum predicted at each building (receptor) identified in Table 11.12 also presents the receptor sensitivity, the magnitude of impact and the resultant scale and nature of noise effect.

11.80 The effects are defined pre-mitigation however assumes the construction plant is compliant with the sound and vibration levels published within BS 5228. The noise levels indicated in Table 11.12 represent those at a distance of 1m from the nearest windows of the surrounding sensitive receptors.

Table 11.12: Summary of Predicted Noise Levels during Demolition and Construction

Activity	Predicted noise level ($L_{Aeq,10hr}$ dB)	Magnitude of Impact	Scale and Nature of Effect and Significance
NSP1 Residential dwellings along Thornton Street North – (Receptor sensitivity – High)			
Enabling works	74	Low	Minor
Demolition works	68	Low	Minor
Sub-structure	74	Low	Minor
Construction works	75	Low	Minor
NSP2 Residential dwellings along Stretton Close – (Receptor sensitivity – High)			
Enabling works	72	Low	Minor
Demolition works	62	Very low	Negligible
Sub-structure	72	Low	Minor
Construction works	73	Low	Minor
NSP3 Residential dwellings along Rochdale Road – (Receptor sensitivity – High)			
Enabling works	72	Very low	Negligible
Demolition works	68	Very low	Negligible
Sub-structure	72	Very low	Negligible
Construction works	73	Very low	Negligible
NSP4 Church of the Saviour church and school - (Receptor sensitivity – Medium)			
Enabling works	66	Very low	Negligible
Demolition works	66	Very low	Negligible
Sub-structure	66	Very low	Negligible

Activity	Predicted noise level ($L_{Aeq,10hr}$ dB)	Magnitude of Impact	Scale and Nature of Effect and Significance
Construction works	67	Very low	Negligible
NSP5 Residential dwellings along Thornton Street North – (Receptor sensitivity – High)			
Enabling works	77	Medium	Moderate
Demolition works	N/A [1]	N/A [1]	N/A [1]
Sub-structure	76	Medium	Moderate
Construction works	78	Medium	Moderate

11.81 [1] As a worst-case scenario, it is assumed that NSP5 will be occupied throughout the enabling works and construction works of the rest of the development as previously discussed. It is not a receptor for the demolition works as the these works involve the demolition of NSP5 itself.

11.82 The sub-structure and construction works stage involves the noisiest works and is predicted to result in a **Moderate Adverse** effect to the residential dwellings along Thornton Street North (NSP5) which is **significant**.

11.83 This effect however is expected to be limited in its geographical extent. As such, the effects are **local**, **temporary (short-term)** and **direct**.

11.84 All other receptors are predicted to result in a **Minor Adverse** or **Negligible effect** which is **not significant**. These effects would also be **local**, **temporary (short-term)** and **direct**.

11.85 The predictions presented are based on reasonable worst-case assumptions and it is considered that there will be opportunities for the contractor to reduce the magnitude of impact experienced at the nearest noise sensitive receptors through the implementation of Best Practicable Means (BPM) and associated mitigation measures

Construction Traffic

11.86 During the enabling / demolition / construction works, construction traffic is expected to result in 40 two way vehicular trips daily. 20 of these would be vehicles to remove earth and debris from site, whilst the other 20 are anticipated to be site operatives travelling to / from the site.

11.87 Based on the above, the impacts on all receptors are anticipated to be **Negligible, local, temporary (short-term)** and **direct** which is **not significant.**

Construction Vibration

11.88 It is recommended that continuous flight auger (CFA) piling techniques be implemented to reduce noise and vibration levels during piling.

11.89 Historic vibration data from Continuous Flight Auger (CFA) piling works carried out in East London indicates that particle peak velocities of between 0.05 to 0.23 mm/s at 20 m from a site have been recorded during auger rotary boring of 1.05 m diameter piles, with soil conditions described as, 'Fill/dense ballast/clay'. For the purposes of the assessment an average of the range of particle peak velocities is used.

11.90 Calculations based on line source propagation have been carried out based on the historic data for CFA piling to estimate the vibration levels during piling, the results of which indicate ≤ 0.1 mm/s.

11.91 On this basis, the impacts on all receptors are anticipated to be **Negligible, local, temporary (short-term)** and **direct** which is **not significant.**

Completed Development

11.92 It should be noted that the NSP5 is not considered in the following section as it will be demolished by the completed development phase.

Road Traffic

11.93 The following traffic assessment scenarios have been considered in this chapter:

- Baseline 2020;
- Future Baseline (without development year 2023); and
- Future Baseline (With development year 2023)

11.94 Civic Engineers have stated that Department for Transport (DfT) traffic flows have been decreasing in the area consistently over the past 20 years. As a worst-case scenario, future baseline (without development) is considered to be the same level of traffic as per Baseline 2020. The 16-hour noise levels detailed in Table 11.13 are the highest change in noise level predicted between the 2027 "without" and "with" development scenarios for each receptor.

Table 11.13: Predicted 16-hour Noise Levels at 1m from Receptors

Receptor	Predicted noise level (LAeq,10hr dB)			Receptor Sensitivity	Magnitude of Impact	Scale and Nature of Effect and Significance
	2026 without Proposed Development	2026 with Proposed Development	Change with Proposed Development			
NSP1 Residential dwellings along Thornton Street North	56	56	<1	High	Very Low	Negligible (not significant)
NSP2 Residential dwellings along Stretton Close	57	57	<1	High	Very Low	Negligible (not significant)
NSP3 Residential dwellings along Rochdale Road	72	72	<1	High	Very Low	Negligible (not significant)
NSP4 Church of the Saviour church and school	71	71	<1	Medium	Very Low	Negligible (not significant)

11.95 The increase in ambient noise levels predicted at all receptors has been assessed to **be Negligible**, **local, permanent** and **direct** which is **not significant**.

Building Services Plant Noise

11.96 Based on the baseline background noise levels, the total noise from building services plant will be limited in line with the noise levels detailed in Table 11.14 at a position 1m from all nearby facades. Limits have only been determined for the closest receptors on the basis that the control of noise emissions from building services plant at these receptors will inherently result in lower noise levels at receptors further away.

Table 11.14: Building Services Plant Noise Limits

Receptor	Representative Free Field Background Sound Level (dB)		Building Services Noise Limits, 1m from Façade (dB)		Increase in Background Sound Level	Receptor Sensitivity	Magnitude of Impact	Scale and Nature of Effect and Significance
	Daytime (07:00 to 23:00 hours)	Night-time (23:00 to 07:00 hours)	Daytime (07:00 to 23:00 hours)	Night-time (23:00 to 07:00 hours)				
NSP1 Residential dwellings along Thornton Street North	51	41	46	36	<1	High	Very Low	Negligible (not significant)
NSP2 Residential dwellings along Stretton Close	53	40	48	35	<1	High	Very Low	Negligible (not significant)
NSP3 Residential dwellings along Rochdale Road	58	47	53	42	<1	High	Very Low	Negligible (not significant)
NSP4 Church of the Saviour church and school	57	45	52	40	<1	Medium	Very Low	Negligible (not significant)

11.97 The building services plant strategy will be developed to ensure that the limits detailed in Table 11.14 are achieved. On this basis a **Negligible**, **local, permanent** and **direct** has been assessed at all receptors which is **not significant**.

Mitigation Measures

Demolition and Construction

11.98 As noted, the predicted noise levels are based on reasonable worst-case assumptions and there will be additional mitigation options available to the contractor to reduce noise associated with demolition and construction activities. Additional mitigation measures that the contractor/s shall be required to explore and implement include:

- The production of a construction noise and vibration report that evaluates the construction activities and provides specific BPM to reduce noise and vibration;
- Limiting high impact activities (e.g. demolition) to specific times during the day, e.g. 1 hour on – 1 hour off, or 09:00-12:00 and 14:00-17:00;
- Plant is to be properly maintained and operated in accordance with the manufacturer's recommendations. Electrically powered plant is preferred, where practicable, to mechanically powered alternatives;
- Where feasible, all stationary plant would be located so that the noise effect at all occupied residential and commercial premises is minimised and, if practicable, every item of static plant when in operation is to be sound attenuated using methods based on the guidance and advice given in BS 5228;
- Trade contractors would at all times apply the principle of Best Practicable Means as defined in Section 72 of the COPA and carry out all work in such a manner as to reduce any disturbance from noise and vibration to a minimum; and
- The timing of building operations will be critical in avoiding noise and vibration nuisance to surrounding areas and premises. The contractor would identify particularly sensitive periods in the works so that the potential problems can be minimised and that early and good public relations with the adjacent occupants of buildings are maintained.

11.99 The assessment of potential construction noise and vibration effects does not include prescriptive measures, as these are not appropriate for this stage of the development. During detailed construction programme stage and preparation of the Construction Environmental Management Plan (CEMP), measures to mitigate potential noise and vibration effects on nearby noise sensitive premises will be defined and agreed with MCC.

11.100 Based on the guidance provided in BS 5228, the following measures will be used where appropriate to control noise associated with construction activities:

- Unnecessary revving of engines will be avoided and equipment switched off when not required;
- Internal haul routes will be well maintained with steep gradients avoided;

- Rubber linings will be used in chutes, dumpers etc. as required reducing impact noise;
- Drop heights of materials will be minimised;
- Plant and vehicles will be started up sequentially rather than all together;
- The movement of plant onto and around the site shall have regard for the normal operating hours of the Site and the location of noise sensitive receptors as is reasonably practicable; and
- Audible reversing warning systems on mobile plant and vehicles will be of the type which, whilst ensuring that they give proper warning, has a minimum noise impact on persons outside open sites. When reversing, mobile plant and vehicles will travel in a direction away from noise sensitive receptors wherever possible.

Vibration effects from construction activities

11.101 No mitigation is required.

Site suitability

Noise Ingress

11.102 External noise ingress shall be controlled via the facade sound insulation performance in order that the internal noise levels given in Table 11.6 are not exceeded. Further details of facade sound insulation performance requirements can be found in **Appendix 11.2**.

Vibration Ingress

11.103 An assessment of tactile vibration indicates that that the predicted vibration dose values during the daytime and the night-time periods are expected to be **negligible** and thus lower than the threshold of the 'low probability of adverse comment' category. Details of the vibration ingress assessment are provided in **Appendix 11.2**.

11.104 The re-radiated noise levels are predicted to be **negligible** and thus significantly lower than the ANC guidelines criteria.

Completed Development Mitigation

Road Traffic

11.105 No mitigation is required.

Building Service Plant Noise

11.106 The building services plant will be designed to the limits listed. Reviews of the expected building services plant indicates that the proposed building services plant noise limits are achievable, and, on this basis, no further mitigation measures are currently proposed.

Entertainment Noise

11.107 The building envelope to the commercial unit will be designed to control noise egress along with appropriate entertainment noise limits within the commercial units.

Residual Impacts

11.108 All of the residual effects resulting from the proposed development are presented in Table 11.15.

Table 11.15: Residual Effects Summary

Location	Description of Effect	Potential impact including significance	Mitigation	Residual Effect including significance
***Demolition and* Construction**				
NSP3 - Residential dwellings along Rochdale Road NSP4 - Church of the Saviour church and school	Enabling works	Negligible (not significant)	None	Negligible (not significant)
NSP1 - Residential dwellings along Thornton Street North NSP2 - Residential dwellings along Stretton Close	Enabling works	Minor adverse (not significant)	None	Minor adverse (not significant)
NSP5 - Residential dwellings along Thornton Street North	Enabling works	Moderate adverse (significant)	None	Moderate adverse (significant)

Location	Description of Effect	Potential impact including significance	Mitigation	Residual Effect including significance
NSP2 - Residential dwellings along Stretton Close NSP3 - Residential dwellings along Rochdale Road NSP4 - Church of the Saviour church and school	Demolition works	Negligible (not significant)	None	Negligible (not significant)
NSP1 - Residential dwellings along Thornton Street North	Demolition works	Minor adverse (not significant)	None	Minor adverse (not significant)
NSP3 - Residential dwellings along Rochdale Road NSP4 - Church of the Saviour church and school	Sub-structure	Negligible (not significant)	None	Negligible (not significant)
NSP1 - Residential dwellings along Thornton Street North NSP2 - Residential dwellings along Stretton Close	Sub-structure	Minor adverse (not significant	None	Minor adverse (not significant
NSP5 - Residential dwellings along Thornton Street North	Sub-structure	Moderate adverse (significant)	None	Moderate adverse (significant)

Location	Description of Effect	Potential impact including significance	Mitigation	Residual Effect including significance
NSP3 - Residential dwellings along Rochdale Road NSP4 - Church of the Saviour church and school	Construction works	Negligible (not significant)	None	Negligible (not significant)
NSP1 - Residential dwellings along Thornton Street North NSP2 - Residential dwellings along Stretton Close	Construction works	Minor adverse (not significant)	None	Minor adverse (not significant)
NSP5 - Residential dwellings along Thornton Street North	Construction works	Moderate adverse (significant)	None	Moderate adverse (significant)
All receptors	Construction traffic	Negligible (not significant)	None	Negligible (not significant)
All receptors	Construction vibration	Negligible (not significant)	None	Negligible (not significant)
Completed development				
All Receptors	Entertainment noise from commercial unit	Negligible (not significant)	None	Negligible (not significant)
All Receptors	Traffic noise level increases	Negligible (not significant)	None	Negligible (not significant)
All existing receptors	Building services plant noise	Negligible (not significant)	None	Negligible (not significant)

11.109 It should be noted that with the demolition and construction mitigation measures previously outlined adopted, the likely residual effects from demolition construction activities are expected to reduce to be less than those presented.

In Combination Effects

Approach

11.110 The in-combination effects of noise and vibration are assessed using the same methodologies previously used throughout this chapter.

Potential impacts

Construction Cumulative Impacts

11.111 During the construction phase, temporary effects are possible if the construction phases for other proposed developments outlined within the Northern Gateway Strategic Regeneration Framework overlap with one another.

11.112 Noise from construction traffic on main roads has the potential to be a significant effect although would be considered to last for a short period. It is understood that Rochdale Road will provide the main access for Collyhurst Village construction. Given the high traffic flows associated with Rochdale Road, it is not expected that significant impacts would result from cumulative construction traffic.

Completed Developments

11.113 The effects of road traffic created by the development has been assessed to be negligible. On completion of the whole Northern Gateway Scheme, there is the potential for considerable traffic flow increases, particularly on minor roads. Here, significant effects are possible.

11.114 Plant noise limits have been set for plant noise egress associated with the Collyhurst Village development. If other developments are designed and constructed simultaneously, each achieving a noise level below the existing background noise level, then there is the potential for the background noise level to creep resulting in an increase in the noise climate over time. Given the distances between the Collyhurst Village site in relation to other proposed developments, this is not expected to occur.

Mitigation Measures

Construction

11.115 Where possible, careful planning of construction phases by the construction manager ensuring that construction periods do not overlap for developments that will use similar haulage routes or that are in close proximity to each other could help mitigate the potential for in-combination effects from construction noise and vibration.

Completed Development

11.116 To reduce the potential or in-combination effects from traffic flow increase for the completed development, occupants of the development should be encouraged to use public transportation links.

Residual Impact

11.117 It is not possible to assess in-combination residual effects at such an early stage of the regeneration scheme and subsequent environmental statements will need to address this.

Conclusions

11.118 The construction phase, and as such any impacts associated with construction will be **temporary**, appropriate mitigation measures will be implemented.

11.119 The impact of construction noise egress is predicted to have a **negligible** or **minor adverse** impact at the surrounding noise sensitive receptors. During the enabling and construction works, a **moderate adverse** impact at NSP5 - Residential properties along Thornton Street North.

11.120 The impact of construction vibration is predicted to be **negligible** at all receptors.

11.121 The residual impacts of traffic noise levels and building services plant is also predicted to be **negligible** at all receptors.

12. Socioeconomics

Introduction

12.1 This chapter assesses the significance of the socioeconomic effects of the proposed development on the identified study area. In particular, the assessment considers:

- Economic and employment effects related to direct, indirect and induced job creation during demolition and construction and with the completed development, displacement of existing businesses during demolition and construction, expenditure from the temporary construction workforce and an increase in household spend with the completed development;
- Housing effects related to the removal of existing residential units during demolition and construction and an increase in housing stock with the completed development in place; and
- Social and community infrastructure effects related to a change in the demand for education, healthcare and community facilities and demands on open and recreational space with the completed development in place.

12.2 The chapter describes the methods used to assess the effects, the baseline conditions currently existing at the site and surroundings, the potential direct and indirect impacts of the development, the mitigation measures required to prevent, reduce, or offset the impacts and the residual effects. It has been written by Avison Young.

Planning Policy Context

National Planning Policy

National Planning Policy Framework (NPPF) (2019)

12.3 The NPPF sets out the Government's planning policies and how these are expected to be applied. Central to this framework is the presumption in favour of sustainable development; it is identified as "*the golden thread running through both plan-making and decision-taking*" (para 14). Three dimensions of sustainable development are defined by the NPPF in setting out the role of the planning system:

- Economic - the planning system is able to perform an economic role through supporting growth and innovation;
- Social - the planning system can perform a social role by supporting strong, vibrant and healthy communities. This includes providing the supply of housing required to meet the needs of present and future generations; and

- Environmental - the planning system is able to perform an environmental role by protecting and enhancing the natural, built and historic environment.

12.4 NPPF notes that these roles are mutually dependent and so should not be undertaken in isolation: "*to achieve sustainable development, economic, social and environmental gains should be sought jointly and simultaneously through the planning system*" (para 8).

12.5 Of particular relevance to the assessment of socioeconomic are the *'positive improvements'* identified by the NPPF which the planning system should seek to achieve (para. 9): Making it easier for jobs to be created in cities, towns and villages; and improving the conditions in which people live, work, travel and take leisure.

Local Planning Policy

Manchester City Council's (MCC) Core Strategy (2012)

12.6 MCC's Core Strategy is the key document in Manchester's Local Development Plan. The Strategy outlines the long-term strategic priorities for the unitary authority and serves as part of the framework against which planning applications are currently assessed.

12.7 The relevant elements of the Strategy are identified below:

- Objective S03: Housing - The Strategy aims to provide a significant increase in high-quality housing provision at sustainable locations through the City. The objective's emphasis on high-quality housing includes creating sustainable lifetime neighbourhoods with high-quality environments, good local facilities and with easy access to employment opportunities;
- Policy H1: Overall Housing Provision - This policy states that between 2009 and 2027, approximately 60,000 homes will be delivered in the City. It adds that new housing will predominantly in the Regional Centre and Inner Areas of Manchester; and
- Policy H8: Affordable Housing - This policy states that all residential development on sites of 0.3 hectares and above or where the units proposed numbers 15 or higher will be subject to the requirement for affordable housing or an equivalent financial contribution. This policy states that new development will contribute to a 20% new housing provision to be affordable. The proportion of affordable housing units will reflect the type and size of the overall development. It adds that where appropriate, provision will be made within Section 106 agreements to amend the proportion of affordable housing considering economic conditions and subject to a financial viability assessment.

MCC's Northern Gateway Strategic Regeneration Framework (SRF) (2019)

12.8 The Northern Gateway SRF was published in 2019 and was developed with full regard to national planning policy, Manchester's statutory Development Plan and the suite of strategic and regeneration policies that are driving renaissance in the City.

12.9 The site lies in the 'Collyhurst Village' sub-area of the Northern Gateway area, where the key opportunities relate to:

- The potential for low to mid-rise intensification with a mix of housing types and tenures appealing to various lifestyles and incomes;
- Provision of a mix of high-quality family accommodation;
- Creation of outstanding public spaces and social infrastructure for existing and new residents;
- Enhancement of links to bus and Metrolink nodes;
- Prime Rochdale Road frontage creates an opportunity to support a higher density of residential development and strengthen the street edge; and
- Development of a strong Gateway at Queen's Road and rationalise the junction.

Greater Manchester Spatial Framework (GMSF)

12.10 The GMSF (Revised Draft 2019) focuses on identifying future housing and employment land requirement in the ten local authorities which form Greater Manchester up to 2035. Currently a draft, once endorsed it will act as the overarching development plan for Greater Manchester. The GMSF provides strategic context as well as detail around housing and employment land the associated infrastructure required.

12.11 The elements of the Revised Draft GMSF relevant to this assessment are as follows:

- Strategic Objective 1 - seeks to increase the number of dwellings, including affordable homes and provide a diverse mix of housing;
- Strategic Objective 2 - seeks to create neighbourhoods of choice by prioritising the use of brownfield land and focussing new homes in the Core Growth Area and the town centres;
- Policy GM-H 1 - which sets out the aspiration to deliver 201,000 net additional dwellings in Greater Manchester over the period 2018-37 or an annual average of around 10,580; and
- Policy GM-H 3 - which seeks to incorporate a range of dwelling types and sizes to meet local needs and deliver more inclusive neighbourhoods.

Other Relevant Policy

The Manchester Strategy – Our Manchester (2016)

12.12 The Manchester Strategy sets out a long-term vision for Manchester's future. The overarching vision is for Manchester to be in the top flight of world-class cities in 2025. The five key themes of the Strategy are:

- A thriving and sustainable city;
- A highly skilled city;

- A progressive and equitable city;
- A liveable and low-carbon city; and
- A connected city.

12.13 Within the context of the Our Manchester Strategy, the Residential Growth Strategy (2016-2025) sets out the city's plans to deliver a minimum of 25,000 new homes over the next decade. The Strategy has six priorities to achieve this growth:

- Increase house-building on existing and new sites;
- Improve the quality and sustainability of the city's housing;
- Increase opportunities for home ownership;
- Expand the family-housing offer;
- Professionalise the private-rented sector; and
- Provide appropriate housing options for retirement living.

Approach

Study Area

12.14 The study areas utilised for each of the effects assessed within this chapter are outlined below. These distances were considered to be appropriate to enable the assessment of likely significant effects.

Economic and Employment Effects

12.15 The Additionality Guide notes that there are two levels at which economic effects should be considered:

- Local; and
- Regional.

12.16 The Additionality Guide advises that the *'local level for projects that generate employment effects or other economic benefits is often considered to be within the relevant travel to work area'*. The site is situated within MCC and therefore it is considered appropriate to set the 'local level' as Manchester. This has been termed the 'district' level for the purposes of this chapter in respect to economic and employment effects.

12.17 The administrative area of MCC is centrally situated within the Greater Manchester sub-region and has close links with its neighbouring authorities. As such, the employment effects of the proposed development are considered to extend across the wider Greater Manchester area. As such, it is considered appropriate to set the 'regional level' as Greater Manchester. This area incorporates MCC's administrative area alongside Bolton, Bury, Oldham, Rochdale, Salford, Stockport, Tameside, Trafford and Wigan. This has been termed the 'sub-regional' level for the purposes of this chapter in respect to economic and employment effects.

12.18 Statistics for the North West, England / Great Britain / UK have been provided within this chapter for context, but this information is not utilised within the assessment.

Housing effects

12.19 The study area for the assessment of effects related to housing was the administrative area of MCC and Greater Manchester. As above for employment and economic effects, these are referred to as the 'district' and 'sub-regional' levels respectively.

Community and Social Infrastructure effects

12.20 The study area adopted for the assessment of effects related to changes in demand on education (both primary and secondary) and community facilities was 2.5km from the site. Where relevant, these study areas are referred to as the 'local level'.

12.21 The study area used for healthcare was the Manchester Clinical Commissioning Group Primary Care Networks within which the site is located (Higher Blackley, Harpurhey and Charlestown) and the neighbouring area (Miles Platting, Newton Heath and Moston).

12.22 The study area used to identify existing open and recreational spaces is 800m from the site, equating to a 10minute walk. Reference was also made to strategic studies of open and recreational spaces across MCC.

Method of Baseline Data Collection

12.23 In order to assess the likely socioeconomic effects of the proposed development, baseline information on a variety of socioeconomic indicators has been obtained through a desk-based study and interpreted for the relevant study areas for each likely effect. As noted in Paragraph 12.18, data for the North West region and England / Great Britain / UK has also been obtained to provide context.

12.24 Data included in this chapter has been collected from the following sources:

- The Office for National Statistics (ONS) Census Data;
- The National Online Manpower Information System (NOMIS);
- Annual Survey of Hours and Earnings;
- Indices of Multiple Deprivation 2019;
- NHS Find a GP Website;
- School Information Service Website;
- Greater Manchester Combined Authority documents, including the Greater Manchester Strategic Framework Revised Draft - January 2019; and
- MCC documents, including the Core Strategy and City Wide Open Spaces, Sport and Recreation Study.

12.25 The indicators have been grouped into several subject areas as follows:

- Population and Age Profile;
- Deprivation;
- Employment and Economy;
- Housing;
- Social and Community Infrastructure (including education, health and community facilities); and
- Open and Recreational Space.

12.26 Taken together, it is considered that these subject areas provide a robust indication of the prevailing socioeconomic baseline conditions relevant to the assessment reported within this chapter.

Assessment Methodology

Demolition and Construction

Direct, Indirect and Induced Job Creation

12.27 The employment effects during demolition and construction are assessed on the basis on the number of direct, indirect and induced jobs which are estimated to be generated during this stage of the proposed development.

12.28 The methodology adopted for the assessment is in line with the approach formulated by the Birmingham Economic Information Centre in 'The Economic Impact of Development Investment in Birmingham 1998-2010'. This formula uses the expenditure associated with demolition and construction, divided by an assumed cost for one-year temporary construction jobs. This figure is then converted into full-time equivalent (FTE) jobs, where it is assumed that one job over a ten year period is equivalent to one FTE, meaning that the number of temporary construction jobs has been divided by ten (one construction FTE = 10 temporary person years of construction employment). The FTEs per annum were then calculated by dividing the total FTEs by the overall demolition and construction period of 2.5 years.

12.29 At this stage and given the limited information available, this is considered to be a robust approach to enable the assessment of the likely significant employment effects during demolition and construction.

12.30 Table 12.1 presents the factors used for the assessment reported within this chapter. The anticipated total construction cost is an indicative estimate that has been generated only for the purposes of assisting calculations for direct employment opportunities and should not be relied upon for any other purpose.

Table 12.1: Direct Construction Job Calculation Factors

Factor	Description
Anticipated total demolition and construction cost	£44,800,000
Average turnover per construction employee*	£35,563

Notes to Table 12.1: * the mean value for 'North West - Construction of buildings'.

12.31 Based on the estimated build cost of circa £44,800,000, the estimated number of jobs across the demolition and construction stage is 126 jobs. Assuming a 2.5-year demolition and construction period and that the same number of jobs will be generated by each year of demolition and construction, this equates to 50 jobs per annum.

12.32 For the purposes of the assessment, the evaluation for the district level (Manchester) and sub-regional level (Greater Manchester) is not mutually exclusive (i.e. the number of jobs is considered in relation to the total employees at both the district and sub-regional levels). As such, the estimated number of jobs were evaluated against the total number of employees in industry sector F - Construction as of 2019 at both the district (Manchester) and sub-regional (Greater Manchester) levels to determine the magnitude of impact.

12.33 Given the short-term nature of demolition and construction, the additionality factors of leakage and displacement (which are described in further detail in Table 12.2) were not applied in the calculations for this stage of the proposed development.

12.34 Indirect and induced job creation during demolition and construction was calculated using a multiplier of 2.7, which aligns with the composite output multiplier for the construction sector noted in the Additionality Guide. At this stage, it is not possible to isolate the industry sector where the impact may occur. Therefore, these figures were evaluated against the total number of employees in all industry sectors as of 2019 at the district and sub-regional levels to determine the magnitude of impact.

Expenditure from Temporary Construction Workforce

12.35 During demolition and construction, it is anticipated that the temporary construction workforce will spend on sustenance and amenities.

12.36 Using professional judgement, a conservative estimation was made that 60% of the workforce will spend £6 per day on food and drink on 232 days per annum. The 232 working days was based on the assumption that a FTE employee works five days a week, with four weeks holiday and eight bank holidays off per year. This is qualitatively considered in relation to existing expenditure to inform the assessment.

Displacement of Existing Businesses and Loss of Existing Employment

12.37 The existing retail unit on the site (Collyhurst Village Stores) will be relocated to alternative premises within the proposed development, which will be operational prior to the vacation and demolition of the existing store. Therefore, no effects related to the displacement of existing local businesses or temporary loss of employment opportunities are anticipated to arise from the proposed development. An assessment of the direct, indirect and induced job creation with the completed development in place is provided within this chapter.

Displacement of Existing Residents and Loss of Existing Housing

12.38 The existing residents on the site (further details in the Baseline Conditions section below) will be relocated to alternative premises within the proposed development prior to the vacation and demolition of the existing properties. Therefore, no effects related to the displacement of existing residents or loss of existing housing are anticipated to arise from the proposed development. An assessment of the increase in housing stock with the completed development in place is provided within this chapter.

Completed Development

Direct, Indirect and Induced Job Creation

12.39 The employment effects arising from the completed development are based on the number of jobs which are estimated to be generated.

12.40 Given the long-term and permanent nature of the proposed development, one FTE is assumed to be equivalent to one job.

12.41 As with the assessment of demolition and construction, the evaluation for the district (Manchester) and sub-regional levels (Greater Manchester) was not mutually exclusive (i.e. the number of FTE / jobs was considered in relation to the number of relevant industry sector employees at both the district and sub-regional levels).

12.42 In order to calculate the gross FTE / jobs generated by the completed development, the assessment reported within this chapter uses the factors set out in the Employment Density Guide.

12.43 In line with the approach set out in the Additionality Guide, it is the net FTE / jobs which need to be determined and utilised to inform the assessment of likely significant employment effects arising from the completed development.

12.44 The net FTE / jobs were derived from the gross number of FTE / jobs by applying the additionality factors of leakage and displacement, in line with the approach set out in the Additionality Guide. As no substitution is anticipated to take place, this factor was not considered within the calculations.

12.45 Definitions of the additionality factors of leakage and displacement alongside the levels that were applied in the assessment are provided in Table 12.2.

Table 12.2: Additionality Factors

Additionality factor	Level (as outlined within the Additionality Guide)	Percentage applied (as outlined within the Additionality Guide)	Rationale
Leakage - The proportion of outputs that benefit those outside of the intervention's target area or group.	Medium	25%	It is assumed that due to the location of the site, a reasonably high proportion of the benefits will be retained within the district / sub-regional levels.
Displacement - The proportion of intervention outputs / outcomes accounted for by reduced outputs / outcomes elsewhere in the target area.	Low	25%	There are expected to be some displacement effects, although only to a limited extent.

12.46 It was assumed that industry sector G: Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles could occupy the commercial floorspace proposed within the proposed development. The net direct FTE / jobs were therefore evaluated against the total number of employees in this industry sector at the district (Manchester) and sub-regional (Greater Manchester) levels to determine the magnitude of impact at each geographic scale.

12.47 The number of indirect and induced employment opportunities generated by the completed development was calculated using a multiplier of 1.1 in line with the 'medium' ready reckoner value provided by the Additionality Guide. As it is not possible to isolate the industry sectors where the impact may occur, these figures were considered qualitatively to determine the magnitude of impact

Increase in Household Spend

12.48 The assessment of effects relating to household spend was undertaken based on the anticipated spend from the residents within the completed development and qualitative comparison against the wider household spend in the wider district and sub-regional levels.

12.49 Household expenditure was calculated using the latest estimates of average household weekly expenditure (£454.70) from the Family Spending Report which provides data for the financial year ending 2019.

Increase in Housing Stock

12.50 A quantitative assessment of effects relating to housing stock was undertaken by evaluating the quantum of units that will be delivered by the proposed development against the planning policy housing targets and objectives set out in the Baseline Conditions section.

12.51 On the basis that the proposed development will provide new units of high-quality that meet all relevant current standards, the proposed development units were treated as a wholly new units for the purposes of the evaluation.

Change in Demand for Social and Community Infrastructure

12.52 A quantitative assessment of effects was undertaken by identifying the likely population to be generated by the proposed development and comparing this against the capacity of the educational and healthcare facilities which are outlined in the Baseline Conditions section.

12.53 The total anticipated population generated by the proposed development was based on an average multiplier of 2.3 individuals per residential unit.

12.54 To calculate child yield, the estimated number of children aged 5-11 and 12-19 (including 12-16 and 17-19 categories) were divided by the estimated number of households in the Harpurhey Ward (the ward that the site is located within). On the reasonable assumption that a household and residential unit are considered to be equivalent, this provided the following child yields:

- 5-11: 0.33 per residential unit; and
- 12-19: 0.23 per residential unit.

12.55 As there no available data on the capacity of community facilities, these effects were assessed qualitatively.

Change in Demand for Open and Recreational Space

12.56 A qualitative assessment of effects related to open and recreational space was undertaken which takes into consideration the availability of open and recreational space within 800m of the site, which is equivalent to a 10-minute walk.

Characterisation of Impact

12.57 The assessment identifies the sensitivity of each identified receptor. In a socioeconomic assessment, receptors are not sensitive to changing environmental conditions in the same way as many environmental receptors are. To address this, the assessment has drawn on a combination of measurable indicators and a consideration of the importance of the receptor in policy terms to gauge the receptor's sensitivity. This is considered alongside the weight attached to these issues in local policy.

12.58 Table 12.3 sets out the sensitivity criteria used in the assessment.

Table 12.3: Criteria for Sensitivity

Sensitivity	Criteria
High	Change related to the receptor accorded a high priority in local, regional, or national economic regeneration policy. Evidence of direct and significant socioeconomic challenges including: • Areas with levels of unemployment well in excess of regional / national averages and high levels of relative deprivation (i.e. top 10%); • Areas with an acute housing shortage; • Areas within which social and community infrastructure (e.g. education, healthcare and community facilities) have no capacity / are over-subscribed; and • Areas with a considerable shortfall of open and recreational space / poor-quality resources.
Medium	Change relating to the receptor has medium priority in local, regional, and national economic and regeneration policy. Some evidence of socioeconomic challenges, including: • Areas with levels of unemployment above regional / national averages and levels of relative deprivation (i.e. top 50%); • Areas with a moderate housing shortage; • Areas within which social and community infrastructure (e.g. education, healthcare and community facilities) have limited capacity; and • Areas with a shortfall of open and recreational spaces / moderate-quality resources.
Low	Change related to the receptor is accorded a low priority in local, regional, and national economic and regeneration policy. Little evidence of socioeconomic challenges, including: • Areas with levels of unemployment in line with regional / national averages and levels of relative deprivation (i.e. bottom 50%); • Areas with a limited housing shortage; • Areas within which social and community infrastructure (e.g. education, healthcare and community facilities) have some capacity; and

Sensitivity	Criteria
	• Areas with a surplus of open and recreational space / high-quality resources.
Negligible	The receptor is not considered a priority in local, regional, and national economic development and regeneration policy. No socioeconomic issues relating to a receptor, including: • Areas with levels of unemployment less than regional / national averages and low levels of relative deprivation (i.e. bottom 10%); • Areas with a minimal housing shortage; • Areas within which social and community infrastructure (e.g. education, healthcare and community facilities) have substantial surplus capacity; and • Areas with a considerable surplus of open and recreational space / very high-quality resources.

12.59 The magnitude of impact upon each receptor was determined by considering the predicted deviation from baseline conditions, both before and - if required - after mitigation. The criteria used for the assessment of the magnitude of impact, which can be either positive (beneficial) or negative (adverse) is shown below in Table 12.4.

Table 12.4: Criteria for Magnitude of Impact

Magnitude of Impact	Description / Criteria
Substantial	Proposed development would cause a large change to existing socioeconomic conditions in terms of absolute and / or percentage change, such as: • Greater than 5% increase / decrease on existing baseline levels of employment; • Greater than 5% increase / decrease of housing stock in relation to contribution to planning policy targets; • Considerable increase / decrease in demand on social and community infrastructure; and • Considerable increase / decrease in the provision of open and recreational space / quality of such space.

Magnitude of Impact	Description / Criteria
Moderate	Proposed development would cause a moderate change to existing socioeconomic conditions in terms of absolute and / or percentage change, such as: • 1% - 5% increase / decrease on existing baseline levels of employment; • 1% - 5% increase / decrease of housing stock in relation to contribution to planning policy targets; • Moderate increase / decrease in demand on social and community infrastructure; and • Moderate increase / decrease in the provision of open and recreational space / quality of such space.
Minor	Proposed development would cause a minor change to existing socioeconomic conditions in terms of absolute and / or percentage change, including: • 0.1% - 0.99% increase / decrease on existing baseline levels of employment; • 0.1% - 0.99% increase / decrease of housing stock in relation to contribution to planning policy targets; • Limited increase / decrease in demand on social and community infrastructure; and • Limited increase / decrease in the provision of open and recreational space / quality of such space.
Negligible	No discernible change in baseline socioeconomic conditions.

Significance Criteria

12.60 There are no industry standard significance criteria for the assessment of socioeconomic effects. The assessment is quantitative where possible. In circumstance where this is not possible, the assessment is qualitative in nature based on professional judgement.

12.61 The significance of effect was identified by combining the sensitivity of the receptor against the magnitude of impact using the matrix in Table 12.5. However, the assessment also took account of the following factors in determining the significance of effects:

- Extent;
- Magnitude;

- Duration;
- Timing;
- Frequency;
- Reversibility; and
- Likelihood.

Table 12.5: Significance of Effect

Magnitude of Impact	Sensitivity of Receptor			
	High	**Medium**	**Low**	**Negligible**
Substantial	Major	Major	Moderate	Negligible
Moderate	Major	Moderate	Minor	Negligible
Minor	Moderate	Minor	Minor	Negligible
Negligible	Negligible	Negligible	Negligible	Negligible

12.62 Any effect that is moderate or above was considered to be 'significant' (including for both adverse and beneficial effects).

Assumptions/Limitations

12.63 The assessment of effects has relied upon the use of secondary data within calculations as assumptions in order to generate an understanding of the likely effects resulting from the proposed development.

Consultation

12.64 In April 2020, MCC confirmed within their Scoping Opinion that they agreed with the assessment methodology to be adopted for this chapter. No further consultation with MCC or other statutory agencies was therefore considered necessary for the preparation of this chapter.

Baseline Conditions

Population and Age Profile

12.65 There are 29 existing residential properties within the site, including 22 Council-owned units and 7 private residential units. There are estimated to be 72 residents in the Council-owned units and 20 in the private residential units, giving an overall site population of 92 residents.

12.66 The resident population estimates for Manchester in 2019 was 552,900. The estimated total resident population within Greater Manchester was 2,835,700 in 2019.

12.67 The 2019 estimates for the proportion of individuals aged 16-64 in Manchester, Greater Manchester, the North West and Great Britain are presented in Table 12.6.

Table 12.6: Summary of Resident Population Aged 16-64 (2019)

Area	Percentage of resident population aged 16-64
Manchester	70.5%
Greater Manchester	63.6%
North West	62.1%
Great Britain	62.5%

12.67.1 Table 12.6 shows that there was a higher proportion of individuals aged 16-64 in Manchester (70.5%) compared with the average across Greater Manchester (63.6%). There is a higher proportion of individual aged 16-64 in both Manchester and Greater Manchester compared with the averages for the North West (62.1%) and Great Britain (62.5%).

12.67.2 The MCC Forecasting Model (MCCFM) forecasts that the rate of city population growth is likely to increase over the next five years due to new apartment-led residential developments, adding greater capacity and opportunity for further population growth. Population growth is also being driven by international migration. The MCCFM predicts that the city's population will be greater than 640,000 by 2025. Clearly external factors will influence this growth, including the ongoing Brexit negotiations and the economic recovery following the Covid-19 pandemic.

Deprivation

12.68 The Indices of Multiple Deprivation 2019 use a combination of information relating to the domains of income, employment, education, health, skills and training, barrier to housing and services, and crime to create an overall score of deprivation for local authorities within England. A low rank indicates greater, relative deprivation; hence the most deprived area is ranked 1.

12.69 Within the 2019 Indices of Multiple Deprivation, Manchester was ranked 6 in England out of 319 local authorities, and therefore is in the top 10% of most deprived authorities in England. The key domains influencing Manchester's position are employment, health and crime. Greater Manchester was ranked 3 out of 36 Local Enterprise Partnerships (LEP) in England. Therefore, Greater Manchester is in the top 10% most deprived LEPs in England.

Employment and Economy

Economic Activity / Inactivity

12.70 There is an existing business within the site, Collyhurst Village Stores. Within the wider Northern Gateway SRF area, there are a mix of offices, light industry, wholesalers and depots with a number of large and Small-Medium Enterprise businesses operating, including Wing Yip, HMG Paints, Royal Mail, breweries and other independent businesses. There are also existing employment areas surrounding the site, including Strangeways to the west and Cheetham Hill to the north.

12.71 NOMIS states that the estimated total number of employees (excluding employees, self-employed, government-supported trainees and HM forces) in Manchester was 404,000 and across Greater Manchester was 1,358,000 as of 2019.

12.72 According to NOMIS, the job density level in 2018 (i.e. the ratio of jobs available divided by the resident population aged between 16 and 64) was 1.17 in Manchester and 0.85 in Greater Manchester. The job density across the North West was 0.84 and across Great Britain was 0.86. This indicates that there were a higher number of jobs for individuals of working age available in Manchester compared with Greater Manchester, the North West and Great Britain as a whole. The jobs density in Greater Manchester is broadly comparable with the averages across the North West and Great Britain.

12.73 Based on NOMIS data, there was a lower proportion of individuals classified as 'Economically Active' in Manchester (73.1%) compared to the averages across Greater Manchester (77.1%), North West (78.3%) and Great Britain (79.4%). Conversely, the percentage of working age classified as 'Economically Inactive' was higher in Manchester (26.9%) than Greater Manchester (22.9%), North West (21.7%) and Great Britain (20.6%).

Economy

12.74 Manchester is one of the eight core cities in England and the largest city in the North West region. Key employment sectors include retail and wholesale distribution, hospitality, tourism and sport, financial, professional and business services. The key emerging sectors include creative, digital and technology, advanced manufacturing and life sciences and healthcare.

12.75 Table 12.7 provides the estimated employee jobs from NOMIS by industry sector in 2019 for Manchester, Greater Manchester, the North West and Great Britain.

Table 12.7: Estimated Employee Jobs by Industry Sector (2019)

Industry Sector	Manchester	Greater Manchester	North West	Great Britain
B: Mining and Quarrying	0.0%	0.0%	0.1%	0.2%
C: Manufacturing	2.7%	7.4%	9.3%	8.0%
D: Electricity, Gas, Stream and Air Conditioning Supply	0.1%	0.9%	0.5%	0.4%
E: Water Supply; Sewerage, Waste Management and Remediation Activities	0.2%	0.5%	0.7%	0.7%
F: Construction	2.0%	4.3%	4.6%	4.9%
G: Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	11.9%	16.2%	16.3%	15.0%
H: Transportation and Storage	7.2%	6.1%	5.6%	4.9%
I: Accommodation and Food Service Activities.	8.2%	6.2%	6.9%	7.7%
J: Information and Communication	4.7%	3.7%	2.8%	4.3%
K: Financial and Insurance Activities	5.0%	3.2%	2.8%	3.5%
L: Real Estate Activities	2.2%	1.8%	1.5%	1.7%
M: Professional, Scientific and Technical Activities	13.6%	9.9%	8.8%	8.8%
N: Administrative and Support Service Activities	11.9%	10.1%	8.6%	8.9%
O: Public Administration and Defence; Compulsory Social Security	4.7%	4.2%	4.6%	4.4%
P: Education	9.9%	8.4%	8.0%	8.7%
Q: Human Health and Social Work Activities	12.4%	12.8%	14.2%	13.1%
R: Arts, Entertainment and Recreation	2.2%	2.4%	2.6%	2.5%
S: Other Service Activities	1.7%	1.9%	1.9%	2.0%

Notes: % is a proportion of total employee jobs excluding farm-based agriculture. Employee jobs exclude self-employed, government-supported trainees and HM Forces. Data excludes farm-based agriculture.

12.76 Table 12.7 shows that industry sectors within the wider Services sector (Sectors G -S) were the largest employment sectors in Manchester, accounting for 95.6% of employee jobs. Within Manchester, Sector M – Professional, Scientific and Technical Activities was the largest sub-sector of the Services sector (13.6%). The Service industry sectors (G-S) were also the largest employment sector across Greater Manchester, accounting for 86.9% of jobs and Sector G - Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles was the largest sub-sector of the Services sector (16.2%). The percentage of individuals employed in the Services industry Sectors is broadly similar to the averages across the North West (84.6%%) and Great Britain (85.5%).

Housing

Existing Housing Stock

12.77 There are 29 existing residential units within the site, including 22 council-owned homes and seven private residential units. The tenure and housing mix of the existing residential units within the site is provided within Table 12.8.

Table 12.8: Housing Mix of Existing Residential Units on the Site

Type	One-bed	Two-bed	Three-bed	Four-bed	Six-bed	Total
Council-owned Units						
Parlour House	0	0	11	3	1	15
House	0	0	2	2	0	2
Cottage Flat	0	5	0	0	0	5
Private Residential Units						
House	0	0	4	1	0	5
Cottage Flat	0	1	0	0	0	1
Flat above shop	0	1	0	0	0	1
Totals	0	7	17	4	1	29

Housing Need

12.78 The GMSF identifies that affordability has been worsening in recent years and there are a significant number of households who are unable to find suitable homes at an affordable cost. This is in turn driving increasing levels of overcrowding, number of individuals renting properties and numbers of younger people living longer with parents.

12.79 The Greater Manchester Strategic Housing Market Assessment (January 2019) produced by the Greater Manchester Combined Authority identified that the annual housing need for Manchester is 2,584 new homes per

year and is across Greater Manchester is 10,583 new homes per year. Over the local plan period 201,000 net additional dwellings are needed.

12.80 One in five homes in Greater Manchester are in the social housing sector and 95% of those are rented at social rents, which are generally substantially below private sector rents. Over 85,000 households were on local authorities housing registers in 2016/17, of which almost 26,000 were assessed as having a priority need for a home. The Greater Manchester Strategic Housing Market Assessment therefore identified the total current affordable housing need (gross) in Manchester was 4,697 and across Greater Manchester was 29,905 across the local plan period, which equates to a net annual affordable housing need of 1,156 in Manchester and 4,678 across Greater Manchester.

12.81 The MCC Core Strategy (2012) identified a requirement to provide approximately 60,000 new dwellings 2009 - 2027, equating to an average of 3,333 units per year. The site is situated within the 'North Manchester' area, which is anticipated to deliver approximately 11,840 new residential units 2009-2027.

Social and Community Infrastructure

Existing Education Facilities

12.82 There are 31 primary schools within 2.5km of the site. Their current roll and capacity (as of October 2020) are outlined in Table 12.9.

Table 12.9: Existing Primary Schools within 2.5km of the Site (as of October 2020)

School Name	Current Roll	Current Capacity	Net Capacity
Saviour Church of England (CofE) Primary School	221	180	-41
St Malachy's Roman Catholic (RC) Primary School	235	248	+13
St. Augustine's CofE Primary School	226	240	+14
Manchester Communication Primary Academy	435	420	-15
Abbott Community Primary School	240	240	0
St. Edmund's RC Primary School	226	240	+14
St. Patrick's RC Primary School	206	250	+44
Park View Primary School	441	459	+18
Oasis Academy Temple	706	709	+3
St. Chad's RC Primary School	238	240	+2

School Name	Current Roll	Current Capacity	Net Capacity
Oasis Academy Harpur Mount	417	420	+3
Irk Valley Community School	481	510	+29
New Islington Free School	312	420	+108
Holy Trinity CofE Primary School	441	472	+31
St. Anne's RC Primary School	205	218	+13
Abraham Moss Community School	1844	1830	-14
Unity Community Primary	266	420	+154
Lily Lane Primary School	650	610	-40
Moston Lane Community Primary School	481	480	-1
Marlborough Road Academy	374	480	+106
Cheetham CofE Community Academy	681	690	+9
Cheetwood Primary School	215	210	-5
St. Anne's RC Primary School Crumpsall Manchester	441	454	+13
Briscoe Lane Academy	606	315	-291
St. Dunstan's RC Primary School	356	360	+4
St. Thomas of Canterbury RC Primary School	509	480	-29
Ravensbury Community School	466	472	+6
Ashbury Meadow Primary School	462	463	+1
Mount Carmel RC Primary School	471	480	+9
Cravenwood Primary Academy	432	450	+18
CofE School of the Resurrection	233	210	-23
Crumpsall Lane Primary School	450	460	-10
Total	13,967	14,130	+163

* Data not available.

12.83 Table 12.9 shows that the 31 primary schools within 2.5 km of the site have a surplus of 163 primary places altogether.

12.84 The existing secondary schools within 2.5 km of the site and their current roll and capacity (as of October 2020) are outlined in Table 12.10.

Table 12.10: Existing Secondary Schools within 2.5km of the Site (as of October 2020)

Secondary School	Current Roll	Current Capacity	Net Capacity
Manchester Communication Academy	1,176	1,200	+24
Eden Girls' Leadership Academy, Manchester	364	800	+436
Eden Boys' Leadership Academy, Manchester	364	800	+436
Total	1,904	2,880	+896

12.85 Table 12.10 shows that there are three schools within 2.5 km of the site, with a surplus of 896 secondary places altogether.

12.86 In addition to the schools noted in Table 12.9 and Table 12.10, there is the Oasis Academy temple within 2.5 km of the site which provides for education for 3-16 years old. The school capacity is 709 with 706 existing pupils on the roll (therefore overall capacity of +3).

Existing Health Facilities

12.87 The nearest hospital with an accident and emergency (A&E) department is North Manchester General Hospital, situated approximately 1.7km to the northwest of the site.

12.88 There are 17 General Practitioner (GP) surgeries within the study area. Table 12.11 shows the patient roll (based on data gathered as part of the Health and Wellbeing MCC Board in January 2019) and capacity of the GP's located within the study area.

Table 12.11: Existing GP Surgeries within the study area

Practice	No. of registered patients	No. of GPs	Ratio of Registered GP: Registered Patients
Higher Blackley, Harpurhey and Charlestown Primary Care Network			
Beacon Medical Centre	4,054	3	1: 1,351
The Avenue Medical Centre	10,386	8	1:1,298
Dam Head Medical Centre	2,790	2	1:1,395

Practice	No. of registered patients	No. of GPs	Ratio of Registered GP: Registered Patients
Charlestown Medical Practice	4,069	5	1:814
Valentine Medical Centre	11,043	7	1:1,578
The Singh Medical Practice	3,851	2	1:1,926
Conran Medical Centre	6,676	3	1:2,225
Willowbank Surgery	1,780	2	1:890
Fernclough Surgery	1,989	1	1:1,989
Miles Platting, Newton Heath and Moston Primary Care Network			
Hazeldene Medical Centre	6,783	7	1:969
Simpson Medical Practice	5,649	3	1:1,883
St George's Medical Centre	7,012	2	1:3,506
Newton Heath Medical Centre	6,744	2	1:3,372
Droylsden Road Family Practice	4,387	3	1: 1,462
Brookdale Surgery	2,341	3	1:780
Whitley Road Medical Centre	6,683	5	1:1,337
Victoria Mill Medical Practice	2,631	3	1:877
Total	88,868	61	1:1,457

12.89 Based on the information outlined in Table 12.11, there is a total of 88,868 of patients registered at the GPs and 61 GPs within the study area. Therefore, the overall ratio of GPs : patients is 1:1,457, which is below the national target of 1:1,800.

12.90 There are 16 dentist surgeries within 2.5km of the site and a number are accepting new patients. There are also a large number of pharmacists and opticians within 2.5 km of the site, predominantly located in Manchester City Centre.

Existing Community Facilities

12.91 There are no existing community facilities within the site. However, there are a large number of community facilities within 2.5km of the site, including:

- Community centres (e.g. St. George's Youth and Community Centre, The Grange Community Resource Centre, Hallé St. Peters etc.);
- Places of Worship (e.g. Christ Temple International Church, St. Patrick's Roman Catholic Church, St. Cuthbert's, Masjid Sultan Bahu Manchester, Khizra Mosque and Minyan Lane Orthodox Synagogue etc.);
- Libraries and museums (e.g. Miles Platting Community Library, Manchester Jewish Museum and Museum of Transport - Greater Manchester etc.); and
- Theatres (e.g. Hope Mill Theatre and Square Circle Theatre etc.).

Open and Recreational Space

12.92 There are no open spaces within the site. However, there is one adjacent to the Site, Collyhurst Park / Willert Street Park which includes a five-a-side football pitch, children's play area and Multi-Use Games Area (MUGA). There are a further seven open and recreational spaces within 800m of the site. Within the wider Northern Gateway SRF area, there are numerous green / open spaces. However, the quality and uses of these spaces are extremely limited, with a basic amenity offer of grass verges and cleared land.

12.93 The site lies within the 'North Manchester Area' defined within the City Wide Open Spaces, Sport & Recreation Study.

12.94 The site lies within the 'North Manchester Area' defined within the City Wide Open Spaces, Sport & Recreation Study. The 2009 study states that overall the quantity of open space in North Manchester is high, with provision of City Parks, natural and semi-natural open spaces, amenity spaces and facilities for young people exceeding minimum expected standards. In addition, the study notes that whilst there are shortfalls in the quantity of local parks, the city and regional parks in the North Manchester area offset this shortfall. However, the study states that the quality of open spaces in the North Manchester area is considered to be below average and the poorest in the City.

Embedded Mitigation

Demolition and Construction

12.95 There are no embedded mitigation measures of relevance to socioeconomics.

Completed Development

12.96 There are no embedded mitigation measures of relevance to socioeconomics.

Potential Impacts

Demolition and Construction

Direct, Indirect and Induced Job Creation

12.97 Spending during the demolition and construction stage will generate new direct employment opportunities. Using the industry standard approach set out earlier in this chapter, it is estimated that there will be 50 direct jobs per annum during demolition and construction.

12.98 In addition to the direct employment opportunities, the demolition and construction works will lead to an increase in spending in the local economy by contractors. Such multiplier effects are anticipated both in terms of the sourcing of supplies (indirect employment across wider supply chains) and spending by on the site workers (induced employment) within and outside of their working hours. Based on a multiplier of 2.7, it is anticipated that there will be 85 additional indirect and induced jobs generated per year during demolition and construction.

12.99 Within Manchester, 2.0% of the employee workforce was employed in Sector F - Construction as of 2019, which equates to approximately 8,000 employees. Based on that assumption that an average of direct 50 jobs will be generated each year during the demolition and construction stage, this represents approximately 0.63% of the employees in Sector F - Construction at the district level (Manchester). In addition, 85 indirect and induced jobs will be created by the demolition and construction works per annum which represents 0.1%< of the total employee workforce in Manchester. Therefore, overall, the magnitude of impact is considered to be minor.

12.100 As a result of a rating of minor magnitude of impact and high sensitivity of receptors (due to the levels of economic inactivity which are above the regional and national averages and the high levels of relative deprivation), the likely effects of the direct, indirect and induced job creation during demolition and construction are considered to be **moderate beneficial** in the short-term at the district level which is **significant**.

12.101 The individuals employed in Sector F - Construction account for 4.3% of the jobs within Greater Manchester as of 2019, which equates to approximately 58,000 employees. Based on the assumption that an average of 50 direct jobs will be generated each year during the demolition and construction stage, this represents approximately 0.1%< of the employees in Sector F - Construction at the sub-regional level (Greater Manchester). In addition, 85 indirect and induced jobs will be created by the demolition and construction works per annum which represents 0.1%< of the total employee workforce across Greater Manchester. Therefore, overall the magnitude of impact is considered to be negligible.

12.102 As a result of a negligible magnitude of impact and medium sensitivity of receptors (due to the levels of economic inactivity, which are slightly higher than the regional and national averages), the likely effects of the direct, indirect and induced job creation during demolition and construction are considered to be **negligible** in the short-term at the sub-regional level which is **not significant**.

Expenditure from the Temporary Construction Workforce

12.103 Based on the assumption that 60% of the FTE construction workers would spend £6 a day for 232 days a year, a gross spend of circa £41,760 is expected. This total expenditure would be for the entire demolition and construction stage, which is anticipated to be approximately 2.5 years.

12.104 Given that much local retail provision is located in areas neighbouring the site, it is anticipated that localised spending is unlikely to leak other parts of Manchester, bringing benefits primarily at the district level. Therefore, the magnitude of impact at the district level is considered to be minor and at the sub-regional level is considered to be negligible.

12.105 As a result of a minor magnitude of impact and high sensitivity of receptors (due to the levels of economic inactivity which are above the regional and national averages and the high levels of relative deprivation), the likely effects of the expenditure from the temporary construction workforce are considered to be **moderate beneficial** in the short-term at the district level which is **significant**.

12.106 As a result of a negligible magnitude of impact and medium sensitivity of receptors (due to the levels of economic inactivity, which are slightly higher than the regional and national averages), the likely effects of the expenditure from the temporary construction workforce are considered to be **negligible** in the short-term at the sub-regional level which is **not significant**.

Completed Development

Direct, Indirect and Induced Job Creation

12.107 Due to the commercial floorspace proposed, it is anticipated that employment opportunities will be created by the completed development.

12.108 The gross number of direct FTE / jobs was estimated on the basis of the quantum of the floorspace within the proposed development using the Employment Densities Guide.

12.109 For the purpose of the assessment, these jobs are assumed to be created both at the local level (i.e. Manchester) and the regional level (i.e. Greater Manchester).

12.110 The gross operational employment calculations are set out in Table 12.12.

Table 12.12: Gross Operational Employment Calculations

Area	Net Internal Area (NIA) (sqm)	NIA Floorspace per FTE (sqm)	Estimated gross FTE
Commercial	162.6	20 – 10*	8 - 16

Notes to **Table 12.12:**
All figures are rounded.
* Based on 10 sqm NIA for 'B1a Offices – General Office: Finance and Insurance 'and 20 sqm NIA as the upper figure for 'A1: Retail – High Street' set out in The Employment Density Guide.

12.111 Based on the approach set out in the Additionality Guide, the net employment calculations for the proposed development are set out in Table 12.13.

12.112 In addition to the direct jobs generated by the completed development, indirect jobs are likely to be created as a result of an increase in spending on goods, suppliers and services. The spending of wages by the employees of firms supplying goods and services to the completed development will further support induced employment in the economy. These were considered as part of the 'multiplier effect' noted in Table 12.13.

Table 12.13: Net Operational Employment Calculations

Gross direct jobs	8 - 16
Leakage (25%)	2 - 4
Gross net jobs	6 - 12
Displacement (25%)	2 - 3
Net direct jobs	4-9
Multiplier (1.1)	1

12.113 The completed development is estimated to generate a direct, net 4 - 9 FTE jobs and create 1 indirect and induced FTE job.

12.114 As set out above the industry sector which the proposed development would likely draw employees from is assumed to be industry sector G: Wholesale and Retail Trade; Repair of Motor Vehicle and Motorcycles. Compared with the number of employees within this industry sector in MCC (48,000), the direct jobs generated by the completed development represents approximately 0.1%<. Accounting for the limited number of additional indirect and induced jobs generated by the proposed development, the magnitude of impact is considered to be negligible at the district level.

12.115 As a result of a rating of negligible magnitude of impact and high sensitivity of receptor (due to the levels of economic inactivity, which are above the regional and national averages, and high levels of relative deprivation), the likely effects of direct, indirect and induced job creation from the completed development are considered to be **negligible** significance in the long-term at the district level which is **not significant**.

12.116 The individuals employed in the industry sector G: Wholesale and Retail Trade; Repair of Motor Vehicle and Motorcycles accounts for 16.2% of the jobs within the Greater Manchester as of 2019, which equates to approximately 220,000 employees. The direct jobs being generated by the completed proposed development represents approximately 0.01%< of the employees in the relevant industry sector at the sub-regional level (Greater Manchester). Accounting for the limited number of indirect and induced jobs generated by the proposed development, the magnitude of impact is therefore considered to be negligible at the sub-regional level.

12.117 As a result of a rating of negligible magnitude of impact and medium sensitivity of receptor (due to the levels of economic inactivity, which are slightly above the regional and national averages), the likely effects of direct, indirect and induced job creation from the completed development are considered to be **negligible** in the long-term at the sub-regional level which is **not significant**.

Increase in Household Spend

12.118 The new residential population within the completed development would result in increased household spending in the local area.

12.119 The report on Family Spending provides data for the financial year ending 2019 on household expenditure. Family Spending reveals that the average weekly household expenditure in the North West for the period between the financial year ending 2017 and financial year ending 2019 was £454.70 (excluding mortgage interest payments and Council Tax, licences fines and transfers, holiday spending and money transfers and credit), which is equivalent to an annual figure of £23,644.40. Assuming that VAT of 20% had been paid on all of this spending, the average annual household expenditure (net of indirect taxation and housing) was £18,915.52 for the North West during the period April 2017 to March 2019.

12.120 Based on this analysis and the net addition of 244 households to the local area, it is estimated that the gross additional household expenditure generated by the new residential population at the Site would be around £4,615,386.88 per annum. However, as there are currently 29 residential units on the site, a reduction of the household spending associated with these units has been applied to this total, which equates to £548,550.08. As it is assumed that there will be residents relocating from within the same area and a degree of this spending would be spent outside the district area, a further 25% reduction for 'leakage' has been applied. Therefore, the net additional household expenditure generated by the new residential population at the proposed development was estimated to be £3,050,127.6 per annum. In the context of household spending by existing communities

within the district this is considered to represent a minor magnitude of impact. At the sub-regional level, this is considered to represent a negligible magnitude of impact.

12.121 As a result of a rating of minor magnitude of impact and high sensitivity of receptors (due to the levels of economic inactivity, which are above the regional and national averages, and high levels of relative deprivation), the likely effects from an increase in household spend from the completed development are considered to be of **moderate beneficial** significance in long-term at the district level which is **significant**.

12.122 As a result of a rating of negligible magnitude of impact and medium sensitivity of receptors (due to the levels of economic inactivity, which are slightly above the regional and national averages), the likely effects from an increase in household spend from the completed development are considered to be **negligible** in the long-term at the sub-regional level which is **not significant**.

Increase in Housing Stock

12.123 The proposed development will involve the demolition of the existing properties within the site and provide 244 residential units. The phasing of the proposed development has been designed to ensure that the new properties are available for occupation prior to the demolition of the existing units to ensure that there are no displacement effects on the resident population.

12.124 The unit mix and tenure of the new units is outlined in Table 12.14.

Table 12.14: Proposed Housing Mix and Tenure

House Type	Tenure		Total
	Private	Social	
Houses			
HT01 (2B4P)	56	0	56
HT02 (3B5P)	72	15	87
HT03 (4B6P)	12	5	17
HT04 (4B6P)	4	2	6
HT055B7P	0	1	1
HT06 3B5P	0	1	1
Apartments	0	76	76
Total	**144**	**100**	**244**

12.125 On the basis that the proposed development will provide new units of high-quality that meet all relevant current standards, these have been treated as a wholly new units for the purposes of the evaluation in this chapter.

12.126 In the context of the MCC Core Strategy housing targets, the proposed development represents 0.41% of the total housing target 2009-2027 and 2.1% of the units to be delivered within the North Manchester area within this period. The proposed development will contribute 9.4% of the annual housing need of 2,584 in Manchester and 2.31% of the annual need across Greater Manchester identified in the GMSF.

12.127 The proposed development also represents 2.13% of the total identified affordable housing need within Manchester (4,697) and 8.65% of the annual affordable housing need. In the context of Greater Manchester, the Development represents 0.33% of the total affordable housing need and 2.14% of the annual need.

12.128 Overall, the magnitude of impact associated with the completed development in relation to the provision of housing stock and contribution towards the identified annual housing need is considered to be moderate at the district level and minor at the sub-regional level.

12.129 As a result of the moderate magnitude of impact and medium sensitivity of receptors (due to the identified shortfall in the availability of housing), the likely effects related to an increase in housing stock are considered to be of **moderate beneficial** significance in the long-term at the district level which is **significant**.

12.130 As a result of the minor magnitude of impact and medium sensitivity of receptors (due to the identified shortfall in the availability of housing), the likely effects related to an increase in housing stock are considered to be of **minor beneficial** significance in the long-term at the sub-regional level which is **not significant**.

Change in Demand on Social and Community Infrastructure

12.131 New residents help to sustain essential local services, such as those provided by education, healthcare and community facilities. However, they also generate additional demands for social and community infrastructure.

12.132 As noted above, the proposed development will comprise 244 residential units. Based on an average of 2.3 persons per dwelling, the proposed development is estimated to yield 561 individuals. For the purposes of the assessment, it has been assumed that these individuals are 'new' so that a worse-case assessment is undertaken.

Education

12.133 Based on a pupil product ratio calculation of 0.33 primary places per unit, it is estimated that there would be 81 children of primary school age generated by the completed development. Based on the data presented in Table 12.9, there is a surplus of 106 primary school places within the study area. Therefore, there is sufficient capacity to accommodate the primary school aged children generated by the completed development. As such, the magnitude of impact is considered to be negligible.

12.134 As a result of the negligible magnitude of impact and low sensitivity of primary educational facilities (due to the existing capacity within the area), the likely effects on primary educational facilities are considered to be **negligible** in the long-term at the local level which is **not significant**.

12.135 Based on a pupil product ratio calculation of 0.23 secondary places per unit, it is estimated that there would be 56 children of secondary school age generated by the completed development. Based on the data presented in Table 12.10, there is a surplus of 896 secondary school places within the study area. Therefore, there is sufficient capacity to accommodate the secondary school aged children generated by the completed development. As such, the magnitude of impact is considered to be negligible.

12.136 As a result of the negligible impact of impact and the low sensitivity of secondary educational facilities (due to the existing capacity within the area), the likely effects on secondary educational facilities are considered to be **negligible** in the long-term at the local level which is **not significant**.

Healthcare

12.137 The completed development will lead to an increase in the number of patients in the local area. As noted above, the proposed development is estimated to yield 561 individuals in total.

12.138 There are 16 dentist surgeries within 2.5 km of the site, a number of which are accepting new patients. There are also pharmacists and opticians present within the surrounding area. However, the need and capacity of these health services cannot be estimated from available data. Therefore, the change in the demands on dentists, pharmacists and opticians was considered qualitatively.

12.139 As noted in the baseline conditions section the current GP to patient ratio is lower (at 1:1,457) than the national target of 1 GP to 1,800 patients, indicating a surplus in the local GP provision. Whilst there would be an increase in demand due to the new resident population of the proposed development, the total estimated population represents approximately 0.63% of the existing total registered patients in the area and would only generate the demand for 0.3 GPs. Given this it is considered that the existing GP surgeries could absorb the additional demands from the new residents and therefore, the magnitude of impact is considered to be negligible.

12.140 As a result of the negligible magnitude of impact and medium sensitivity of receptor (due to the deficit in existing GP provision in the local area), the likely effects on primary healthcare facilities are considered to be of **negligible** significance in the long-term at the local level which is **not significant**.

Community Facilities

12.141 As noted in the Baseline Conditions section, there are a number of community facilities, such as community centres, places of worship, libraries and museums and theatres within 2.5km of the site. There is no available data in relation to the need for such facilities in relation to population. Therefore, the effect is considered qualitatively.

12.142 It is anticipated that the existing community facilities could absorb requirements given the number and variety of facilities available in the area surrounding the site. This will also have the benefit of increasing participation in existing community groups within Manchester, which will assist with the integration of the new proposed residential community. On the basis that the existing community facilities have sufficient capacity to accommodate the new population generated by the proposed development, the magnitude of impact is considered to be negligible.

12.143 As a result of the negligible magnitude of impact and the low sensitivity of community facilities (due to the anticipated capacity of such facilities), the likely effects on community facilities are considered to be **negligible** in the long-term at the local level which is **not significant**.

Change in Demand on Open and Recreational Space

12.144 As noted in the Baseline Conditions section, the site is situated adjacent to Collyhurst / Willert Street Park, which includes a 5-a-side football pitch, children's play area and a MUGA. Within the wider Northern Gateway SRF area, there are numerous green / open spaces. However, the quality and uses of these spaces are extremely limited, with a basic amenity offer of grass verges and cleared land.

12.145 As discussed above, the quantity of open space in North Manchester is high, with provision of City Parks, natural and semi-natural open spaces, amenity spaces and facilities for young people exceeding minimum expected standards. However, the study states that the quality of open spaces in the North Manchester area is considered to be below average and the poorest in the City.

12.146 It is anticipated that the residents of the proposed development will increase demand on the existing network of accessible open and recreational spaces. However, the proposed development will provide an upgraded Collyhurst / Willert Street Park, with new play areas, public lawns, ornamental planting and wildflower meadow. As such, overall the magnitude of impact is considered to be minor and beneficial.

12.147 The sensitivity of open and recreational spaces is considered to be moderate due to the poor-quality spaces present within the local area. The magnitude of impact is minor. Therefore, the likely effects related to open and recreational spaces are considered to be of **minor beneficial** significance in the long-term at the local level which is **not significant**.

Mitigation Measures

Demolition and Construction

Direct, Indirect and Induced Job Creation

12.148 To maximise the beneficial effects associated with demolition and construction, a Local Employment Scheme would be implemented in conjunction with MCC to retain some of the employment benefits in the local area.

Expenditure from the Temporary Construction Workforce

12.149 As the effects of the demolition and construction stage are beneficial, no mitigation is considered to be required.

Completed Development

Direct, Indirect and Induced Job Creation

12.150 As the effects of the proposed development are insignificant, no mitigation is considered to be required.

Increase in Household Spend

12.151 As the effects of the proposed development are beneficial, no mitigation is considered to be required.

Increase in Housing Stock

12.152 As the effects of the proposed development are beneficial, no mitigation is considered to be required.

Change in Demand on Social and Community Infrastructure

Education

12.153 As the effects of the proposed development are considered to be insignificant, no mitigation is considered to be required.

Healthcare

12.154 As the effects of the proposed development are considered to be insignificant, no mitigation is considered to be required.

Community Facilities

12.155 As the effects of the proposed development are considered to be insignificant, no mitigation is considered to be required.

Open and Recreational Space

12.156 As the effects of the proposed development are considered to be beneficial, no mitigation is considered to be required.

Residual Impacts

12.157 The residual impact assessment presented in this section assumes that the mitigation described in the section above has been implemented.

Demolition and Construction

- Direct, Indirect and Induced Job Creation: **Moderate beneficial** in the short-term at the district level which is **not significant** and **negligible** in the short-term at the sub-regional level which is **not significant**; and
- Expenditure from the Temporary Construction Workforce: **Moderate beneficial** in the short-term at the district level which is **not significant** and **negligible** in the short-term at the sub-regional level which is **not significant**.

Completed Development

- Direct, Indirect and Induced Job Creation: **Negligible** in the long-term at the district and at the sub-regional levels which is **not significant**;
- Increase in Household Spend: **Moderate beneficial** in the long-term at the district level which is **significant** and **negligible** at the sub-regional level which is **not significant**;
- Increase in Housing Stock: **Moderate beneficial** in the long-term at the district level which is **significant** and **minor beneficial** at the sub-regional level which is **not significant**; and
- Change in Demand on Social and Community Infrastructure:
    - Education: **Negligible** in the long-term at the local level which is **not significant**.
    - Healthcare: **Negligible** in the long-term at the local level which is **not significant**.
    - Community facilities: **Negligible** in the long-term at the local level which is **not significant**.
- Open and Recreational Space: **Minor beneficial** in the long-term at the local level which is **not significant**.

12.158 A summary is provided in Table 12.15.

Table 12.15: Residual Effects Summary

Description of Effect	Potential impact including significance	Mitigation	Residual Effect including significance
Construction and Demolition			
Direct, indirect and induced job creation	Moderate beneficial at the district level (significant). Negligible at the sub-regional level (not significant).	Local Employment Scheme.	Moderate beneficial at the district level (significant). Negligible at the sub-regional level (not significant).
Expenditure from the temporary construction workforce	Moderate beneficial at the district level (significant). Negligible at the sub-regional level (not	n/a.	Moderate beneficial at the district level (significant). Negligible at the sub-regional level (not

Description of Effect	Potential impact including significance	Mitigation	Residual Effect including significance
	significant).		significant).
Completed Development			
Direct, indirect and induced job creation	Negligible at the district level (not significant). Negligible at the sub-regional level (not significant).	n/a	Negligible at the district level (not significant). Negligible at the sub-regional level (not significant).
Increase in household spend	Moderate beneficial at the district level (significant). Negligible at the sub-regional level (not significant).	n/a	Moderate beneficial at the district level (significant). Negligible at the sub-regional level (not significant).
Increase in housing stock	Moderate beneficial at the district level (significant). Minor beneficial at the sub-regional level (not significant).	n/a	Moderate beneficial at the district level (significant). Minor beneficial at the sub-regional level (not significant).
Change in demand on social and community infrastructure	Education Primary school capacity: Negligible at the local level (not significant). Secondary school capacity: Negligible at the local level (not significant). Healthcare Negligible at the local level (not significant). Community Facilities Negligible at the local level (not significant).	n/a	Education Primary school capacity: Negligible at the local level (not significant). Secondary school capacity: Negligible at the local level (not significant). Healthcare Negligible at the local level (not significant). Community Facilities Negligible at the local level (not significant).

Description of Effect	Potential impact including significance	Mitigation	Residual Effect including significance
Change in demand for open and recreational space	Minor beneficial at the local level (not significant).	n/a	Minor beneficial at the local level (not significant).

Assessment of In-Combination Effects

12.159 This details the potential in-combination effects of the development of the wider Northern Gateway Strategic Regeneration Framework (the 'wider development').

Approach

12.160 In line with the approach set out within Chapter 2: Approach, an assessment of cumulative effects arising from the proposed development in conjunction with the wider development is reported within this chapter.

12.161 Given the limited information available on the socioeconomic effects arising from the wider development (as no applications have yet been submitted for the wider development), the assessment has been based on assumptions and has drawn on available information.

12.162 Where there is insufficient information, the significance of the in-combination effects can only be determined as being of 'greater' or 'lesser' that than assessed for the proposed development.

Potential Impacts

Demolition and Construction Cumulative Impacts

Direct, Indirect and Induced Job Creation

12.163 With respect to direct, indirect and induced job creation, the demolition and construction stage is anticipated to generate likely effects of **moderate beneficial** significance at the district level (Manchester) and **negligible** effects at the sub-regional level (Greater Manchester) for the proposed development in isolation.

12.164 It is assumed that there will be further direct, indirect and induced job creation associated with the wider development. Assuming that the demolition and construction stages are concurrent, there are likely in-combination effects in relation to direct, indirect and induced job creation. This is considered to be of **greater beneficial** significance than that concluded for the proposed development (i.e. **moderate beneficial** significance at the district level and **negligible** at the sub-regional level).

Expenditure from the Temporary Construction Workforce

12.165 With respect to expenditure from the temporary construction workforce during the demolition and construction stage, there is anticipated to be likely effects of **moderate beneficial** significance at the district level

(Manchester) and **negligible** effects at the sub-regional level (Greater Manchester) for the proposed development in isolation.

12.166 It is assumed that there will be further expenditure from the temporary construction workforce associated with the wider development. Assuming that the demolition and construction stages are concurrent, there are likely in-combination effects in relation to expenditure from the temporary construction workforce. This is considered to be of **greater beneficial** significance than that concluded for the proposed development (i.e. **moderate beneficial** significance at the district level and **negligible** at the sub-regional level).

Completed Development

Direct, Indirect and Induced Job Creation

12.167 The wider development is anticipated to have significant in-combination effects in conjunction with the proposed development due to the delivery of employment-generating uses (e.g. commercial, retail, social, community, health and education facilities), assuming that the operational stages are concurrent.

12.168 As reported above, the completed development is anticipated to generate effects of **negligible** significance on economic receptors (i.e. individuals of working age) at the district level (Manchester) and sub-regional level (Greater Manchester). It is assumed that there will be further direct, indirect and induced employment opportunities associated with the wider development. Therefore, the likely residual in-combination effects in relation to direct, indirect and induced job creation are considered to be of **greater beneficial** significance than that concluded for the completed development (i.e. **negligible** at the district and sub-regional levels).

Increase in Household Spend

12.169 The wider development is anticipated to have **significant** in-combination effects in conjunction with the proposed development, assuming that the operational stages are concurrent, as it includes the provision of residential units, which would increase the residential population within Manchester and Greater Manchester.

12.170 Based on the overall unit numbers proposed by the wider development together with the proposed development, the net additional household expenditure generated by the new residential population would be around £283,732,800 per annum. The likely residual in-combination effects related to an increase in household spending are therefore considered to be **major beneficial** in the long-term at the district and sub-regional levels.

Increase in Housing Stock

12.171 The wider development is anticipated to have significant in-combination effects in conjunction with the proposed development assuming that the operational stages are concurrent.

12.172 The proposed development together with the wider development would contribute to MCC's and Greater Manchester's housing targets, by providing circa 15,000 new residential units. Collectively the proposed development and wider development would represent 7.5% of the total housing target of circa 200,000 new

residential units identified in the GMSF. In the context of the MCC local plan requirements, the proposed development and wider development would result in the delivery of up to 25% of the housing requirement set out in the MCC Core Strategy over the Local Plan period (2009-2027).

12.173 Therefore, the likely in-combination effects in relation to increase in housing stock are considered to be **major beneficial** significance in the long-term at the district and sub-regional levels.

Change in Local Service Demand

Education

12.174 The wider development together with the proposed development would result in the introduction of additional residents, which would increase the pressure on local primary and secondary schools. Therefore, the wider development is anticipated to have significant in-combination effects in conjunction with the proposed development assuming that the operational stages are concurrent.

12.175 As set out earlier in this chapter, is has been proven that the proposed development (considered in isolation) would not lead to any significant pressure upon primary or secondary school capacity. With reference to the wider development, it is assumed that the needs for primary and secondary school places will be considered on a case by case basis by MCC during the determination of the wider development (or parts of it). As such, it is reasonable to assume that any necessary contributions to offset any significant adverse effects would be secured via a Section 106 contribution.

12.176 In view of the above, the likely residual in-combination effect on the capacity of primary and secondary schools is considered to be **negligible**.

Healthcare

12.177 As reported earlier in this chapter, the proposed development (in isolation) is expected to result in a **negligible** effect on healthcare facilities.

12.178 The wider development is anticipated to have significant in-combination effects in conjunction with the proposed development assuming that the operational stages are concurrent. This is because the wider development would increase the residential population and would therefore have the potential to increase the pressure on healthcare services.

12.179 The wider development is anticipated to deliver health facilities. In addition, these issues would be considered by MCC in the determination of the planning application(s) in the case of the wider development (or parts of it) with any necessary contributions secured via a Section 106 obligation. It is therefore assumed that in the event the proposed health facilities within the wider development cannot absorb all requirements from the new residential population financial contributions would be paid in mitigation against any adverse effects on healthcare services.

12.180 Taking the above measures into account, it was considered that the likely residual in-combination effects on healthcare services would be **negligible**.

Community Facilities

12.181 The wider development is anticipated to have significant in-combination effects in conjunction with the proposed development assuming that the operational stages are concurrent. This is because all of the wider development would increase the residential population and would therefore have the potential to increase the pressure on community facilities.

12.182 As noted earlier in this chapter, there are a variety of community facilities within the vicinity of the Site which it is assumed have capacity to accommodate the additional population generated by the completed development. Therefore, the effects of the proposed development (in isolation) are considered to be **negligible**.

12.183 The wider development is anticipated to deliver a mix of community facilities / resources. Where not provided, it is assumed that there is sufficient capacity within existing facilities or that any necessary financial contributions are adequately considered and secured at the time when the wider development (or parts of the development) are consented by MCC.

12.184 Therefore, the likely residual in-combination effect on community facilities from the proposed development and the wider development would be considered to be **negligible**.

Change in Demand for Open Space

12.185 The wider development is anticipated to have significant in-combination effects in conjunction with the proposed development assuming that the operational stages are concurrent. This is because the wider development would increase the residential population and would therefore have the potential to increase the pressure on open spaces.

12.186 As set out earlier in this chapter, is has been proven that the proposed development (considered in isolation) would not lead to any significant pressure upon open spaces.

12.187 Open space for the wider development is envisaged to include the creation of a City River Park alongside the River Irk corridor, enhancements to existing green and recreational spaces and the delivery of private and public amenity areas. Where public space is provided, this would be a resource for the community as well as future occupiers of the wider development.

12.188 It is also assumed that mechanisms for securing any necessary financial contributions, issues relating to demand for open and recreational space will be considered at the appropriate stage by MCC.

12.189 Therefore, the likely residual in-combination effects on open space from the proposed development and the wider development is considered to be of **greater beneficial significance** than that concluded for the proposed development (i.e. **minor beneficial** significance at the local level).

Mitigation Measures

Demolition and Construction

12.190 No additional mitigation measures are considered to be required during the demolition and construction phase of the proposed development.

Completed Development

12.191 No additional mitigation measures are considered to be as required during the operational phase of the proposed development.

Residual Impact

12.192 The residual cumulative impacts would be the same as the pre-mitigation effects.

Conclusions

12.193 There were a lower proportion of individuals classified as 'Economically Active' in Manchester (73.1%) compared to the averages across Greater Manchester (77.1%), the North West (78.3%) and Great Britain (79.4%). Conversely, the percentage of working age classified as 'Economically Inactive' was higher in Manchester (26.9%) than Greater Manchester (22.9%), North West (21.7%) and Great Britain (20.6%). The Indices of Multiple Deprivation use a combination of information relating to income, employment, education, health, skills and training, barriers to housing and services and crime to create an overall score of deprivation. Manchester was ranked 6 out of 326 local authorities in England and Greater Manchester was ranked 3 out of 36 LEPs across England in 2019.

12.194 During demolition and construction, it is anticipated that there would be an average of 50 jobs created per annum. In addition, there is estimated to be 85 indirect and induced jobs created per year. Overall, the likely residual effects related to direct, indirect and induced job creation are considered to be of **moderate beneficial** significance at the district level (Manchester) and **negligible** at the sub-regional level (Greater Manchester). There would also be effects of **moderate beneficial** significance at the district level and **negligible** significance at the sub-regional level relating to expenditure from the temporary construction workers on sustenance and amenities.

12.195 With the completed development in place, it is anticipated that 4 - 9 direct net FTEs / jobs will be created. Furthermore, there are likely to be an additional 1 indirect and induced FTE / job associated with the completed development due to spending in the local economy by employees and contracts placed with suppliers and

contractors. Overall, the residual effects related to direct, indirect and induced job creation are considered to be of **negligible** significance at the district (Manchester) and sub-regional (Greater Manchester) levels.

12.196 The residents within the completed development would lead to an increase in household spend within the district and sub-regional areas. This is considered to represent an effect of **moderate beneficial** significance at the district level and a **negligible** effect at the sub-regional level.

12.197 The provision of 244 residential dwellings as part of the proposed development would contribute to housing targets, accounting for over 0.41% of the MCC total housing target over the Local Plan period and 2.31% of the annual need across Greater Manchester identified in the GMSF. This is considered to represent an effect of **moderate beneficial** significance at the district level and **minor beneficial** significance at the sub-regional level.

12.198 It is estimated that the proposed development would have an additional resident population of 561of which 81 would be of primary school age and 56 would be of secondary school age. It has been concluded that there is sufficient capacity within existing primary and secondary schools to provide for the additional demand for services that the new population on the site would create and therefore the likely residual effects are **negligible**.

12.199 In terms of primary healthcare facilities, there is a current surplus in GP provision within the local study area and, therefore, the likely residual effects are considered to be **negligible**.

12.200 There are a variety of community facilities within the vicinity of the site which are assumed to have capacity to accommodate the additional population generated by the completed development. Therefore, the likely residual effects on community facilities are considered to be **negligible**.

12.201 Whilst the new residents within the completed development will increase the demand on open and recreational spaces, there are a number of resources / facilities in proximity to the site. In addition, the proposed development will include upgrades and improvements to Collyhurst / Willert Street Park. Given this, the likely residual effects on the demand for open space is considered to be of **minor beneficial** significance.

References

NHS Find a GP Website (https://www.nhs.uk/service-search/find-a-gp)

School Information Service Website (https://www.get-information-schools.service.gov.uk/)

Birmingham Economic Information Centre. The Economic Impact of Development Investment in Birmingham 1998-2010.

Greater Manchester Combined Authority (2019) Greater Manchester Strategic Housing Market Assessment [Online] Available at: https://www.greatermanchester-ca.gov.uk/media/1733/gm-shma-jan-19.pdf [Accessed 01/10/2020].

Greater Manchester Combined Authority (2019) Greater Manchester's Plan for Homes, Jobs and the Environment: Greater Manchester Strategic Framework Revised Draft [Online] Available at: https://www.greatermanchester-ca.gov.uk/media/1710/gm_plan_for_homes_jobs_and_the_environment_1101-web.pdf [Accessed 01/10/2020].

Homes and Communities Agency (2014) Additionality Guide, 4th Edition [Online] Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/378177/additionality_guide _2014 _full.pdf [Accessed 01/10/2020].

Homes and Communities Agency (2015) Employment Densities Guide 3rd Edition [Online] Available at: https://www.gov.uk /government/uploads/system/uploads/attachment_data /file/484133/employment_density_gui de _ 3rd_edition.pdf [Accessed 02/10/2020].

Office for National Statistics (ONS) (2011) Census Data [Online] Available at: https://www.nomisweb.co.uk/ [Accessed 01/10/2020].

ONS. The National Online Manpower Information System (NOMIS) NOMIS Office Labour Market Statistics [Online] Available at: https://www.nomisweb.co.uk/ [Accessed 21/08/2019].

ONS (2019) Annual Survey of Hours and Earnings – Employee Earnings in the UK: 2018 [Online] Available at: https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/bulletins/annualsurveyofhoursandearnings/previousReleases [Accessed 01/10/2020].

Manchester City Council (2012) Core Strategy [Online] Available at: https://secure.manchester.gov.uk/downloads/download/5672/core_strategy [Accessed on 01/10/2020].

Manchester City Council (2016) The Manchester Strategy – Our Manchester [Online] available at: https://www.manchester.gov.uk/downloads/download/6426/the_manchester_strategy [Accessed on 01/10/2020].

Manchester City Council (2019) Northern Gateway Strategic Regeneration Framework [Online] Available at: http://northerngatewaymanchester.co.uk/ [Accessed on 01/10/2020].

Ministry of Housing, Communities and Local Government (MHCLG) English Indices of Deprivation 2019 [Online] Available at: https://www.gov.uk/government/statistics/english-indices-of-deprivation-2019[Accessed 01/10/2020].

PMP on behalf of Manchester City Council (2009) City Wide Open Spaces, Sport & Recreation Study [Online] Available at: https://secure.manchester.gov.uk/downloads/download/1548/core_strategy_evidence [Accessed 29/09/2020].

13. Human Health

Introduction

13.1 This chapter assesses the effects of the proposed development on human health. In particular, it considers the potential effect on biomedical (i.e. physical health) and biopsychological health (i.e. physical health, psychological health and health behaviour). The proposed development comprises 244 residential dwellings with commercial space, residents' communal space, park, access and associated infrastructure – details are provided in chapter 5.

13.2 The chapter describes the methods used to assess the likely significant effects, the baseline conditions currently existing at the site and surroundings, the potential direct and indirect effects of the development arising from the development on human health and wellbeing, the mitigation measures required to prevent, reduce, or offset the identified significant effects and the residual effects. It has been written by Enfusion.

Planning Policy Context

National Planning Policy

National Planning Policy Framework (NPPF)

13.3 The revised NPPF (2019) acknowledges the importance of considering health impacts during the planning process and covers many issues that are directly related to the determinants of health. The NPPF identifies the three overarching objectives – economic, social & environmental – that are *interdependent and need to be pursued in mutually supportive ways* in order to achieve sustainable development (paragraph 8). The social objective should support "*strong, vibrant and healthy communities… by creating a high quality built environment, with accessible local services that reflect the community's needs and support its health, social and cultural well-being*."

13.4 Chapter 8 covers promoting healthy and safe communities, acknowledging that planning policies and decisions should aim to achieve healthy, inclusive and safe places which:

> *"a) promote social interaction, including opportunities for meetings between people who might not otherwise come into contact with each other – for example through mixed-use developments, strong neighbourhood centres, street layouts that allow for easy pedestrian and cycle connections within and between neighbourhoods, and active street frontages.*
>
> *b) are safe and accessible, so that crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesion – for example through the use of clear and legible pedestrian routes, and high quality public space, which encourage the active and continual use of public areas; and*

c) enable and support healthy lifestyles, especially where this would address identified local health and well-being needs – for example through the provision of safe and accessible green infrastructure, sports facilities, local shops, access to healthier food, allotments and layouts that encourage walking and cycling." (paragraph 91).

13.5 Social, recreational and cultural facilities and services should "*support the delivery of local strategies to improve health, social and cultural well-being for all sections of the community*" (paragraph 92). "*It is important that sufficient choice of school places is available to meet the needs of existing and new communities*" (paragraph 94). Public safety should be promoted and "*take into account wider security and defence requirements*" (paragraph 95).

13.6 "*Access to a network of high quality open spaces and opportunities for sport and physical activity is important for the health and wellbeing of communities*" (paragraph 96). Sustainable transport should be promoted and this "*can help improve air quality and public health*" (paragraph 103). "*An effective use of land should be promoted in meeting the need for homes and other uses, while safeguarding and improving the environment and ensuring safe and healthy living conditions*" (paragraph 117). "*Developments should create places that are safe, inclusive and accessible and which promote health and wellbeing…*" (paragraph 127). "*New development must be appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health…*" (paragraph 180).

Public Health England (PHE) Strategy (2019)

13.7 Sets out how PHE intends to protect and improve the public's health and reduce inequalities during 2020 to 2025. The Strategy recognises that the longer term, societal drivers of change represent the principal challenge facing the public's health. However, there are opportunities now – including "*place-based approaches* – and the 10 priorities include *healthier diets, healthier weight*; *cleaner air;* and *better mental health"* with the aim to incorporate the reduction of health inequalities into each of the 10 priorities. The purpose of PHE is to protect and improve the nation's health and reduce health inequalities. This is guided by aims – "*to keep people safe; to prevent poor health; to narrow the health gap; and the support a strong economy"*.

Local Planning Policy

Manchester City Council (MCC) Core Strategy (adopted 2012)

13.8 MCC's Core Strategy is the key document in Manchester's Local Development Plan. It is founded on a Vision to 2027 that includes "*an increased and sustainable healthy population…*". The following policies are relevant to Health:

- Policy SP1 Spatial Principles includes requirement that development should make a positive contribution to neighbourhoods including "*making a positive contribution to the health, safety and wellbeing of residents*".
- Policy CC3 Housing advises that the most intensive development of housing will be in the City Centre with key locations for residential development including the Northern Quarter.

- Policy CC6 High Density Development is a location where land should be used to maximise its efficiency.
- Policy CC7 Mixed Use Development guides that the City Centre presents the most viable opportunities for mixed use development.
- Policy H1 Overall Housing Provision defines high-density developments as those with over 75 units and states that they are appropriate in the City Centre.
- Policy H2 states that the key location for new residential development will be within the area to the east and north of Manchester City Centre identified as a strategic location for new housing.
- Policy H8 Affordable Housing requires new development to contribute to a 20% target for new housing to be affordable.
- Policy EN4 seeks to reduce CO_2 emission and reduce fuel poverty by enabling low and zero carbon development.
- Policy EN8 Adaptation to Climate Change includes requirements to minimise flood risk and reduce urban overheating.
- Policy EN9 Green Infrastructure provides guidance on provision of new, and improvements to, the quality and accessibility of existing green infrastructure assets.
- Policies EN10 & 11 safeguard and create new open space, sport & recreation facilities.
- Health is further protected through Policies EN14 Flood Risk, EN16 Air Quality, EN17 Water Quality, and EN18 Contaminated Land & Ground Stability.
- Policy T1 Sustainable Transport requires "*delivery of a sustainable, high quality, integrated transport system to encourage modal shift away from car travel… and to prepare for carbon free modes of transport*".
- Policy T2 will actively manage the pattern of development to ensure that there are accessible areas of opportunity and need.
- Policy T3 supports proposals that contribute to an economically and environmentally sustainable transport network through strategic integration of strategic transport projects. Progression towards sustainable transport will promote healthier living and well-being.
- Policy *DM1 Development Management requires that all development should have regard to specific issues including "Effects on amenity, including privacy, light, noise, vibration, air quality, odours, litter, vermin, birds, road safety and traffic generation*"; Accessibility: *buildings and neighbourhoods fully accessible to disabled people, access to new development by sustainable transport modes*"; "*Community safety & crime prevention*"; and "*Design for Health.*

Greater Manchester Spatial Framework (GMSF, Publication Draft, 2020)

13.9 The GMSF focuses on identifying future housing and employment land requirement in the ten local authorities which form Greater Manchester up to 2035. At a late stage of preparation, after examination and then adopted, it will be the overarching development plan for Greater Manchester. The GMSF Vision includes GM as "*a place where people life healthy lives"*; and Strategic Objectives include No 10 "*to promote the health and wellbeing of communities"*. The overall draft Strategy and many of the policies in the plan support improvements in health and wellbeing, and reductions in health inequalities, such as by: *promoting a successful economy; increasing supply of high quality and affordable homes; enabling people to adopt healthier lifestyles*; and *reducing risks to human health*.

Northern Gateway Strategic Regeneration Framework (SRF) (2019)

13.10 The Strategy comprises Part 1 The Context and Part II The Strategy with three sections – the People, Employment, and the Physical Environment. The People includes a section devoted to Health recognising that "*health is fundamental to regeneration*". "*Healthy people live longer, have more productive lives and provide good role models for the next generation*." The Strategy reports that evidence shows that the main causes of ill health are factors such as poverty, unemployment, poor education, poor housing, and high levels of crime. It acknowledges that the NHS cannot address these things on its own.

13.11 The objectives of the health strategy within the SRF are as follows:

- H1 Tackle the main killers by supporting the choice to live a healthier life;
- H2 Ensure better health for children and families;
- H3 Improve access to health care; and
- H4 Develop healthy neighbourhoods by recognising and addressing the wide range of factors which impact upon health.

Other Relevant Policy, Standards and Guidance

Public Health England (PHE) Spatial Planning for Health (2017)

13.12 Provides evidence of links between spatial planning and health, focusing on five key built environment topics – neighbourhood design, housing, healthier food, natural and sustainable environment, and transport.

The Greater Manchester Taking Charge of our Health & Social Care (2015)

13.13 Sets out the challenges and ambitions for the 37 NHS organisations and local authorities in Greater Manchester with a 5-year strategy to 2021. The ambition is for Greater Manchester "*to become a financially self-sustaining city region…with the size, assets, skilled and healthy population… to rival any global city*." The Vision is "*to deliver the fastest and greatest improvement in the health and wellbeing*" of the 2.8 million population, creating a strong, safe and sustainable health and care system that is fit for the future. In 2016, the Taking charge Together project was

initiated to help achieve this vision "*to create an environment where more of GM's residents take charge and responsibility of their own health, the health of their families, and even he health of our communities"*.

The Manchester Strategy – Our Manchester (2016)

13.14 The Manchester Strategy to 2025 comprises the Vision and five themes for the strategy including a progressive and equitable city where "*health will improve*…".

Approach

13.15 Health Impact Assessment (HIA) and health in EIA are separate processes, and there is no standard methodology for assessing health in EIA. The coverage of health in EIA need not be so comprehensive as the HIA that is used to inform detailed project design, but guidance documents for good practice in HIA can inform EIA practice in relation to human health and well-being. It is important that health in EIA is proportionate, balanced and relevant. This approach here is based on consultation responses, professional experience, and assessment of impacts against relevant baseline information.

13.16 *Shaping Neighbourhoods: For Local Health and Global Sustainability* (2010) sets out the complexities of planning for health due to the multiple determinants and the need for cross-sectoral understanding and collaboration. This guide established a health map demonstrating the linkages between the global ecosystem, the natural and built environments, the local economy with communities, people and their lifestyles. It explains the likely interactions between different sectors and seeks a common language for spatial planning and public health practitioners.

13.17 The London Healthy Urban Development Unit (HUDU) '*Healthy Urban Planning Checklist*' (2017) provides a useful checklist that was developed for London but is also applicable to residential led development elsewhere in the UK. The checklist aims to promote healthy urban planning by ensuring that the health and wellbeing implications of major planning applications are consistently taken into account, through providing a set of themes and planning issues that can be used to assess development proposals.

13.18 This HIA checklist recognises that health and wellbeing can be affected by multiple determinants as shown in Figure 13.1. Changes in certain determinants caused by development may affect the health and

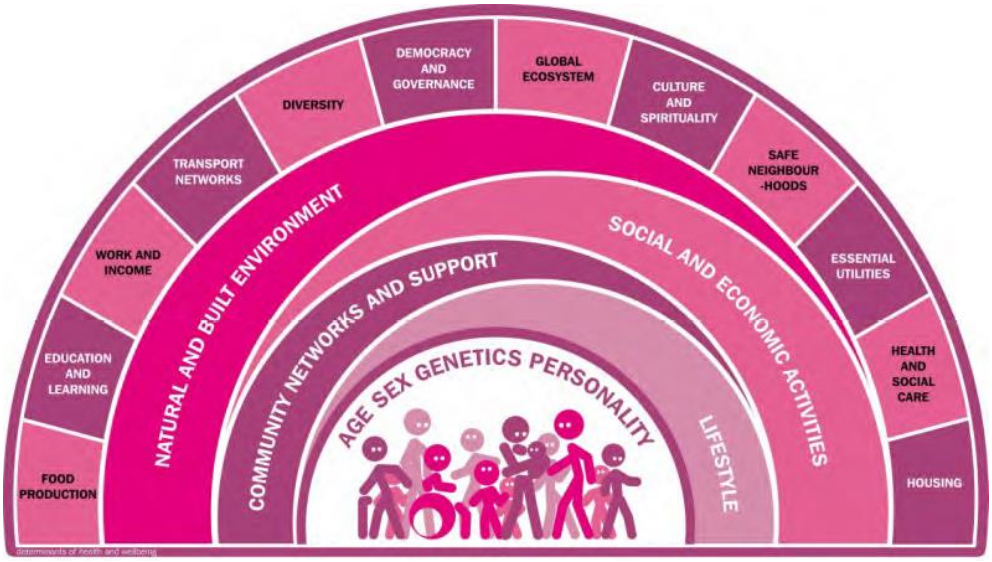


Figure 13.1: The Determinants of Health and Wellbeing

wellbeing of existing and new residents. The HUDU checklist interprets these determinants into a set of themes that can be used to assess housing development, as follows:

- Healthy Housing;
- Active Travel;
- Heathy Environment; and
- Vibrant Neighbourhoods.

13.19 Specific criteria sit under each of these themes to cover a fuller range of determinants. These include access to health and social care, healthy food, freedom from pollution, open space, reducing crime and fear of crime, and access to employment and services.

13.20 The checklist and criteria were used to inform the proposed scope of the Health Chapter of this EIA and then provided the basis for the assessment stage, where the proposals (including embedded mitigation) were compared to each of the relevant themes in turn to identify the receptors that would be affected and whether any vulnerable groups were likely to be affected.

13.21 The use of checklists helps identified the topics that are relevant to the health impact assessment for the proposed development. This Health Chapter considers the direct implications for health such as the provision of housing and employment. Also, implications such as arising through pollution or safety risks, and accessibility to healthcare facilities and sustainable transport (public, cycling and walking) for healthy living. It further considers the wider implications for health and well-being, such as disturbance/nuisance, provision and accessibility to green infrastructure, amenity, cultural and recreational facilities.

13.22 This health assessment considers the proximity, accessibility, and capacity (where possible) of health and medical centres and dentists in the vicinity of the proposed development. It considers the proximity and accessibility of gyms, leisure centres, sports/recreational and cultural facilities nearby since such activities are important determinants of health and wellbeing. Searches are made through web-based sources and using Google Maps to measure approximate distances by walking or public transport from the centre of the development area to the facility. The proximity of open spaces and walking routes is investigated as access to open space and healthy modes of transport also can contribute to healthier lifestyles and wellbeing.

13.23 Findings from the Socioeconomics Assessment (Chapter 12) are integrated as necessary taking into account the benefits arising from the proposed housing and employment, as provision of good quality housing and access to employment are known to have positive effects on health and wellbeing, and effects on demand for social and community infrastructure. The summary findings from the Townscape & Visual studies (Chapter 7) are considered as the quality of the local environment affects health and wellbeing. The Transport and Access Impact Assessment (Chapter 9) will be considered since access to sustainable modes of transport will contribute to improvements in health and wellbeing.

13.24 The key findings from the Drainage & Flood Risk (Chapter 8); Air Quality & Dust (Chapter 10); Noise & Vibration (Chapter 11); and Climate Change Assessments (Chapter 14) are considered in order to integrate within this Environmental Statement chapter the key impacts associated with any pollution and future climate change effects that can affect human health and wellbeing.

13.25 Each technical impact assessment is subject to its own standards, regulations, and methods of assessment. The key findings from each are then considered and integrated into the four themes of Healthy Housing; Active Travel; Heathy Environment; and Vibrant Neighbourhoods such that the implications for health from each of the other technical studies with interactions are integrated and key impacts reported.

Scope of the Assessment

13.26 The proposed scope uses the approach as outlined above. As explained, this chapter on health is not a Health Needs Assessment and does not attempt to quantify health care contributions; however, it does attempt to consider provision of health care services in the vicinity of the proposed development through published sources of information.

13.27 The geographical scope is determined by receptor groups that are likely to be significantly affected by the proposed development. Therefore, the scope of the HIA is in part dependent upon the study areas and potential receptors identified in the other technical assessments (such those for transport and air quality). Thus, the study area comprised the proposed development area and the wider study area of Manchester City, together with any implications for the North West of England – as applicable to each of the factors relevant to human health and wellbeing for the proposed project: socio-economics – economy/employment and housing; townscape & visual,

drainage & flood risk; transport & access; air quality & dust; noise & vibration; and climate change (see Chapter 7, 8, 9, 10, 11, 12 & 14 respectively for further information).

Identifying Sensitive Receptors

13.28 The receptor groups considered are:

- Construction workers;
- Existing residents, businesses, communities around the site, including any sensitive receptors such as hospitals, schools, and care homes; and
- Future users and residents of the site.

13.29 The baseline informing the assessment draws upon local health and wellbeing information and priorities, such as those set out in the Manchester City Joint Strategic Needs Assessment (JSNA 2019,) published local authority health profiles through Public Health England (PHE, 2017-2019) and Office for National Statistics (ONS) for health and life expectancies (2016-2018). The key baseline from the other technical topics is considered, such as capacity of local facilities and labour market statistics identified in the socio-economics assessment, and risks to health/wellbeing such as from air quality/dust, noise/vibration, or flooding. No primary research or surveys have been undertaken and the assessment is a desk-top assessment based on published information.

Characterisation of Effects & Significance Criteria

13.30 The Institute of Environmental Management & Assessment (IEMA) paper on Health in EIA (2017) explains the complexities associated with defining significance for population and human health. This guidance notes that there is an absence of specific significance criteria or defined thresholds for determining significance for population and health in UK EIA practice. Given the multitude of factors that contribute to an individual's health outcomes, it is difficult to draw a quantified conclusion regarding the contribution of a particular development to an increase or decrease in the number of additional cases of a particular physical or mental health outcome.

13.31 Therefore, a matrix methodology was not proposed for this Health Chapter in favour of a general significance table. A significant effect is reported in the assessment where, based on professional judgment, the proposed development is likely to contribute to a material change in health outcomes associated with the health issue being assessed and, in determining this, the following questions have been considered:

- Have significant effects been identified in other assessments undertaken as part of the EIA that are linked to human health (i.e. are environmental or health standards threatened)?
- Are vulnerable groups affected?
- Is the effect reversible or irreversible?

- Does the effect occur over the short (less than one year), medium (one to five years) or long (over five years) term?
- Is the effect permanent or temporary?
- Does it increase or decrease with time?
- Is the effect at an individual or population level?
- Are mitigating measures available and is it reasonable to require these?

13.32 Effects that are described as 'minor' or 'negligible' are determined to be 'Not Significant' and effects that are described as 'moderate' or 'major' are determined to be 'Significant'. Table 13.1 sets out the general significance criteria used in this health assessment.

Table 13.1: Generic Significance Criteria

Level of Significance	Assessment Criteria
Major	These effects are likely to be important considerations at a local or district scale but, if adverse, are potential concerns to the project and may become key factors in the decision-making process.
Moderate	These effects, if adverse, while important at a local scale, are not likely to be key decision-making issues. Nevertheless, the cumulative effect of such issues may lead to an increase in the overall effects on a particular receptor.
Minor	These effects may be raised as local issues but are unlikely to be of importance in the decision-making process. Nevertheless, they are of relevance in enhancing the subsequent design of the project and consideration of mitigation or compensation measures.
Negligible	No effect or effect which is beneath the level of perception, within normal bounds of variation or within the margin of forecasting error.

13.33 Standardised sectoral thresholds and significance criteria have been used for each of the other relevant factors that contribute to health and well-being, according to recognised guidance, standards and assessment methods for socioeconomics, townscape/visual, drainage & flood risk, transport & access, air quality & dust, noise & vibration, and climate change.

13.34 The Socioeconomics impact assessment (Chapter 12) was undertaken using a relevant approach to urban developments for assessing employment effects by estimating numbers of jobs and as formulated by the Birmingham Economic Information Centre. The impact assessment also considered changes to household spend, economic activity, and changes in demand for open/recreational space. Housing impact was assessed by considering population, deprivation levels, and identified housing needs, together with the implications for social and community infrastructure.

13.35 The Townscape & Visual impact assessment (TVIA) (Chapter 7) was undertaken in accordance with best practice guidance including GLVIA 3 (2013, Landscape Institute & IEMA); it also considered and was informed by the ecological appraisal.

13.36 The Drainage & Flood Risk impact assessment (Chapter 8) was undertaken using a standard Flood Risk Assessment methodology and consideration of climate change impacts according to Environment Agency guidance. The studies included the implications for human health with regard to the capacities of the foul water network and the flood risk.

13.37 The Transport & Access impact assessment (TA) (Chapter 9) has been undertaken in accordance with standard methods for TA and including the Design Manual for Roads and Bridges (DMRB). The findings of the TA have informed the air quality studies with regard to vehicle emissions and associated health and nuisance risks. This HIA has considered the findings of the TA for any impacts on accessibility to sustainable transport, and health, recreational/open space, or cultural facilities – as these factors can affect health, social and cultural wellbeing. There is no standard method for assessing accessibility and health/wellbeing.

13.38 The Air Quality & Dust impact assessment (Chapter 10) considered the assessment of effects on human health from pollutants especially traffic emissions of nitrogen dioxide (NO_2) and particulates (PM_{10} & $PM_{2.5}$) and dust that may be prejudicial to health or a nuisance. Receptor locations sensitive to changes in air quality and dust were identified and investigated. The assessment was undertaken using standard methods including the DMRB and guidance from the Institute of Air Quality Management. Dispersion modelling was used to quantify potential changes in pollutants concentrations at 18 sensitive locations identified in the vicinity of the site.

13.39 The Noise & Vibration impact assessment (Chapter 11) was undertaken using standard methods by predicting noise and vibration levels and assessing against the relevant British Standards. The surrounding site is predominantly residential and 5 sensitive receptor locations were identified to investigate potential changes to the noise and vibration environment.

13.40 The Climate Change impact assessment (Chapter 14) considered the potential effects of the development with regard greenhouse gas (GHG) emissions on the climate; how the proposed development aids in mitigation of climate change; and a qualitative discussion of the vulnerability of the proposed development to climate change effect. The assessment was undertaken in accordance with method guidance and consideration of national and

Manchester targets for reducing carbon emissions. The assessment considers the CO_2 emissions associated with electricity use within those buildings forming the proposed development.

Assumptions/Limitations

13.41 Any key assumptions or limitations associated with each technical impact assessment are considered within the individual chapters. The overall approach for collating, assessing, and reporting impacts on human health and well-being is considered to be appropriate and proportionate such that there are no limitations.

Consultation

13.42 A formal opinion on the scope for this EIA was provided by Manchester City Council in communication dated 20 April 2020. The Council confirmed that human health impacts are potentially significant and require assessment through the EIA process. Matters of air quality, transport and traffic, flood risk noise and vibrations, and socio-economic effects all affect human health and should be evaluated through the ES. In particular, consideration should be given to any air quality, climate change and quality of life during the construction phase and also any noise, disturbance, traffic/transport and air quality considerations during the operational phases of the development.

Table 13.2: Consultation

Consultee	Date and Time	Comments	Actions
Manchester City Council	20 April 2020	Comments received on technical chapters & agreed scope of assessments.	Comments integrated into the relevant technical chapters.
		Human Health: Matters of air quality, transport and traffic, flood risk, noise and vibrations and socioeconomic effects have all been scoped into the ES due to these disciplines having significant environmental impacts. All of these matters affect Human Health and therefore the Proposed Development is likely to give rise to significant environmental impacts on the Human Health which should be considered and evaluated through the ES.	This Health Chapter has been prepared which considers the health impacts with regards to air quality, transport and traffic, flood risk, noise and vibrations, socioeconomic and climate change effects during construction and operational phases of development.

Consultee	Date and Time	Comments	Actions
		This should include an assessment of the impact on human health with regards to any air quality considerations, climate change and quality of life, particularly during the construction process when heavy plant, machinery, dust and emissions are likely to be generated together with any noise, disturbance, traffic/transport and air quality considerations during the operational phases of the development.	

Baseline Conditions

Baseline Health Profiles

13.43 **Population**: According to the ONS (mid 2019), Manchester has an estimated total resident population of 552,858 and for Greater Manchester, the estimated resident population is 2,835,686. This compares to 7,341,196 for the north west region and 56,286,961 for England. The median age for Manchester is 30.1 years which is lower than the median ages for the north-west region and England respectively as 40.3 and 40.0. The median age for Greater Manchester is 37.1 years.

13.44 MCC has developed its own forecasting model (MCCFM. The MCCFM 2020 estimates that the residential population in 2019 was 576,500 – and this is much lower than the ONS mid-year estimate. The higher figure in the MCCFM takes account of local intelligence such as the high level of construction, rising numbers of international students, and increasing demand for school places. According to the Area Profiles in the MCCFM Hub, the population of the Harpurhey Ward (in which the development site is located) was 19,854 persons (2019). Harpurhey is one of the wards with the highest levels of children under age 16 years – at 5,330 (approximately 27% of the total) – and as compared to Manchester with 111,771 (approximately 20% of the total). The numbers of residents over 65 years in Harpurhey was 1,926 (approximately 9.7%) and within the median of five ranges and comparable for the city as a whole at 51,441 (approximately 9.3%). These figures are lower than the total over 65s for England at approximately 18.4% at the total population. The working age population in

Harpurhey is in the fourth highest at 12,598 (approximately 63.4%) of five ranges for the Manchester wards. This compares with the overall for Manchester at approximately 70.4% and for England at approximately 62%.

13.45 The MCCFM forecasts that the rate of city population growth is likely to increase over the next five years due to new apartment-led residential developments, adding greater capacity and opportunity for further population growth. Population growth is also being driven by international migration. The MCCFM predicts that the city's population will be greater than 640,000 by 2025.

13.46 The State of the City Report (2019) notes that population growth has occurred across the whole of Manchester but has been concentrated in the city centre and surrounding wards over the past few years. Increasingly attractive accommodation, combined with the high-quality leisure and cultural offer, is drawing students, graduates and professionals into the centre, while families are settling in larger numbers in the inner suburbs. The proposed development is located within the inner suburbs and is well connected to the city centre.

13.47 **Health**: The average life expectancy at birth during 2017-2019 in Manchester was for men 76.4 years and for women was 80.3 years. Within the Harpurhey ward, average life expectancy for men was 72.6 and for women was 76.3 years, slightly lower than for the city as a whole and in the lowest of five ranges recorded for the city area profiles.

13.48 According to the MCCFM, the Harpurhey Ward is one of the ten most deprived wards in the city with an Index of Multiple Deprivation (IMD) Score of 59 (2019); this compares with an IMD of 40 for Manchester City as a whole. The IMD ranks each small area in England from most deprived to least deprived. There are seven domains of deprivation, which combine to create the IMD: Income; Employment; Education; Health; Crime; Barriers to Housing & Services; and the Living Environment. Within the 2019 IMD, Manchester was ranked 6 in England out of 319 local authorities, and therefore is in the top 10% of most deprived authorities in England. The key domains influencing Manchester's position are employment, health, and crime. Greater Manchester was ranked 3 out of 36 Local Enterprise Partnerships (LEP) in England. Therefore, Greater Manchester is in the top 10% most deprived LEPs in England.

13.49 The site is located within the wider Neighbourhood Profile of Higher Blackley, Harpurhey & Charleston. The most recent Mosaic data (December 2020) indicates that most households are within two groups – Transient Renters and Family Basics. However, there are significant numbers in other deprived household types – Vintage Value and Municipal Challenge. In Harpurhey alone, 9 out of 10 households contain people whose social circumstances indicate they may need high or very high levels of support to help them manage their own health and prevent them becoming high users of acute healthcare services in the future.

13.50 The population in each Neighbourhood has been divided into 10 cohorts, mainly using a range of data based on their history of accessing Primary Care (GP), Acute Hospital and Mental Health services. Higher Blackley, Harpurhey & Charlestown has far fewer adults and older people in the Good Health cohorts and more in the

Adults with Wider Determinants of Need cohort. There are also more adults and older people in the Mental Health, Learning Disabilities & Dementia cohort. While the neighbourhood accounts for 7.8% of the registered adult population for social care, the percentage receiving all types of assessment was far higher, ranging from 10.3% for drug and alcohol assessments to 14.6% for general assessments. In the neighbourhood, the two most widely used services provided via MCC Adult Social Care were home care and community alarms. People in the neighbourhood have a higher level of long-term conditions (LTC) compared to the overall population registered with a Manchester GP. By far the highest LTC register is for smoking (21.4%), followed by Hypertension (12.2%) and Obesity (10.6%). For the neighbourhood and the overall population, Gastro Intestinal and Respiratory are the highest areas of spend at 11 – 12% for hospital activity. People living in the neighbourhood are more likely to attend A&E than the overall population registered with a Manchester GP.

13.51 **Socioeconomics** – **Employment**: Manchester has outpaced comparative areas in terms of jobs growth over the three years from 2013 to 2016. Employment is forecast to grow by 14.1% (55,300) jobs in the next 20 years. Education and Health is one of the industries in which there is expected to be a significant rise, with growth of 7.7% or 6,600 jobs by 2036. Employment in the Cultural and Creative sector is expected to increase by 12.3% from 2016 to 2036. According to NOMIS 2018 data, there were a higher number of jobs for individuals of working age available in Manchester compared with Greater Manchester, the North West, and Great Britain as a whole.

13.52 According to the MCC Area Profile, the Harpurhey ward was in the highest of five ranges for unemployment (2019 data) at approximately 8.9% and this is higher than the average for the City as a whole, at 6.2% unemployment.

13.53 There is an existing business within the site, Collyhurst Village Stores. Within the wider Northern Gateway SRF area, there are a mix of offices, light industry, wholesalers, and depots with various large and Small-Medium Enterprise businesses operating. There are also existing employment areas surrounding the site, including Strangeways to the west and Cheetham Hill to the north.

13.54 **Socioeconomics – Housing**: There are 29 existing residential units within the site, including 22 council-owned homes and seven private residential units. The MCC Core Strategy (2012) identified a requirement to provide approximately 60,000 new dwellings 2009 - 2027, equating to an average of 3,333 units per year. The site is situated within the 'North Manchester' area, which is anticipated to deliver approximately 11,840 new residential units 2009-2027.

13.55 The Greater Manchester Strategic Housing Market Assessment (January 2019) identified that the annual housing need for Manchester is 2,584 new homes per year and is across Greater Manchester is 10,583 new homes per year. Over the Local Plan period to 2037, 201,000 net additional dwellings are needed. Of this overall identified housing need, a net annual affordable housing need of 1,156 is identified in Manchester and 4,678 across Greater Manchester.

13.56 **Socioeconomics – Education & Health Facilities/Services**: There are seven children's centres and one nursery within 2.5km of the site. There are 31 primary schools within 2.5km of the site and with capacity for 136 places altogether. There are 3 secondary schools within 2.5km of the site and with a surplus of 896 places. Also, the Oasis Academy Temple providing education for 3-16 year olds including early years, primary, and special educational needs & disabilities – with only a limited spare capacity of 3.

13.57 There are 17 General Practitioner (GP) surgeries located within the study area. the overall ratio of GPs : patients within the study area is 1:1,457, which is below the national target of 1:1,800. There are 16 dentist surgeries within 2.5km of the site and a number are accepting new patients. There are also many pharmacists and opticians within 2.5 km of the site, predominantly located in Manchester City Centre. The nearest hospital is the North Manchester General Hospital located approximately 1.7km to the northwest of the site.

13.58 **Community & Cultural Facilities**: There are many community facilities within 2.5km of the site, including community centres such as St. George's Youth and Community Centre. There is a wide range of places of worship servicing many faiths. Cultural facilities include libraries and museums, such as Miles Platting Community Library, Manchester Jewish Museum and Museum of Transport; also, theatres, such as the Hope Mill Theatre, and cinemas, such as Vue and Chapeltown Picturehouse. The city centre is well supplied with cultural and social assets including cinemas, restaurants, cafes, pubs, clubs, art galleries and museums – within accessible distances and using sustainable transport – and all contributing facilities to promote health and wellbeing.

13.59 **Fitness Facilities**: The city centre area is serviced with various gyms, including Crossfit Central, Fighting Fit Strength & Performance, and Hero Training club – all within 2-3km of the proposed development. There are leisure centres including swimming pools, such as the Ten Acres Lane Sports Complex to the east - and the East Manchester and Broughton Leisure Centres, slightly further away some 3.5km distance the southeast and to the west respectively from the development site. Also, Pool Arts to the south. There are numerous dance schools and studios in the city centre; also, a variety of martial arts centres.

13.60 **Green Space**: There is green/open space nearby, for example, at the adjacent Collyhurst Park that includes a five-a-side football pitch, children's play area and Multi-Use Games Area (MUGA). There are 7 open/recreational sites within 800m of the site (excluding playing fields associated with educational facilities). Within the wider Northern Gateway SRF area, there are numerous green/open spaces. However, the quality and uses of these spaces are extremely limited, with a basic amenity offer of grass verges and cleared land. A MCC study in 2009 reported that the quality of open spaces in the North Manchester area is considered to be below average and the poorest in the City.

13.61 The Irk Valley Project extends from near Manchester Victoria Railway Station to the M60 boundary at Heaton Park in the north and it seeks to rejuvenate and regenerate areas of land through a coordinated approach – to provide a linked landscape of accessible urban green space. The River Irk is situated within 1km of the site to the

west. The Medlock Valley Way, a long distance walking route and National Cycle Route No 60, is located some 1.454km to the south east of the site.

13.62 **Townscape & Visual**: The site is located to the north of the city centre, bound to the west by Rochdale Road (A664), and currently comprises 29 residential dwellings, a shop, areas of hardstanding, amenity grassland and trees. The site lies within the NCA Profile for Manchester Conurbation (NE463), the heavily built-up nature of the Manchester Conurbation NCA weighed against its network of natural features and industrial archaeology results in a moderate capacity for change and it is therefore considered to have a medium landscape sensitivity. The areas of the site comprising built form and the areas of cleared vacant land are considered to be of low townscape value.

13.63 There are 4 Conservation Areas either wholly or partly within 2km of the site, but the proposed development is not anticipated to be visible from any of the four Conservation Areas and their settings will remain unaffected. Listed Buildings are scattered within 1km of the site but are not anticipated to be impacted by the proposed development. There are four Registered Parks and Gardens within the study area - Queens Park and Manchester General Cemetery to the north may be impacted, but the other two (Phillips Park and Phillips Park Cemetery) to the south east will not be affected. There are many pedestrian routes throughout the study area and viewpoints have been selected to be representative of the pedestrian receptors.

13.64 **Drainage & Flood Risk**: Limited historic investigations that are available show there to be varying depths of made ground present across the site. There is a surfacewater network running north-east and another in the northern parcel of the site; also, a foul water network running north-east. Two culverted watercourses run beneath the site and are associated with the Moss Brook. The site is located above a secondary aquifer within the bedrock; it is not within a Source Protection Zone. The entirety of the Collyhurst Village site is located within Flood Zone 1 which means the site is considered to be at less than 0.1% chance of flooding in any year and so is not at risk of fluvial flooding. Flood risk from groundwater has not been historically significant. Flood risk from surface water is indicated as being mostly at very low risk with some specific areas indicated as low-high risk.

13.65 **Transport & Access**: Rochdale Road (A664) is a strategic radial route from Manchester City Centre through the Northern Gateway SRF area. Queens Road A6010, to the east of the site is a local strategic route through the north of Manchester. Oldham Road to the south of the site is another radial route to Manchester City Centre. Other streets in the area are local access streets providing access to the residential areas in Collyhurst and Miles Platting. A number of traffic collision incidents ranging from slight to serious have been recorded for these roads in the vicinity of the site.

13.66 The site is accessible to pedestrians from all directions, those who are walking from public transport stops will most likely access the site from the west along Rochdale Road or from the east via Thornton Street North. There are several dedicated cycle facilities around the site including on-road routes along Rochdale Road shared with a bus lane in the northbound direction and only for a short distance southbound from the junction with the A6010.

Many of the streets within the site are subject to a 20mph speed limit, so although they do not have specific cycle infrastructure the traffic speed is low enough that a confident cyclist could use.

13.67 The site is well served with buses and the closest Metrolink stop to the site is Monsall, which is located approximately 600m to the east of the site. The nearest railway station to the development is Manchester Victoria Station located approximately 2km to the southwest of the site. The station can be reached on foot in about 30 minutes, by bicycle in around 10 minutes, or by bus in around 15 minutes.

13.68 **Air Quality & Dust**: The south west corner of the proposed development site adjacent to Rochdale Road is located within an existing Air Quality Management Area (AQMA). Annual mean concentrations of NO_2 are above the Air Quality Objective (AQO) within the city. As such, a number of roads within Manchester have been included in the Greater Manchester Combined Authority (GMCA) AQMA. All other relevant pollutants are currently below their AQOs.

13.69 **Noise & Vibration**: The proposed development is located in an urban environment where the daytime baseline noise climate is dominated by traffic.

13.70 **Climate Change:** The surroundings of the site have many sources of greenhouse gases and as a result it would be difficult to quantify the exact amount of greenhouse gases being emitted such that it is not possible to estimate baseline emissions. The site is currently occupied by 29 dwellings and a shop however estimating the emissions associated without proper calculations is unrealistic.

Embedded Mitigation

13.71 This includes consideration of embedded mitigation for demolition, construction, and operational phases of the completed development.

13.72 **Socioeconomics**: No relevant embedded mitigation during the demolition, construction or completed phases of the development.

13.73 **Townscape & Visual**: No embedded mitigation measures for the demolition or construction phases.

13.74 Embedded mitigation forms an integral part of the project planning and design in order to avoid, reduce or offset any adverse effects on the townscape, views, or wider environmental process. The design proposals have been formulated through a lengthy iterative process incorporating environmental assessment and consultation such that site constraints and opportunities have directly influenced the evolution of the masterplan such that embedded mitigation measures form part of detailed design. Embedded mitigation as part of the integral project design and the completed development includes:

- High quality architectural design;
- Restricted heights to proposed buildings;
- Improved frontage to Rochdale Road;
- Creation of a network of new and enhanced routes with pedestrian and cycle priority; and
- Creation of New Collyhurst Park to enhance local public green spaces.

13.75 **Drainage & Flood Risk**: None embedded mitigation measures are required as part of the demolition or construction phase with regards to flood risk and drainage.

13.76 Embedded mitigation to avoid flood risk and to ensure future resilience to the predicted effects of climate change forms an integral part of the project planning and design. Low flow fittings and appliances will be specified where feasible to reduce foul flow discharge from the site.

13.77 **Transport & Access**: The appropriate mitigation measures have been explored at the design stage to eliminate, minimise, or manage identified potential significant effects on the environment by the proposed development. There is no relevant embedded mitigation during the demolition and construction phases for transport and access.

13.78 For the operational phase, the design of the proposals includes appropriate car and cycle parking provision. Access to the buildings will accommodate the needs of all users and with positive effects for pedestrian amenity. The high-quality public realm along Rochdale Street, Thornton Street North, and the internal streets of the development will also have positive effects on pedestrian amenity.

13.79 **Air Quality & Dust**: No embedded mitigation measures have been identified at the demolition and construction phases with regards to air quality.

13.80 For the completed development, it is proposed to provide 203 car parking places on site as well as cycle storage for each house and apartment block. The houses all have one space in a driveway within the curtilage of the property, 15% of these will have EV charging installed while the remaining will have infrastructure to enable instalment in the future. The apartments have communal parking courts located in the centre of the blocks, 10% of the spaces (3 parking spaces) in the communal parking will have EV charging. 16 of these spaces are intended for visitor parking. These measures are anticipated to promote the use of sustainable modes of transport and reduce road traffic exhaust emission impacts.

13.81 **Noise & Vibration**: During demolition and construction, use of a specific piling method that produces significantly lower vibration levels than typical bored piling. For the operational phase, the building services plant will be designed to minimise noise levels. The building envelope to the commercial unit will be designed to control noise egress along with appropriate entertainment noise limits within the commercial units.

13.82 **Climate Change**: Embedded mitigation measures to reduce carbon are integral to project design and provision of EV charging points. Fabric efficiency beyond that of minimum building regulations will help the proposed development achieve the reduction targets within the local policy. It also includes the emissions saved from the solar PV that is included in the project design. Energy use is reduced through buildings that have been designed to reduce space heating/cooling requirement and utilise energy efficient materials for construction, lighting, and appliances.

Potential Impacts

Demolition and Construction

13.83 **Socioeconomics**: It is estimated that there will be an average of 50 direct jobs generated each year during the demolition and construction phase. In addition, the demolition and construction works will lead to an increase in spending in the local economy by contractors. Overall, the magnitude of impact from direct, indirect and induced job creation would be short-term **moderate beneficial** - **significant** at the district level due to the high sensitivity of the receptors with high levels of relative deprivation in the local area. At the subregional level, these impacts are likely to be **negligible - not significant**.

13.84 The likely effects of expenditure from the temporary construction workforce during demolition and construction are considered to be **minor beneficial – not significant** in the short-term at the district level, and **negligible – not significant** at the sub-regional level.

13.85 **Townscape & Visual**: Visual effects from increased visibility due to tree removal; the presence of construction traffic, plant, and equipment; and the provision of site safety/security lighting are likely to be **moderate-minor adverse/ minor adverse – not significant**. The effects of the introduction/removal of built fabric is likely to be **major-moderate neutral/ moderate-minor neutral/ minor neutral – significant**. The townscape effects from loss of existing townscape features and the reduction in townscape quality due to the presence of construction traffic, plant and equipment are likely to be **minor neutral – not significant**. The effects of the loss of existing trees are likely to be **minor neutral – not significant**. The effects of the presence of temporary site cabins, fencing and illumination are likely to be **moderate-minor neutral – not significant**.

13.86 **Drainage & Flood Risk**: There is a risk of potential contaminants including fuel and oils spillages impacting on the adjacent Moss Brook. Without mitigation the impact would be **minor adverse** in the short term in the local area which is **not significant.**

13.87 **Transport & Access**: It is likely that there will be an increase in HGV traffic on the local highway network estimated at around 6 movement per day which is **negligible** and **not significant**; also, an increase in traffic from construction workers. The impact of this temporary additional traffic on severance, driver delay and pedestrian delay is expected to be **negligible** which is **not significant**.

13.88 **Air Quality & Dust**: Effects from fugitive dust emissions associated with demolition and construction are all short-term and local - likely to be **moderate adverse** (demolition) which is **significant**; **major adverse** (earthworks) which is **significant**; **moderate adverse** (construction) which is **significant**; and **minor adverse** (trackout) which is **not significant.**

13.89 **Noise & Vibration**: During the enabling works, effects at 2 of the receptor locations were found to be **negligible – not significant** and effects at a further 2 locations to be **minor – not significant**. Effects were found to be **moderate – significant** at only one location, along Thornton Road North.

13.90 During demolition works, effects at all 5 locations were found to be **negligible or minor – not significant**.

13.91 During the sub-structure works and construction works, effects at 2 of the receptor locations were found to be **negligible – not significant** and effects at a further 2 locations to be **minor – not significant**. Effects were found to be **moderate – significant** at only one location, along Thornton Road North. For all 5 receptor locations, effects from additional construction traffic noise and vibration were found to be **negligible – not significant.**

13.92 **Climate Change**: Carbon emissions considered those involved in producing the materials used, their transport, and emissions from the construction and installation process. The emissions arising from the on-site emissions from the construction and installation process are estimated to be 2,639 tonnes of CO_2e. This expected to have a **neutral, non-significant** impact when compared to a similar development carrying out construction to generic standards. Emissions from the construction phase itself including fuel usage and electricity usage from plant and machinery are estimated to have a **neutral, non-significant** impact. The use of recycled materials where possible should reduce potential further emissions related to the production of new materials.

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13.93 **Socioeconomics**: Due to the commercial floorspace proposed, it is anticipated that employment opportunities will be created by the completed development. It is estimated to generate a direct, net 5 - 11 FTE jobs and create 1 indirect and induced FTE job. Taking into account the high sensitivity of the receptor due to low levels of economic inactivity and high levels of relative deprivation, the likely effects of direct, indirect and induced job creation from the completed development are considered to be **moderate beneficial** significance in the long-term at the district level which is **significant**. Such effects are considered to be **negligible** in the long-term at the sub-regional level which is **not significant**. The new residential population within the completed development would result in increased household spending in the local area. This is considered to be of **moderate beneficial** significance in long-term at the district level which is **significant**.

13.94 The proposed development will involve the demolition of the existing properties within the site and provide 244 residential units. This will contribute 9.4% of the annual housing need of 2,584 in Manchester and 2.31% of the annual need across Greater Manchester identified in the GMSF. The likely effects related to an increase in housing stock are considered to be of **moderate beneficial** significance in the long-term at the district level

which is **significant,** and **minor beneficial** significance in the long-term at the sub-regional level which is **not significant**.

13.95 The proposed development is estimated to generate 561 individuals in total. New residents may help to sustain essential local services, such as those provided by education, healthcare and community facilities, but they may also generate additional demands. There are surplus places available at both primary and secondary schools in the area, indicating adequate capacities, such that effects are considered to be **negligible** in the long-term at the local level which is **not significant**.

13.96 With regard to capacities of healthcare facilities, there are dental practices, pharmacists and opticians in the area. The current GP to patient ratio is currently below (at 1:1,457) than the national target of 1 GP to 1,800 patients, indicating a surplus in the local GP provision. As a result of the negligible magnitude of impact and medium sensitivity of receptor (due to the deficit in existing GP provision in the local area), the likely effects on primary healthcare facilities are considered to be of **negligible** significance in the long-term at the local level which is **not significant**.

13.97 It is anticipated that the existing community facilities could absorb requirements given the number and variety of facilities available in the area surrounding the site. The likely effects on community facilities are considered to be **negligible** in the long-term at the local level which is **not significant.** It is anticipated that the new residents will increase demand on the existing network of accessible open and recreational spaces. However, the proposed development will provide an upgraded Collyhurst/Willert Street Park, with new play areas, public lawns, ornamental planting, and wildflower meadow. As such, overall, the likely effects related to open and recreational spaces are considered to be of **minor beneficial** significance in the long-term at the local level which is **not significant**.

13.98 **Townscape & Visual**: Views of the proposed development are limited to the immediate vicinity of the site. Generally, full or partial visibility is anticipated within a 250m radius of the site. Beyond this, visibility tends to be restricted to glimpsed views along transport corridors running in the direction of the site. Where the visual impact of the proposed development is predicted to be **significant** (Numbers 1,2 & 4 of 11 identified viewpoints in Chapter 7: Townscape and Visual) the change is considered to be **beneficial** or **neutral** in nature. At a local level, the proposed development is considered to result in a **moderate** magnitude of change on the townscape character. The prevalent townscape character is considered to be low value and a **moderate-minor (not significant)** impact is therefore anticipated to townscape character at a local level. This impact is considered to be **beneficial.** Significant effects are not anticipated to any of the assessed designations – landscape, historic, and planning. A **minor beneficial** impact is predicted to a small section of NCR 60 and a **moderate-minor beneficial** impact is anticipated to Queens Park (a Grade II Listed Registered Park & Garden); neither of these are significant.

13.99 **Drainage & Flood Risk**: Any potential impacts associated with drainage and flood risk are reduced to **negligible** through the embedded mitigation in the project design. There is the potential for **minor adverse** effects in the long term at the local level through additional wastewater discharging but with adequate maintenance of the system, effects are considered to be **not significant**.

13.100 **Transport & Access**: There is the potential for effects on severance, driver stress, pedestrian delay and amenity, accidents and safety, and hazardous loads. The effects on road users as a result of increased traffic levels associated with the operational phase of the proposed development are **negligible** given their magnitude of effect which is **not significant.**

13.101 **Air Quality & Dust**: The identified sensitive receptors were mostly residential dwellings located within the vicinity of the site with one educational facility on Queens Road. Predicted annual mean PM_{10} concentrations were below the relevant AQO at all sensitive receptors. predicted annual mean $PM_{2.5}$ concentrations were significantly below the relevant AQ Target Value (TV) at all sensitive receptors. Impacts on annual mean NO_2 concentrations and annual mean $PM_{2.5}$ concentrations as a result of road vehicle exhaust emissions were predicted to be **negligible – not significant** at all receptors. It is considered unlikely that future air quality conditions will change significantly in the absence of the proposed development based on the relatively established nature of the area. The assessment assumed that vehicle exhaust emission rates and background pollutant levels will not reduce in future years – thus, providing worst-case results.

13.102 **Noise & Vibration**: For the completed development, entertainment noise from the commercial unit, traffic noise, and the building services plant noise were all found to be **negligible – not significant** for all receptor locations.

13.103 **Climate Change**: The projected total energy use and CO_2e emissions for the proposed development's 80-year operational lifespan has been modelled to produce an absolute scenario which includes the improvements in fabric efficiency and the use of Solar PV for the residential units. The predicted relative emissions reduction over the lifetime of the development including embedded mitigation is 48.01% for the proposed development. This would result in a **positive, major beneficial** impact. In addition to significant emission reductions, the whole development can be classified as carbon neutral all the energy used on site from a 100% renewable energy electricity supply provider. Mitigation of climate change effects has been achieved through significantly improved fabric efficiency and Solar PV – **major beneficial** effects – **significant.**

13.104 It will not be possible to eliminate every risk to health and wellbeing associated with climate change but through intelligent design, preparation and responsible construction, these risks will be minimised. Such key risks as overheating, flooding and extreme weather have been minimised through the integral design process to take into account the health and safety of the users of the development, and also the resilience of the development itself. Likely effects are **major beneficial** – **significant.**

Mitigation Measures

13.105 This section describes the measures which are required to mitigate any significant environmental effects with regards to human health. This details mitigation measures which are not designed into the proposals and which requires a commitment from the applicants to carry out further actions.

Demolition and Construction

13.106 **Socioeconomics:** To maximise the beneficial effects associated with demolition and construction, a Local Employment Scheme would be implemented in conjunction with MCC to retain some of the employment benefits in the local area.

13.107 **Townscape & Visual:** The CEMP and Landscape Management Plan will ensure that mitigation/enhancement measures are implemented. Relating to townscape and visual matters this could cover site hoardings, construction lighting, construction traffic routes.

13.108 **Drainage & Flood Risk**: Appropriate measures in the CEMP would include appropriate storage and handling for all fuels and oils; spillage contingency measures; and appropriate personalle awareness training.

13.109 **Transport & Access**: The CEMP will ensure that mitigation measures are implemented. Measures could include preferred routing and scheduling of HGVs and construction vehicles, management of mud and dirt tracking from site, appropriate signage, car parking, and details of hours of operation.

13.110 **Air Quality & Dust**: Many of the short-term impacts arising during the construction phase will be mitigated through implementation of a Construction Environmental Management Plan (CEMP). The CEMP will ensure that mitigation measures to monitor and manage fugitive dust emissions are implemented.

13.111 **Noise & Vibration**: Best Practice Measures (BPM) and a CEMP will be implemented which will include methods to reduce construction noise where feasible to reduce the potential impacts on local receptors.

13.112 **Climate Change**: Use of materials that have low embodied emissions and reducing the distance travelling to the site.

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13.113 **Socioeconomics:** Impacts are Minor or Moderate Beneficial and with no negative impacts identified, there is no mitigation required.

13.114 **Townscape & Visual:** None required as embedded mitigation has been an integral element of project design. The Landscape Management Plan will ensure that mitigation/enhancement measures are implemented.

13.115 **Drainage & Flood Risk**: None required as embedded mitigation has been an integral element of project design.

13.116 **Transport & Access**: A Travel Plan has been prepared which sets out measures to encourage sustainable means of transport (public, cycling and walking).

13.117 **Air Quality & Dust**: None required above the embedded mitigation measures. The Travel Plan will encourage use of sustainable transport which will consequently assist in reducing vehicle emissions from the proposed development.

13.118 **Noise & Vibration**: None required.

13.119 **Climate Change**: Energy efficiency and emissions reductions have been maximised for the development and 20% reductions have been achieved. All energy use on site will be obtained from 100% renewable energy electricity supply provider.

Residual Impacts

13.120 A summary of likely residual effects is presented in the following table:

Table 13.3: Residual Effects Summary

Description of Effect	Potential effect including significance	Mitigation	Residual Effect including significance
Construction and Demolition			
Direct, Indirect and Induced Job Creation	**Moderate beneficial** at the district level - **significant**. **Negligible** at the sub-regional level - **not significant.**	Local Employment Scheme.	**Moderate beneficial** at the district level - **significant**. **Negligible** at the sub-regional level - **not significant.**
Expenditure from the temporary construction workforce	**Minor beneficial** at the district level - **not significant.** **Negligible** at the sub-regional level - **not significant.**	N/A	**Minor beneficial** at the district level **- not significant.** **Negligible** at the sub-regional level - **not significant.**

Description of Effect	Potential effect including significance	Mitigation	Residual Effect including significance
Changes to visual amenity at Viewpoints 1-11	**Negligible to major adverse** which is **significant**	CEMP best practice	**Negligible to major adverse** which is **significant**
Loss of existing townscape features; Reduction in townscape quality due to the presence of construction traffic, plant and equipment	**Minor neutral – not significant**	CEMP best practice	**Minor neutral – not significant**
Loss of existing trees	**Moderate-minor adverse – not significant**	None	**Moderate-minor adverse – not significant**
Presence of temporary site cabins, fencing and illumination	**Moderate-minor neutral – not significant**	CEMP best practice	**Moderate-minor neutral – not significant**
Pollution of groundwater or of the Moss Brook	**Major-moderate adverse** in the short term in the local area which is **significant**	CEMP best practice	**Negligible – not significant**
Severance, driver stress, pedestrian delay & amenity, accidents & safety, hazardous loads	**Negligible - not significant**	CEMP best practice	**Negligible - not significant**
Fugitive dust emissions	All adverse, short-term & local. Demolition: **Moderate** Earthworks: **Major** Construction:	CEMP best practice	**Negligible - not significant**

Description of Effect	Potential effect including significance	Mitigation	Residual Effect including significance
	Moderate Trackout: **Minor**		
Noise & vibration	All temporary, short-term & local. Enabling: 4 locations **Minor-Negligible** – not significant; 1 location **moderate – significant** Demolition: all 5 locations **Minor-Negligible** – not significant Sub-structure: 4 locations **Minor-Negligible** – not significant; 1 location **moderate – significant** Construction: 4 locations **Minor-Negligible** – not significant; 1 location **moderate – significant**	CEMP best practice	Enabling: 4 locations **Minor-Negligible** – not significant; 1 location **moderate – significant** Demolition: all 5 locations **Minor-Negligible** – not significant Sub-structure: 4 locations **Minor-Negligible** – not significant; 1 location **moderate – significant** Construction: 4 locations **Minor-Negligible** – not significant; 1 location **moderate – significant**
	Traffic: **Negligible - not significant**	None	**Negligible - not significant**
Greenhouse gas emissions contributing to global warming and climate change	**Neutral – not significant**	Using environmentally friendly materials that are locally sourced where possible	**Neutral – not significant**

Description of Effect	Potential effect including significance	Mitigation	Residual Effect including significance
Completed Development			
Direct, indirect and induced job creation	**Moderate beneficial** at the district level - **significant**. **Negligible** at the sub-regional level - **not significant.**	N/A	**Moderate beneficial** at the district level - **significant**. **Negligible** at the sub-regional level - **not significant.**
Increase in household spend	**Moderate beneficial** at the district level - **significant**. **Negligible** at the sub-regional level - **not significant.**	N/A	**Moderate beneficial** at the district level - **significant**. **Negligible** at the sub-regional level - **not significant.**
Increase in housing stock	**Moderate beneficial** at the district level - **significant**. **Negligible** at the sub-regional level - **not significant.**	N/A	**Moderate beneficial** at the district level - **significant**. **Negligible** at the sub-regional level - **not significant.**
Change in demand on social and community infrastructure	Education: Primary & Secondary school capacities **Negligible** at the local level – **not significant**. Healthcare: **negligible** at the local level – **not significant**. Community Facilities: **Negligible** at the local level – **not**	N/A	Education: Primary & Secondary school capacities **Negligible** at the local level – **not significant**. Healthcare: **Minor adverse** at the local level – **not significant**. Community Facilities: **Negligible** at the local

Description of Effect	Potential effect including significance	Mitigation	Residual Effect including significance
	significant.		level – **not significant.**
Change in demand for open and recreational space	**Minor beneficial** at the local level – **not significant**.	N/A	**Minor beneficial** at the local level – **not significant**.
Visual effects – Viewpoints 1; 2 & 4	**Major-moderate beneficial - significant**	LMP	**Major-moderate beneficial - significant**
Viewpoints 3, 5-11	**Moderate-minor beneficial to negligible – not significant**	LMP	**Moderate-minor beneficial to negligible – not significant**
Townscape Effects – NCR60; Manchester General Cemetery, NCA 55 Manchester conurbation	**Negligible – not significant**	LMP	**Negligible – not significant**
Queens Park (Gd II Listed); GMUHLCA Local Character Areas	**Moderate-minor beneficial – not significant**	LMP	**Moderate-minor beneficial – not significant**
Additional wastewater discharging to the local infrastructure	**Minor adverse** in the long term at the local level **– not significant**	None	**Minor adverse – not significant**
Severance, driver stress, pedestrian delay & amenity, accidents & safety, hazardous loads	**Negligible - not significant**	Travel Plan	**Negligible - not significant**
Road traffic vehicles exhaust emissions associated with	**Negligible - not significant**	Travel Plan	**Negligible - not significant**

Description of Effect	Potential effect including significance	Mitigation	Residual Effect including significance
vehicles travelling to and from the site			
Entertainment noise from commercial unit	**Negligible - not significant**	None above embedded mitigation	**Negligible - not significant**
Traffic noise level increases	**Negligible - not significant**	None	**Negligible - not significant**
Building services plant noise	**Negligible - not significant**	None	**Negligible - not significant**
Greenhouse gas emissions contributing to global warming and climate change	**Major beneficial – significant**	All energy use on site will be obtained from 100% renewable energy electricity supply provider.	**Major beneficial – significant**
Mitigation of climate change due to improved fabric efficiency & Solar PV	**Major beneficial - significant**	None	**Major beneficial - significant**
Vulnerability & risk to effects of climate change – overheating, flooding, & extreme weather	**Major beneficial - significant**	Designing climate resilient landscaping & to reduce any urban heat island effects	**Major beneficial - significant**

Assessment of In-Combination Effects

13.121 This section considers the potential in-combination effects of the development within the wider Northern Gateway Strategic Regeneration Framework.

Approach

13.122 The whole of the Northern Gateway SRF area was considered as a single committed development and considered within a separate assessment to identify any potential further in-combination effects. Given the scale of development, and the relativity small contribution that Collyhurst Village plays within the wider Framework area, only a limited brief commentary is possible to summarise potential in-combination effects.

Potential Impacts

Demolition & Construction

13.123 **Socioeconomics:** It is assumed that there will be further direct, indirect, and induced job creation and further expenditure from the temporary construction workforce associated with the wider development. Assuming that the demolition and construction stages are concurrent, there are likely in-combination effects in relation to job creation and workforce spend. This is considered to be of greater beneficial significance than that concluded for the proposed development (i.e. minor beneficial significance at the district level and negligible at the sub-regional level).

13.124 **Townscape & Visual:** Across the entire area there is the potential for adverse effects on visual amenity and townscape character during demolition and construction. Given the size of the Collyhurst Village development in comparison to the overall Framework area, its contribution to the identified in combination effects are likely to be **Minor**.

13.125 **Drainage & Flood Risk**: All new development must comply with requirements for flood risk and relevant approvals processes for foul water, such that with implementation of CEMPs, in-combination effects will be **Negligible** which is **Not Significant**.

13.126 **Transport & Access**: It was considered that with the information available at the current time, it is not possible to quantify the likely in-combination impacts or comment on their magnitude.

13.127 **Air Quality & Dust**: Should construction phase activities of developments associated with the SRF take place within 700m of the boundary it is possible that cumulative dust impacts may occur. It is assumed that a similar level of control would be expected for any other scheme associated with the SRF. Therefore, cumulative impacts are predicted to be **not significant.**

13.128 **Noise & Vibration**: Should construction phase activities of developments associated with the SRF take place within 200m of the boundary it is possible that cumulative dust impacts may occur. It is assumed that a similar level of control would be expected for any other scheme associated with the SRF. Therefore, cumulative impacts are predicted to be **not significant.**

13.129 **Climate Change**: The increased development in the area will likely lead to an increase in greenhouse gas emissions being emitted from this area of Manchester, although the impacts of this will be their contribution to global climate change and therefore it is difficult to specify impacts that are a direct result.

Completed Development

13.130 **Socioeconomics**: It is assumed that there will be further direct, indirect, and induced employment opportunities and further expenditure from increases in household spends associated with the wider development. The likely residual in-combination effects in relation to direct, indirect and induced job creation are considered to be of greater beneficial significance than that concluded for the completed development (i.e. negligible at the district and sub-regional levels).Based on the overall unit numbers proposed by the wider development together with the proposed development, the net additional household expenditure generated by the new residential population would be around £283,732,800 per annum. The likely residual in-combination effects related to an increase in household spending are therefore considered to be **major beneficial** in the long-term at the district and sub-regional levels.

13.131 The proposed development together with the wider development would contribute to MCC's and Greater Manchester's housing targets, by providing circa 15,000 new residential units. Collectively the proposed development and wider development would represent 7.5% of the total housing target of circa 200,000 new residential units identified in the GMSF. In the context of the MCC local plan requirements, the proposed development and wider development would result in the delivery of up to 25% of the housing requirement set out in the MCC Core Strategy over the Local Plan period (2009-2027). Therefore, the likely in-combination effects in relation to increase in housing stock are considered to be **major beneficial** significance in the long-term at the district and sub-regional levels

13.132 As regards capacity of educational facilities, needs will be considered on a case by case basis by MCC such that the likely residual in-combination effect on the capacity of primary and secondary schools is considered to be **negligible**. For healthcare facilities, it is assumed that if the health facilities within the wider development cannot absorb all requirements from the new residential population, financial contributions would be paid in mitigation against any adverse effects on healthcare services, such that the likely residual in-combination effects on healthcare services would be **negligible**.

13.133 The wider development is anticipated to deliver a mix of community facilities/resources. Where not provided, it is assumed that there is sufficient capacity within existing facilities or that any necessary financial contributions are adequately considered and secured at the time when the wider development (or parts of the development) are consented by MCC. Therefore, the likely residual in-combination effect on community facilities from the proposed development and the wider development would be considered to be **negligible**.

13.134 With regard to open/green space, the wider development is envisaged to include the creation of a City River Park alongside the River Irk corridor, enhancements to existing green and recreational spaces and the delivery of private and public amenity areas. Where public space is provided, this would be a resource for the community as well as future occupiers of the wider development. Therefore, the likely residual in-combination effects on open space from the proposed development and the wider development is considered to be of **greater beneficial** significance than that concluded for the proposed development (i.e. minor beneficial significance at the local level.

13.135 **Townscape & Visual:** Across the entire area there is potential for additional effects on views and townscape that will range from **minor to major/moderate beneficial** as the SRF delivers wide ranging positive change and regeneration across the area. Given the size of the Collyhurst Village development in comparison to the overall Framework area, its contribution to the identified in combination effects are likely to be **Minor**. Overall, the completed development as described in the SRF, is likely to have effects on townscape that will be **major beneficial – significant**.

13.136 **Drainage & Flood Risk**: All new development must comply with requirements for flood risk and relevant approvals processes for foul water such that in-combination effects will be **negligible** which is **not significant.**

13.137 **Transport & Access**: It was considered that with the information available at the current time, it is not possible to quantify the likely in-combination impacts or comment on their magnitude. However, once completed, the SRF will provide a new comprehensive movement network across the area that promotes green travel through new pedestrian and cycle routes, a central transport interchange, as well new roads and parking areas. This network of routes will connect new green spaces and public realm areas that are well designed, safe, managed and activated by adjacent buildings. It is anticipated that the completed development will result in a **major beneficial** effect to routes and publicly accessible spaces. This is considered **significant**.

13.138 **Air Quality & Dust**: Once all Northern Gateway developments are operational, there is the potential for increased vehicles movements with associated exhaust emissions within the Northern Gateway and on the wider road network - and thus affecting air quality. Various improvements in public transport provision and infrastructure, cycle facilities and pedestrian walkways have been recommended for the Northern Gateway SRF developments. Several such features have been included in the proposed development and these will contribute to the overall SRF aims for transport and associated air quality. Given the magnitude of these impacts will depend on factors including infrastructure provision, policy and funding as well as popularity of private car ownership, it is not possible to quantify the likely in-combination residual impacts at this stage, or comment on their magnitude. However, if improvements such as the provision of sustainable transport modes and encouragement of sustainable behaviours are supported, it is likely that the potential for overall adverse operational phase impacts will be less significant.

13.139 **Noise & Vibration**: On completion of the whole Northern Gateway Scheme, it is assumed that a similar level of control would be expected for any other scheme associated with the SRF. Therefore, cumulative impacts are predicted to be **not significant.**

13.140 **Climate Change**: The increased development in the area will likely lead to an increase in greenhouse gas emissions being emitted from this area of Manchester, although the impacts of this will be their contribution to global climate change and therefore it is difficult to specify impacts that are a direct result. All developments within the Collyhurst area should aim to reduce their emissions through fabric efficient design and the installation of renewable and low carbon energy generation.

Residual Impacts

13.141 **Socioeconomics**: Job Creation & Increased Spend - **Minor beneficial** in the short-term at the district level which is **not significant** and **negligible** in the short-term at the sub-regional level which is **not significant**; Increase in Housing Stock: **Moderate beneficial** in the long-term at the district level which is **significant** and **minor beneficial** at the sub-regional level which is **not significant;** Change in Demand on Social and Community Infrastructure: **Negligible** in the long-term at the local level which is **not significant;** and Open and Recreational Space: **Minor beneficial** in the long-term at the local level which is **not significant.**

13.142 **Townscape & Visual:** Across the whole SRF area, the completed developments are likely to have **major beneficial – significant** – effects.

13.143 **Drainage & Flood Risk**: Minor Adverse impact associated with the increased discharge of wastewater to the local combined sewer network. The impact will be managed through consultation and securing appropriate approvals from United Utilities for discharge to the sewer such that the in-combination effects would be **negligible – not significant**.

13.144 **Transport & Access:** The potential impacts of the development on severance, driver delay and driver stress are anticipated to be **negligible**. However, the potential impacts on pedestrian amenity and pedestrian delay are anticipated to be **moderately beneficial** while the potential impact on accidents and safety likely to see a **minor beneficial** impact. Once completed, the SRF will provide a new comprehensive movement network across the area that promotes green travel through new pedestrian and cycle routes, a central transport interchange, as well new roads and parking areas – likely to be a **major beneficial** effect to routes and publicly accessible spaces. This is considered **significant**.

13.145 **Air Quality & Dust**: Whilst it is not possible to quantify or comment on the likely in-combination residual impacts for air quality at this stage, once completed, the SRF will provide a new comprehensive movement network. This actively promotes green and sustainable travel that should reduce traffic emissions and improve air quality with beneficial effects.

13.146 **Noise & Vibration**: Across the whole SRF area, cumulative impacts are predicted to be **not significant.**

13.147 **Climate Change**: Likely to be an increase in greenhouse gas emissions being emitted in this part of Manchester, although difficult to predict significance at this stage. However, with the longer-term commitment to carbon neutrality, local residents and visitors to the SRF area should feel less vulnerability to the risks associated with extreme weather and urban overheating.

Conclusions

13.148 **Healthy Housing**: The additional dwellings are expected to accommodate 561 residents which will contribute to housing targets, accounting for over 0.41% of the MCC total housing target over the Local Plan period and 2.31% of the annual need across Greater Manchester identified in the GMSF. This is considered to represent an effect of **moderate beneficial** significance at the district level and **minor beneficial** significance at the sub-regional level. Provision of good quality housing is known to contribute positively to health and wellbeing.

13.149 Buildings have been designed to reduce vulnerability and risk to key effects associated with climate change – overheating, flooding, and extreme weather – both to protect the health and safety of users and to enhance the resilience of the proposed development itself. Likely **major beneficial** effects.

13.150 **Active Travel**: With implementation of a CEMP, the impacts of the construction vehicles upon the traffic and transport-related environmental factors are anticipated to be **negligible** in the short term (temporary) at the local level, which is **not significant.** During the operational phase, the effects on severance, driver delay and driver stress are anticipated to be negligible; and the effects on pedestrian amenity and pedestrian delay are anticipated to be moderately beneficial while the potential impact on accidents and safety likely to see a minor beneficial impact. Opportunities for supporting more sustainable transport would indicate further **beneficial** effects on health and wellbeing, both physical and mental, through implementation of the Travel Plan. The increase in more sustainable movement is likely to increase social interaction with potential for enhancements to mental health and general wellbeing.

13.151 In the longer-term, once all Northern Gateway developments are operational, the new comprehensive movement network across the area that promotes green travel will be established and will further encourage more sustainable transport that will have **major beneficial** effects for human health and wellbeing – both direct and indirect, and with **minor beneficial** impacts due to perception of increased safety through the increased numbers of pedestrians and cyclists.

13.152 **Healthy Environment**: The delivery of a high-quality development will have **moderate-minor beneficial** long-term impacts on the local townscape, which is not significant in EIA terms. There will be **major-moderate beneficial effects** on 3 of the 11 viewpoints investigated and this is **significant** in EIA terms. Such beneficial

effects on the local townscape and local views will contribute to healthier visual environment with benefits for wellbeing.

13.153 The risks of harm to health and wellbeing through flood risk and foul water discharge have been managed through project design and compliance with various regulations and standards in accordance with national requirements.

13.154 The risk of dust emissions during the demolition and construction phases has been managed to effects that are **negligible – not significant**. The effect of road traffic exhaust emissions arising from the development was investigated, including consideration of sensitive receptors, and likely effects were found to be **negligible – not significant**. The location of the site close to sustainable transport modes and the development proposals that encourage more sustainable movement, supported by a Travel Plan, may have synergistic effects on health and wellbeing through the negligible effects on air quality and the encouragement of more active movement through walking and cycling. Such health benefits are likely to be more significant in the longer-term once all Northern Gateway developments are operational with the new comprehensive movement network.

13.155 The risks and vulnerability to health and wellbeing associated with climate change effects such as overheating, flooding, and extreme weather have been considered as an integral part of the project design, seeking to reduce such risks as far as possible. The reduction in such risks will positively affect the quality of the whole environment for human health and the wider ecosystem through the landscaping design.

13.156 **Vibrant Neighbourhoods**: The local area is characterised by high deprivation and low economic activity. Jobs will be created at the demolition/construction and completed phases of the proposed development with likely **moderate beneficial** effects at the district level. The new residents will contribute to an increase in household spend that is estimated to be of **moderate beneficial** significance. Therefore, overall, the new residents will contribute to the aims for and sustainment of more vibrant neighbourhoods. The provision of employment and economic activity is known to contribute positively to health and wellbeing.

13.157 The potential risks of climate change from increased temperatures and precipitation increase has been considered and integrated into the overall project design. This will help to ensure social public benefit and contribute overall to the vibrancy of the neighbourhoods. The layout of the apartment blocks and the layout of the site facilitates social interactions that will contribute to more vibrancy of residential groups and neighbourhoods.

Other Information

References

Barton H, Grant M & Guise R (2nd edition 2010) Shaping Neighbourhoods: for local health and global sustainability Taylor & Francis Ltd, England

Cave, B. Fothergill, J., Pyper, R. Gibson, G. and Saunders, P. (2017) Health in Environmental Impact Assessment: A Primer for a Proportionate Approach. Ben Cave Associates Ltd, IEMA and the Faculty of Public Health. Lincoln, England www.iema.net

The Manchester Strategy 2025
https://www.manchester.gov.uk/info/500313/the_manchester_strategy/7177/our_vision_for_manchester_in_2025

Greater Manchester Taking charge of our Health & Social Care (2015)
http://www.gmhsc.org.uk/wp-content/uploads/2018/04/GM-Strategic-Plan-Final.pdf

Manchester City Council (2019) Strategic Regeneration Framework for Northern Manchester
http://northerngatewaymanchester.co.uk/

Greater Manchester Spatial Framework (Publication Draft October 2020)
https://www.greatermanchester-ca.gov.uk/media/3663/221020-agma-issue-opt.pdf

Manchester City Council (2020)
https://www.manchester.gov.uk/info/200088/statistics_and_intelligence/438/public_intelligence

https://secure.manchester.gov.uk/downloads/download/6529/neighbourhood_profile_-_higher_blackley_harpurhey_and_charlestown

Manchester City Council (2020) Taking Charge Together: Getting Manchester Active
https://takingchargetogether.org.uk/

NHS London Healthy Urban Development Unit (2017) Healthy Urban Planning Checklist
https://www.healthyurbandevelopment.nhs.uk/healthy-urban-planning-checklist-2017/

Public Health England (2019) Strategy 2020-2025

Public Health England (2018) Improving health and care through the home: a national memorandum of understanding

Public Health England (2017) Spatial Planning for Health: an evidence resource for planning designing healthier places

World Health Organization. Constitution. Geneva: World Health Organization. 1946. http://bit.ly/1PNNCdi

14. Climate Change

Introduction

14.1 This Chapter has been prepared by Watt Energy and Consulting Engineers (WECE) and reports the likely significant effects of the Proposed Development in terms of climate change in the context of the Site and surrounding, and wider environment, recognising that climate change is a global issue.

14.2 Three aspects of climate change assessment will be presented within this chapter:

- Assessment of Impacts: A conventional impact assessment that will focus on the potential effects of the Proposed Development (i.e. greenhouse gas (GHG) emissions on the climate);
- Mitigation of Climate Change: An overview of how the Proposed Development aids in the mitigation of climate change; and
- Vulnerability and Risk Assessment: A qualitative discussion of the vulnerability of the Proposed Development to climate change effects

14.3 This Chapter (with 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 chapters, 'Cumulative Effects' and 'Summary of Mitigation and Residual Effects' (Chapters 15 and 16 respectively).

Planning Policy Context

Legislation

Climate Change Act 2008[i]

14.4 The Climate Change Act 2008 establishes the framework for the UK to set and deliver GHG emission reduction targets; mainly through the establishment of the Committee on Climate Change which ensures targets are evidence based and independently assessed. The Act commits the UK government to reduce GHG emissions to a minimum of 80% below 1990 baseline levels by 2050. In addition to this, the Government is also required to regularly report on emission target progress, assess the risks and opportunities to the UK associated with climate change, and develop preparation and adaptive plans for these.

14.5 The UK Climate Change Risk Assessment[ii] is required to be produced every five years under the Climate Change Act 2008, in order to look at the risks and opportunities arising for the UK from climate change. The 2017 series of reports, alongside other documents from the European Commission[iii] and National House Building Council

Foundation[iv] are used in this chapter to assess potential vulnerabilities and adaptive potential of the proposed development and site regarding climate change impacts.

Town and Country Planning EIA Regulations 2017[v]

14.6 On the 16th May 2017, the European Commission Environmental Impact Assessment Directive (2014/52/EU) was incorporated into English law under the Town and Country Planning (Environmental Impact Assessment) Regulations 2017. This legislation requires the consideration of climate change within an EIA. The key text in relation to climate change is provided below.

Schedule 3: Regulation 5(4)

1(f): "The characteristics of development must be considered with particular regard to the risk of major accidents and/or disasters relevant to the development concerned, including those caused by climate change, in accordance with scientific knowledge."

Schedule 4: Regulation 18(3) INFORMATION FOR INCLUSION IN ENVIRONMENTAL STATEMENTS

"A description of the likely significant effects of the development on the environment resulting from, inter alia:" …

4: "A description of the factors specified in regulation 4(2) likely to be significantly affected by the development…climate (for example GHG emissions, impacts relevant to adaptation)"

5(f): "the impact of the project on climate (for example the nature and magnitude of GHG emissions) and the vulnerability of the proposed development to climate change"

Building Regulations

14.7 Parts of the subsequent discussion relate to energy use in buildings due to the direct relation with GHG emissions. Part L of The Building Regulations sets fabric energy efficiency standards, energy efficiency requirements and CO_2 emissions limits for dwellings and non-residential buildings. Approved document 'L1A and L2A 2013 edition incorporation 2016 amendments'[vi] provide details on the assessment criteria and methodologies used to test whether buildings are compliant. Aside from any local planning policy requirements it must be demonstrated that a building is compliant with the building regulations to be approved by building control. These regulations are the government's key mechanism for reducing CO_2 emissions in buildings.

14.8 Calculations are undertaken using a prescribed methodology - the Standard Assessment Procedure (SAP). A Target Emissions Rate (TER) is calculated, which represents the minimum standard for a building of that size. A Dwelling Emissions Rate (DER) is then calculated which is an estimation of likely emissions for the development in question. The DER must not exceed the TER for a building to be compliant.

14.9 Whilst these assessments are typically undertaken post planning when specification and information regarding mechanical and electrical systems have been produced, the regulations are significant to this assessment because it legally binds new buildings to be constructed to a minimum standard, which can be utilised as a baseline.

National Planning Policy and Sustainable Design Definitions

National Planning Policy Framework[vii]

14.10 The policies within the NPPF relevant to climate change can be found in chapter 14 'Meeting the challenge of climate change, flooding and coastal change'. Those most specific to this assessment are detailed below:

14.11 Paragraph 148: *"The planning system should support the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal change. It should help to: shape places in ways that contribute to radical reductions in GHG emissions, minimise vulnerability and improve resilience; encourage the reuse of existing resources, including the conversion of existing buildings; and support renewable and low carbon energy and associated infrastructure."*

14.12 Paragraph 149: *"Plans should take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk, coastal change, water supply, biodiversity and landscapes, and the risk of overheating from rising temperatures. Policies should support appropriate measures to ensure the future resilience of communities and infrastructure to climate change impacts, such as providing space for physical protection measures, or making provision for the possible future relocation of vulnerable development and infrastructure."*

14.13 Paragraph 150: *"New development should be planned for in ways that: a) avoid increased vulnerability to the range of impacts arising from climate change. When new development is brought forward in areas which are vulnerable, care should be taken to ensure that risks can be managed through suitable adaptation measures, including through the planning of green infrastructure; and b) can help to reduce GHG emissions, such as through its location, orientation and design. Any local requirements for the sustainability of buildings should reflect the Government's policy for national technical standards."*

14.14 Paragraph 151: *"To help increase the use and supply of renewable and low carbon energy and heat, plans should: a) provide a positive strategy for energy from these sources, that maximises the potential for suitable development, while ensuring that adverse impacts are addressed satisfactorily (including cumulative landscape and visual impacts); b) consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure their development; and c) identify opportunities for development to draw its energy supply from decentralised, renewable or low carbon energy supply systems and for co-locating potential heat customers and suppliers."*

14.15 Paragraph 153: *"In determining planning applications, local planning authorities should expect new development to: a) comply with any development plan policies on local requirements for decentralised energy supply unless it can be demonstrated by the applicant, having regard to the type of development involved and its design, that this is not feasible or viable; and b) take account of landform, layout, building orientation, massing and landscaping to minimise energy consumption."*

14.16 Paragraph 157: *"All plans should apply a sequential, risk-based approach to the location of development – taking into account the current and future impacts of climate change – so as to avoid, where possible, flood risk to people and property. They should do this, and manage any residual risk, by: a) applying the sequential test and then, if necessary, the exception test as set out below; b) safeguarding land from development that is required, or likely to be required, for current or future flood management; c) using opportunities provided by new development to reduce the causes and impacts of flooding (where appropriate through the use of natural flood management techniques); and d) where climate change is expected to increase flood risk so that some existing development may not be sustainable in the long-term, seeking opportunities to relocate development, including housing, to more sustainable locations."*

Any Other Relevant National Planning or Development Strategies

14.17 Supplementary planning guidance on climate change was issued in 2014 with the aim to advise "*how to identify suitable mitigation and adaptation measures in the planning process to address the impacts of climate change.*" This provides guidance to authorities for the implementation of climate change considerations into Local Plans but is helpful in outlining the topic areas for review and suggestions of general mitigation and adaptation methods.

Sustainable Design Definitions

14.18 As a result of ever changing and improving carbon emission targets, developments are required to take more sustainable approaches to the construction of their buildings which commonly differ from site to site. This results in buildings being explained under many definitions and using various terminology when they incorporate sustainable design to reduce these carbon emissions.

14.19 The most common of these terminologies can be summarised as:

- Net Zero Carbon;
- Carbon Neutral; and
- Low Carbon.

14.20 Table 14.1 below outlines the formal definitions of each of these terminologies.

Table 14.1: Common Terminologies

Terminology	Carbon/Energy targets	Definition
Net Zero Carbon	Net Zero carbon emission	Buildings that generate 100% of their energy needs on-site without the need to import energy.
Carbon Neutral	Net Zero carbon emissions	Buildings achieving net zero carbon emissions by offsetting through the use of a renewable supplier (electricity only) or via a financial contribution.
Low Carbon	Carbon emission % reduction normally over the Building Regulation standards	Buildings achieving reduced carbon emissions through energy efficient design.

Local Planning Policy

Manchester City Council (MCC) – Core Strategy Development Plan Document

14.21 Policy EN4 – Reducing CO_2 Emissions by Enabling Low and Zero Carbon Development states that:

"The Council will seek to reduce fuel poverty and decouple growth in the economy, growth in CO_2 emissions, and rising fossil fuel prices, through the following actions:

- *All development must follow the principle of the Energy Hierarchy, being designed:*
    - *to reduce the need for energy through design features that provide passive heating, natural lighting and cooling*
    - *to reduce the need for energy through energy efficient features such as improved insulation and glazing*
    - *to meet residual energy requirements through the use of low or zero carbon energy generating technologies*
- *Wherever possible new development and retrofit projects, including energy generation plant, must be located and designed in a manner that allows advantage to be taken of opportunities for low and zero carbon energy supplies.*
- *Where possible new development and retrofit projects will be used as a mechanism to help improve energy efficiency and provide low and zero carbon energy supplies to existing buildings.*
- *Where appropriate new development and retrofit projects will be required to connect to and/or make contributions to low or zero carbon energy schemes and/or to incorporate provision to enable future connection to any existing / potential decentralised energy schemes.*

- *The use of building materials with low embodied carbon in new development and refurbishment schemes."*

14.22 Policy EN6 – Target Framework for CO_2 Reductions from low or zero carbon energy supplies states that:

"Applications for residential development of 10 or more units and all other development over 1,000 sq m will be expected as a minimum to meet the target shown in Tables 12.1 or 12.2, unless this can be shown not to be viable. This should be demonstrated through an energy statement, submitted as part of the Design and Access Statement. Such a statement will be expected to set out the projected regulated energy demand and associated CO_2emissions for all phases of the development.

Developments smaller than the above threshold, but involving the erection of a building or substantial improvement to an existing building will also be expected to meet the minimum target, where viable, but will not be expected to submit an energy statement.

The target framework relates to three broad development locations and their potential for low and zero carbon, decentralised energy. The areas are defined as follows

- *Target 1 Network development areas: Locations where the proximity of new and existing buildings, the mix of uses and density of development provide the right conditions to support district heating (and cooling).*
- *Target 2 Electricity intense areas: Locations where the predominant building type has an all-electric fit-out such as retail units and leisure complexes.*
- *Target 3 Micro-generation areas: Locations where lower densities and a fragmented mix of uses tend to mean that only building scale solutions are practical.*

Domestic CO_2 emissions reduction targets

Table 12.1

Target	*% Minimum Requirement*
Target 1: Network development area	*CHP/district heating anchor or connection or where not feasible a 15% increase on Part L 2010*
Target 2: Electricity intense buildings	*+15% increase on Part L 2010*
Target 3: Micro generation area	*+15%increase on Part L 2010*

Non-domestic CO_2 emissions reduction targets

Tablet 12.2

Target	*% Minimum Requirement*
Target 1: Network development area	*CHP/district heating anchor or connection or where not feasible a 15% increase on Part L 2010*
Target 2: Electricity intense buildings (Applies to commercial uses with a high proportion of emissions from electricity use (>45kg CO2/m2))	*+10% increase on Part L 2010*
Target 3: Micro generation area	*+15% increase on Part L 2010*

Where the CO_2 emissions reduction required under any future revision to Part L of the building regulations becomes greater than the '% Minimum requirement', the reduction required under building regulations would apply.

Where the Council identifies an 'allowable solution', for example within an energy proposals plan, that would produce higher carbon reductions at no extra cost than that of achieving the '% Minimum requirement' (or required under building regulations if greater) the higher percentage reduction will be required. The cost comparison is based on the cost of incorporating the 'allowable solution' at design stage.

The energy statement will be required to be submitted at the outset of any proposed development (outline application or before). Developers will be permitted to use green infrastructure elements such as green roofs, green walls, street trees and waterways to contribute to compliance with CO_2 mitigation, subject to the energy statement incorporating evidence such as modelling to demonstrate compliance."

14.23 Since the policy has been adopted Part L of Building Regulations has been updated. The new 2013 regulations represent a 6% improvement on 2010 regulations and therefore the Proposed Development will require a 9% improvement on 2013 regulations.

14.24 Policy EN8 – Adaption to Climate Change states that:

"All new development will be expected to be adaptable to climate change in terms of the design, layout, siting and function of both buildings and associated external spaces. In achieving developments which are adaptable to climate change developers should have regard to the following, although this is not an exhaustive list:

- *Minimisation of flood risk by appropriate siting, drainage, and treatment of surface areas to ensure rain water permeability*
- *Reduction in urban heat island effect through the use of Green Infrastructure such as green roofs, green walls, increased tree cover and waterways*

- *The need to control overheating of buildings through passive design*
- *The opportunity to provide linked and diverse green space to enhance natural habitats which will assist species adaptation*

Developers will be permitted to use green infrastructure elements such as green roofs, green walls, street trees and waterways to contribute to compliance with CO_2 mitigation under Policy EN6, subject to sufficient evidence to quantify their contribution to compliance."

Further Manchester City Council Planning Document Targets

14.25 In addition to the policy requirements noted within the Core Strategy Development Plan, several other documents have been released by the Council that further establish the carbon reduction targets to be achieved in any new developments across the City.

14.26 These varying documents use differing terminology to describe achieving the various reduced carbon emissions.

14.27 Table 14.2 below provides a summary of the terminology and targets set out in these additional Manchester Planning Policy documents:

Table 14.2: Manchester Planning Policy documents terminology and targets

Planning Document	Time of Production or Adoption	Low Carbon Target	Sustainable Design Definition
Climate Change and Low Emission Strategies 2016-2020	2016	Targets a 48% reduction in carbon emissions from 1990-2020	Low Carbon (48% over 1990 emissions)
Manchester: A Certain Future	Produced in 2009, updated in 2013	Targets emitting 41% less CO2 in 2020 than in 2005 – Equates to 10% over Part L 2013 (if going by Part L requirements)	Low Carbon (10% over Part L 2013)
Draft Manchester Zero Carbon Framework	February 2019	Targets reducing carbon emissions by 50% over 2018 levels by 2022 and zero carbon by 2038	Low Carbon (50% over Part L 2013) by 2022, and Carbon Neutral by 2038

Other Relevant Policy, Standards and Guidance

14.28 Due to the relatively recent incorporation of climate change within EIA regulations, there is currently little guidance on best practise techniques and methodologies to use in the assessment of effects.

14.29 This assessment has considered the following recent guidance:

- The Institute of Environmental Management and Assessment (IEMA), 'Environmental impact assessment guide to assessing GHG emissions and evaluating their significance' (2017)[viii];
- IEMA and European Commission, 'Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment' (2013)[ixx] ;
- BSI - PAS 2080:2016 'Carbon Management in Infrastructure[xi]
- European Investment Bank (EIB) (2014)[xii], and,
- Royal Institution of Chartered Surveyors (RICS) 'Whole life carbon assessment for the built environment' (2017)[xiii]

14.30 Although not specifically designed for EIA purposes, the European Investment Bank guidance sets out a credible and viable definition for the baseline scenario in terms of climate change, as this differs to the definition of a baseline scenario in other sections of the ES.

14.31 This methodological approach is recommended by the European Commission in its guidance document, 'Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment' (2013).

14.32 In summary, the baseline scenario does not consider a "do nothing scenario". It assumes that there is demand for housing and supply is required for housing targets to be met. Therefore, the assessment baseline scenario can be considered to be a 'typical' development which:

- Delivers the same outputs as the proposed development;
- Is built to standard building regulations using normal construction practices; and
- Is constructed in a nominal location

14.33 A 2019 technical note from European Bank for Reconstruction and Development (EBRD)[xiv] states that this type of baseline is appropriate since "*it is recognised that 'something' must be done*" and it allows for a comparison of relative effect.

Approach

Assessment Methodology

14.34 The assessment considers the CO_2 emissions associated with electricity use within those buildings forming the proposed development, with specific exclusions detailed in the subsequent sections.

14.35 The assessment considers the operational CO_2 emissions over an 80-year period. It is not possible to fully understand, at this time, how energy and emissions use will change within buildings during this period. As such, it has been assumed that energy use will remain the same, year on year, throughout the assessment period.

14.36 The baseline and absolute emissions for the residential units will be based on a predicted absolute energy demand provided by WECE. This covers only regulated energy consumption. The unregulated energy consumption will be estimated by WECE. The baseline for the commercial units will be based on benchmarks from CIBSE Guide F.

14.37 The absolute emission scenario takes account the fact that the Proposed Development aims to reduce regulated residential emissions by 20.6% for the Collyhurst Village site, as stated within the Energy Strategy Statement which is submitted in support of this application.

Defining Parameters

Residential

14.38 The build mix, detailed below, has been provided by the architect and is based on the current proposal of 163 terraced houses and 2no apartments blocks featuring 76 apartments.

14.39 Table 14.3 indicates the residential build mix that has been used in the assessment.

Table 14.3: Residential build mix used in the energy and emission modelling

Build Mix	No. of Dwelling Type	Minimum Floor Area (m2) for Dwelling Type
2B4P Terraced House	56	85.25
3B5P Terraced House	88	103.6
4B6P Terraced House	23	113.5
5B7P Terraced House	1	135.33
2B3P Duplex Maisonette	12	72
3B5P Duplex Maisonette	4	104.8

Build Mix	No. of Dwelling Type	Minimum Floor Area (m2) for Dwelling Type
1B2P Apartment	18	50
2B3P Apartment	38	61.5
2B4P Apartment	2	74
3B5P Apartment	2	92

Non-Residential

14.40 The non-residential floor area is comprised of commercial space with a total floor area of 292.5m^2. For this assessment it has been assumed that the commercial area will fall under the class E or F1 brackets. and the baseline and absolute energy demand will be based off an average of a range of potential uses within CIBSE Guide F.

Scope of Assessment

14.41 Emissions from the construction and operational phase will be assessed. The construction emissions will be an estimate of the embedded carbon within the materials used and also the emissions associated with fossil fuels and electricity used during construction. Operational emissions include those from the electricity use for both regulated and unregulated energy use during the operational phase of the development.

14.42 The emissions associated with the transport movements of residents, occupants and visitors once the proposed development becomes operational are not included in the assessment as these are largely tied to actions outside the Applicant's control.

14.43 The assessment considers CO_2e emissions, but in practice is limited to consideration of Carbon Dioxide (CO_2), Methane (CH_4) and Nitrous Oxide (N_2O) only. It is understood that there are other emissions that contribute to climate change, such as those found in refrigerants e.g. CFCs. These emissions are considered to be minimal in volume by comparison to the operational CO_2e emissions and have therefore not been considered in the analysis.

14.44 The assessment excludes development floor area associated with on street and residential parking and gardens.

Construction

14.45 An estimate of the likely emissions associated with the construction process has been undertaken. The assessment has used the method detailed within 'Whole life carbon assessment for the built environment' published by RICS to help inform the emissions from both the on-site construction process as well as the embodied emissions within two of the main materials used, concrete and steel.

Baseline Calculation

14.46 The parameters set out in Table 14.4 were used to calculate baseline emissions as outlined in paragraph 14.33.

Table 14.4: Summary of the parameters and assumptions used to develop the baseline.

Element	Calculation Method and Assumptions	
	Residential	Non-Residential
Property Types, Floor Areas and Build Mix	The minimum floor areas for each type of residential unit have been provided, along with the number of occupants of each unit.	An overall floor area has been provided, however, the mix of commercial area is Use Class E or F1.
Regulated Energy Use	This has been supplied through the TER within the SAP assessments commissioned as part of the energy statement. The TER sets a minimum allowable standard for the specific building.	Without undertaking simplified building energy model (SBEM) assessments the exact emissions associated with the proposed development cannot be calculated. Therefore, the buildings are categorised into the appropriate CIBSE Guide F Benchmarks Category. Using the floor areas and Energy Benchmarks in CIBSE Guide F, an estimated baseline energy use can be calculated by averaging a range of energy demands for potential uses. These calculations include regulated and non-regulated energy use.
Unregulated Energy Use	Unregulated energy use in dwellings is largely influenced by occupancy, lifestyle, hobbies and human behaviour and is therefore highly variable between dwellings. This is not included within the SAP assessments; however, this will be calculated using SAP equations based on the minimum floor area.	
Total Energy Use	The regulated and unregulated energy use are combined to provide the total energy requirements for each property type.	

Proposed Development Calculation

14.47 Once a baseline scenario has been established using the reference properties, the absolute emissions (Ab) of the proposed development are calculated. Table5 provides details of the databases and calculations used in

establishing the actual energy use. The property types, floor areas and build mix remain the same as used in the baseline calculation, along with assumptions for residential unregulated energy projection.

Table14.5: Summary of the parameters and assumptions used to calculate absolute energy use.

Element	Calculation Method and Assumptions	
	Residential	Non-Residential
Regulated Energy Use	SAP Assessments have been completed by WECE, who have produced the Energy Strategy Statement for the proposed development which is submitted in support of the planning application	Without undertaking SBEM assessments the exact emissions associated with the proposed development cannot be calculated. Therefore, the buildings are categorised into the appropriate CIBSE Guide F Benchmarks Category. Using the floor areas and Energy Benchmarks in CIBSE Guide F, an estimated baseline energy use can be calculated by averaging a range of energy demands for potential uses. These calculations include regulated and non-regulated energy use. A 9% reduction has been applied to represent an improvement in fabric efficiency.
Unregulated Energy Use	Unregulated energy use in dwellings is largely influenced by occupancy, lifestyle, hobbies and human behaviour and is therefore highly variable between dwellings. This is not included within the SAP assessments; however, this will be calculated using SAP equations based on the minimum floor area.	
Total Energy Use	The regulated and unregulated energy use are combined to provide the total energy requirements for each property type.	

Emission Calculation

14.48 There are two calculations being provided within this chapter, the first is the overall comparison between TER and DER and this will show whether the Proposed Development has met the policy targets. The second is the calculation of operational lifetime emissions for the Proposed Development over an 80-year lifespan. These two calculations differ based on the emission factors used. The TER and DER for regulated emissions in the Energy Strategy Statement used an emission factor that has since been updated to reflect the decarbonisation of the grid. Therefore, to ensure consistency the same emission factor of 0.519 $kgCO_2/kWh$ has been used to calculate the TER and DER for the unregulated energy use for the residential units as well as the regulated and unregulated energy use for the commercial units. The operational emissions over the course of the Proposed Developments lifetime will be calculated based on the method below, using the most up-to-date figures.

14.49 Once the operational electricity and fossil fuel use have been calculated for the proposed development, the CO_2 equivalent (CO_2e) emissions can be projected. The emissions have been projected each year for the modelled operational period of 80 years. It is noted that the proposed development does not have a predetermined end of life or demolition plan, however for the purpose of the assessment a defined time period had to be selected.

14.50 The projection relies upon CO_2e conversion factors for grid electricity provided by The Department for Business, Energy and Industrial Strategy (BEIS).

14.51 The CO_2e conversion factor for grid electricity is likely to decline over time due to the decommissioning of coal fired power stations and the continuing deployment of renewable energy technologies, natural gas generation and nuclear generation. Therefore, the CO_2e conversion factor for grid electricity is based on the long-term grid average projection. It should be reiterated that this projection is itself based on a large number of assumptions and could considerably under or overestimate the rate of decarbonisation, which will have a significant effect on the overall emissions associated with the development over its lifetime.

14.52 Emissions are calculated by multiplying the total energy demand in kWh by the appropriate conversion factor.

14.53 In terms of GHG emissions, the proposed development is assessed for its "relative emissions (Re)" or net emissions which is expressed as the difference between absolute emissions generated by the proposed development and the baseline emissions.

Relative Emissions (Re) = Absolute Emissions (Ab) – Baseline Emissions (Be)

Sensitivity

14.54 When considering the effects of the proposed development on climate, unlike other technical areas, assessment of individual receptors is not strictly applicable. Climate change is a global phenomenon and highly localised impacts as a direct result of emissions associated with this development are extremely unlikely. It is understood that certain regions, populations, and species are more sensitive to climate change than others, but it would not be reasonable to provide an assessment of the proposed development's potential impact on these receptors as any single development would have an infinitesimal impact on global climate change overall. However, it is still important to undertake the assessment to ensure the proposed development does not emit unacceptable levels of emissions not only in an effort to reduce future climate change impacts, but to contribute towards local and national emission targets.

Characterisation of Impact

14.55 The impact that is assessed in relation to climate change is the release of GHG emissions. The categorisation of this in relation to the following criteria is explained below:

- Positive or negative – The impact overall can only be negative due to the guaranteed release of GHG emissions from development. However, the purpose of this assessment is to consider the efforts of the Applicant to minimise the negative impact. Therefore, in the context of this assessment, the impact has been considered 'positive' if the Applicant has gone beyond the minimum requirements of national and local policy to reduce or minimise emissions.
- Extent – The release of GHG emissions may occur on a local extent, however the associated impact i.e. contribution to global warming and climate change, is a global issue.
- Magnitude – Any single development has an infinitesimal impact on global climate change overall, but the assessment is still important to assess a Development's contribution to local and national targets. Additionally, the assessment considers magnitude in the context of emission reduction compared to baseline scenarios.
- Duration and Timing – The duration of the impact extends from construction, through operational and decommissioning phases of the proposed development. Having said which, research has shown that the operational phase typically accounts for around 90-95% of emissions across the lifetime of a development.
- Frequency – Emissions are likely to occur albeit continuously across the lifetime of the site as a result of fossil fuel combustion, electricity use, transportation as well as natural processes.
- Reversibility – Once emitted into the atmosphere, GHG are circulated and partake in different processes and reactions, creating and breaking into different molecules, with varying lifespans and effects – this is essentially irreversible. It is however, possible to take actions which can sequester certain gases and remove them from the atmosphere, such as the use of green infrastructure and tree planting.
- Likelihood - Essentially, any form of activity or process will result in the release of GHGs to some degree. This includes activity associated with positive climate change action, such as the development of renewables. As a result, this assessment aims to consider how the inevitable impact is minimised and reduced in the design and planning of the proposed development.

Significance Criteria

14.56 For the purpose of this assessment, effects that are deemed to be significant are those described as minor, moderate or major in adverse scenarios, and in beneficial scenarios that exceed the local policy. This goes beyond the standard EIA practice and represents a strict and conservative approach, which aligns with the magnitude of climate change as an issue, and local policy targets to reduce carbon emissions beyond Building Regulations. The significance criteria are provided in Table 14.6.

Table 14.6: Significance Criteria

Relative Emissions Compared to Baseline	Impact	Effect	Significance
Over 25% higher	Negative	Major Adverse	Significant
Up to 25& higher	Negative	Moderate Adverse	Significant
Up to 15% higher	Negative	Minor Adverse	Significant
Up to 5% lower or no higher	Neutral	Neutral	Not Significant
Up to 15% lower	Positive	Minor Beneficial	Not Significant
Up to 25% lower	Positive	Moderate Beneficial	Significant
Over 25% lower	Positive	Major Beneficial	Significant

14.57 All emissions that have an adverse impact are significant because this outcome would indicate that the proposed development will fail to meet the minimum requirements set out in Building Regulations. Emissions from a proposed development that fall below the baseline can be classed as beneficial as this would indicate that building efficiency and energy use exceeds statutory regulation requirements. The beneficiary impact only becomes significant when the requirements of local policy are exceeded, demonstrating the Applicants commitment to sustainable development.

14.58 To avoid misinterpretation, it is important to understand the justification, but also the limitation, behind the use of this significance criteria. It leads to a robust method for comparing likely emissions arising from the proposed development, relative to the baseline of a similar 'typical' development. For planning purposes, where it is important to weigh the benefits of one development against another this is a useful and practical approach. The alternative approach, which arguably holds to a stricter interpretation of the absolute effects of the proposed development, is to take the baseline to be the 'no development' scenario. If this latter approach were to be adopted, then almost any form of development would result in increased levels of carbon emissions and would be considered to cause adverse (and most likely significantly adverse) impacts. As such, it would be much more difficult to identify whether a particular developer was making a genuine attempt to reduce emissions beyond the requirements of standard regulatory policy.

Assumptions/Limitations

14.59 The assessment considers the operational CO_2e emissions over an 80-year period, which is assumed to be representative of the development's 'lifetime'. It is not possible to fully understand, at this time, how energy use and emissions will vary within buildings during this period, but it has been assumed that energy use will remain

the same, year on year, throughout the assessment period. This chapter assumes that all energy demand will be provided by electricity.

14.60 Unregulated energy use could vary substantially when the proposed development is operational, but it is not possible to accurately predict this energy use and a reasonable allowance has been made to account for this. The same unregulated energy use has been modelled in both the baseline and absolute scenarios, to represent the same behavioural traits of residents living in either property.

14.61 It is acknowledged that the CIBSE Guide F benchmarks, which have been used to derive the baseline emissions arising from non-residential development, date from 2012. This dataset is quite old and improved operating practices and energy efficiency measures available in modern buildings mean these now potentially overestimate energy use and hence associated emissions. In some cases, when an all-electric demand is unavailable, the energy demands for fossil fuels and electricity have been added together to get an overall demand.

14.62 The construction calculations are based on estimated tonnages for steel and concrete. There are a number of other materials that will be used within the construction process that have not been included within the emissions figures. There was insufficient data to estimate fuel usage during the construction period. Therefore, the construction emissions figure, including embodied emissions from the materials used is likely to be much higher than estimated.

Consultation

14.63 The scoping response states that:

> *"It is considered that the climate change impacts of the Proposed Development are significant and require assessment through the EIA process.*
>
> *The ES should consider the impact of the Proposed Development on climate change both through the construction and operational phases of the development and the significance of these impacts needs to be considered through a relevant chapter in the ES.*
>
> *Matters of internal water consumption, air quality, transport and traffic, flood risk and socioeconomic effects have all been scoped into the ES due to these disciplines having significant environmental impacts. All of these matters affect climate change and therefore the Proposed Development is likely to give rise to significant environmental impacts on the climate which should be considered and evaluated through the ES*
>
> *A broader approach and methodology for assessing the impact on climate change should be considered. Impacts and potential mitigation from the other technical chapters should feed into this assessment particularly around management of surface water, waste management, social value, green and blue infrastructure, biodiversity and ecology, travel planning and efficiency of the building fabric of the new*

homes and use of renewable energy as part of promoting a low/zero carbon development and reducing emissions and the likely environmental impacts of this"

Baseline Conditions

14.64 The TER provided within the Energy Strategy Statements are 24.4 $kgCO_2/m^2$/year, for the proposed development, this covers the regulated energy of the residential units. This figure will be used as a comparison to understand whether the Proposed Development achieves the local policy.

14.65 Using the predicted regulated energy demand for the Proposed Development's residential units, a baseline energy demand has been calculated.

14.66 Using the indicative property data, the total energy and CO_2e emissions have been projected for the baseline development's 80-year operational lifespan.

14.67 The baseline operational energy demands have been modelled in line with the baseline methodology discussed, subsequently converted into CO_2e emissions. A summary of this data is provided in 14.7. These figures are based of the most up-to-date emission factors which differ from those used to calculate the TER and DER.

Table 14.7: Total emissions for baseline scenario

Scenario	Energy Demand (MWh) per Year	Emissions (tCO_2e) per Year
	Collyhurst Village	
Residential	1,543.68	536.92
Non-Residential	527.10	134.73
Full Development	2070.78	671.65

14.68 The total baseline emissions during the 80-year operational lifespan has been modelled as 53,732.0 tCO_2e when using SAP 9.0 carbon factors.

Local Greenhouse Gas Emissions

14.69 The surroundings of the Site has many sources of GHGs and as a result it would be difficult to quantify the exact amount of GHGs being emitted.

Site Emissions

14.70 The Site is currently occupied by 28 dwellings and a shop however estimating the emissions associated without proper calculations is unrealistic.

Future Baseline

14.71 In the future if the Site was developed the emissions would vary depending on the use, therefore it's unrealistic to provide an estimate.

Embedded Mitigation

Construction

14.72 The construction of new buildings and building elements has a large environmental impact in terms of both the, energy and embodied carbon of new materials. Therefore, through Policy E1.6 of the Unitary Development Plan (UDP), MCC require all new developments to use environmentally friendly materials, where possible, and encourages the use of recycled building materials. This information will also be incorporated into a SWMP, as part of a site waste management strategy, as a means of promoting the re-using and recycling of materials.

14.73 The site waste management strategy will ensure first priority is give to the reusing of any demolished materials within the site, however if this is not possible secondary priority must be given to the redirecting from landfill; in line with the waste hierarchy.

14.74 Where new materials are to be used, careful consideration of their environmental impact will be taken. This will be achieved by ensuring that only materials that score well under The Green Guide to Specification are used. This useful online tool can be used as a reference that provides guidance on the relative environmental impacts for a wide range of different building specifications. The BRE's Environmental Profile Methodology determines the Life Cycle Assessment (LCA) of materials, which is what the Guide's specifications are based on.

14.75 In order to take full advantage of low impact materials, elements key to the scheme should be specified to achieve ratings of between A+ and C under The Green Guide's ratings. Insulation materials that are specified will also have a global warming potential (GWP) of 5 or less, with an ODP of 0. Additionally, 100% of all timber used as part of the scheme will be responsibly sourced from suppliers that are either Forest Stewardship Council (FSC) accredited, Programme for the Endorsement of Forestry Certification accredited, or a similar recognised accreditation body.

Completed Development

14.76 The absolute scenario includes improved fabric efficiency beyond that of minimum building regulations, which will help the Proposed Development achieve the reduction targets within the local policy. It also includes the emissions saved from the solar PV.

14.77 PAS2080:2016 'Carbon Management in Infrastructure' is a framework for the carbon management process that focuses on the four key parts of the chain (Asset Owners/Managers, Designers, Constructors and Product/Material Suppliers). It is based around the concept that as delivery of a development progresses the people involved in managing carbon changes and the earliest stages offer the greatest opportunities to reduce carbon and cost. Following the design freeze and the beginning of the procurement the ability to influence carbon decreases from 80 to 50%, dropping further to 20% once construction begins. This highlights the importance of carbon management early in the design stages.

14.78 In order to meet local policy requirements, the Proposed Development will need to ensure that there is a 9% improvement on Part L Building Regulations for both the residential and non-residential elements of the building. This can be met through both fabric improvements and including low carbon energy generation.

14.79 In order to reduce energy use, the Applicant will be required to design buildings that reduce space heating/cooling requirement and utilise energy efficient materials for construction, lighting and appliances.

Potential Impacts

Demolition and Construction

14.80 The emissions estimated within this section include emissions involved in producing the materials used, the emissions as a result from the transportation of those materials to the site, assuming at least 80% of all demolished materials are reused, and the emissions from the construction and installation process.

14.81 The on-site emissions have been estimated using an individual embodied carbon study undertaken on one of the proposed houses, which has then been extrapolated to fit the total number of dwellings across both sites. As a result of this, the average construction site emissions has been estimated as a value of 848 $kgCO_2e$/£100k. The emissions arising from the on-site emissions from the construction and installation process are estimated to be 2639 tonnes of CO_2e. This expected to have a **neutral, non-significant impact** when compared to a similar development carrying out construction to generic standards.

14.82 The calculations for the embodied emissions have taken account of the following materials:

- Timber; and
- Brickwork.

14.83 There will also be emissions from the construction phase itself including fuel usage and electricity usage from plant and machinery. It is estimated that within a generic residential block around 50% of a developments carbon emissions over the course of its lifetime are as a result of the construction process. This is predicted to have a **neutral, non-significant impact** as a similar development would likely require a similar amount of materials.

14.84 The materials used within the development should be recycled where possible to reduce potential further emissions related to the production of new materials.

Completed Development

14.85 The DER for the regulated energy use within the residential units, which includes renewable technologies, has been calculated to 19.3 kgCO2/m2/year, for the proposed development. Which equates to a 20.6% reduction from the baseline.

14.86 The projected total energy use and CO_2e emissions for the Proposed Development's 80-year operational lifespan has been modelled to produce an absolute scenario which includes the improvements in fabric efficiency and the use of Solar PV for the apartment blocks. This can then be compared to the baseline scenario, a summary of this data is provided in Table 14.8. The site at Collyhurst Village shows a 20.6% improvement in the regulated residential energy demand.

14.87 As with the baseline scenario these figures have been calculated based on the latest carbon emission factors, which differ from those used to calculate the TER and DER.

Table 14.8: Total energy demands and emissions for both the baseline and absolute scenarios.

Scenario	Energy demand (MWh) per Year	Emissions (tCO_2e) per Year		
		SAP 9.0	SAP 10.0	SAP 10.1
Residential – Baseline	1,543.68	536.92	326.68	316.1
Non-Residential – Baseline	527.10	134.73	134.73	134.73
Full Development – Baseline	2,070.78	671.65	461.41	450.83
Residential – Absolute –	821.71	426.47	191.46	111.75
Non-Residential – Absolute	480.80	122.60	122.6	122.6

Scenario	Energy demand (MWh) per Year	Emissions (tCO_2e) per Year		
		SAP 9.0	SAP 10.0	SAP 10.1
Full Development – Absolute	1,302.51	549.07	314.06	234.35

14.88 The total absolute emissions for the 80-year operational lifespan has been modelled as 18748.0 tonnes of CO_2e. This figure takes account of the decarbonisation of the national grid over the 80-year period.

14.89 To achieve the policy requirements in EN6 the Proposed Development must achieve a 15% improvement in 2010 Building Regulations. This is the equivalent of a 9% improvement on 2013 Building Regulations, which the TER is calculated using. This is due to the 6% improvement in building regulations between 2010 and 2013. Currently the DER is at a 20.6% improvement on its respective TER. This is much higher than the 9% policy target, and therefore results in compliance with MCC's local policies and planning documents.

14.90 The predicted relative emissions reduction over the lifetime of the development including embedded mitigation, is 48.01% for the proposed development. This would result in a **positive, major beneficial** impact.

Mitigation Measures

Demolition and Construction

14.91 Mitigation measures for construction include using materials that have low embodied emissions and reducing the distance travelling to the site.

Completed Development

14.92 Energy efficiency and emissions reductions have been maximised for the development and 20% reductions have been achieved.

14.93 In addition to significant emission reductions, the whole development can be classified as carbon neutral, as per the definition outlined in Table 14.1, due to obtaining all of the energy used on site from a 100% renewable energy electricity supply provider.

Residual Impacts

14.94 The Proposed Development will result in the emission of GHGs, which is a long term and permanent effect.

14.95 The residual impacts are summarised in Table 14.9. It is worth reiterating that the result of a neutral impact is purely in relation to the applicant either meeting emission targets within Part L of the Building Regulations and should not be interpreted as the Proposed Development having a positive contribution towards climate change.

Table 14.9: Residual Effects Summary

Description of Effect	Potential impact including significance	Mitigation	Residual Effect including significance
Construction and Demolition			
GHG emissions contributing to global warming and climate change	**Neutral** and **not significant** – same figure as the baseline.	Using environmentally friendly materials that are locally sourced where possible. Recycling and reusing demolished materials as much as possible within the proposed build to reduce the embodied carbon	**Neutral** and **significant**
Completed Development			
GHG emissions contributing to global warming and climate change	**Neutral** and **significant**	Highly energy efficient build standard and the inclusion of Solar PV on the apartment blocks. Carbon neutral through provision of operational energy supply from a 100% renewable energy provider.	**Positive** and **significant**

14.96 In order to eliminate all residual effects, the development would need to have completely net zero emissions. Notwithstanding embodied emissions in the materials and emissions from the plant used to construct the development, it would also be necessary to eliminate all operational emissions. Committing to green electricity tariffs and Class A appliances would help push operational emissions down. However, future homeowners and business would be able to select their own suppliers, so this cannot be guaranteed. This the effect is highlighted in PAS2080:2016 guidance which states there is minimal opportunity to impact carbon once a development is operational unless indirectly influenced in advance for e.g. installation of LED lighting, green energy sources etc.

Assessment of In-Combination Effects

14.97 The assessment of in-combination effects in conjunction with other developments in the area presents a challenge from a climate change standpoint. The increased development in the area will likely lead to an increase in GHG emissions being emitted from this area of Manchester, although the impacts of this will be their contribution to global climate change and therefore it is difficult to specify impacts that are a direct result. All developments within the Collyhurst area should aim to reduce their emissions through fabric efficient design and the installation of renewable and low carbon energy generation.

Vulnerability and Risk Assessment

14.98 The update to EIA regulations not only require an assessment of the potential impacts of a proposed development on climate change but also its vulnerability to climate change itself. In the context of the proposed development, the spirit of the regulations is to ensure that the risk to climate change effects are identified and mitigated if required.

Global Climate Change Projections

14.99 Table 14.10 highlights the main projected global climate change issues.

Table 14.10: Projected global impacts of climate change.

Climate Change Issue	Projected Global Impacts
Solar Radiation	Long term projected changes in surface solar radiation, as a result of global warming, would suggest a decrease in available solar power due to a decrease in downwelling shortwave radiation, likely linked to the increase of water vapourxv. This is considered to be anthropogenic strengthening of "natural" decadal variability in irradiance, known as global dimming and brightening, which is influenced by synoptic weather patterns, cloud variations and atmospheric aerosolsxvi.
Heat Waves	The Intergovernmental Panel on Climate Change (IPCC)xvii predict that temperature extremes will increase more rapidly than global mean surface temperature, with the number of hot days projected to increase in most land regions.
Extreme Rainfall and Flooding	IPCC and Met Officexviii both suggest a general uncertainty in the projection of changes in heavy precipitation for the UK due to position in the transition zone between north and south Europe's contrasting projected changes. It is generally agreed the northern parts of the UK will experience overall increases of up to 10%, whilst southern areas

Climate Change Issue	Projected Global Impacts
	may experience decreases of up to 5%. Overall, the UK is expected to see a general increase in precipitation trends up to 2100.
Rising Sea Levels	The most recent modelling indicates global sea level rise of 0.26-0.77m by 2100, under a 1.5°C warming scenarioxxiii. Risk is amplified on small islands and in low lying coastal areas and deltas.
Storms and Winds	Atmospheric circulations have large variability across interannual through to decadal time scales, which makes forming projections with any reasonable confidence very difficult. There is more robust evidence in the Northern Hemisphere that since the 1970s there has been a general poleward shift of storm tracks and jet streams and near-surface terrestrial wind speeds have been declining by approximately 0.1-0.14 m s-1 per decade across land1. Despite anemometers being used for decades to measure near surface wind speed, the data has rarely been used to analyse trends and lacks important instrumentation meta data. In general, confidence is low in wind speed projections due to large uncertainties

[1] Intergovernmental Panel on Climate Change (IPCC) (2014). Fifth Assessment Report: The Physical Science Basis.

[1] Department for Environmental and Rural Affairs (DEFRA), Department for Business, Energy and Industrial Strategy (DBEIS), Met Office and Environment Agency (2018). UK Climate Projections. Available at: https://ukclimateprojections-ui.metoffice.gov.uk/ui/home

[1] National House Building Council Foundation (NHBC) (2007). Climate change and innovation in house building: designing out risk (NF3).

[1] European Commission (2013). Adapting infrastructure to climate change.

[1] Patt, A., Pfenninger, S. and Lilliestam, J., (2013). Vulnerability of solar energy infrastructure and output to climate change. Climate Change 121 pp93-102.

[1] Carbon Trust (2012). Air conditioning: maximising comfort, minimising energy consumption.

[1] Buildings Performance Institute Europe (BPIE), Global Buildings Performance Network (GBPN), World Business Council for Sustainable Development (WBCSD), Cambridge Institute for Sustainability Leadership (CISL) and Cambridge Judge Business School (CJBS) (undated). Climate Change: Implications for Buildings. Key findings from the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (AR5) on Buildings.

[1] Grimm, N.B., Chpain, F.S., Bierwagen, B., Gonzalez, P., Groffman, P.M., Luo, Y., Melton, F., Nadelhofferm K., Pairis, A., Raymond, P., Schimel and Williamson, C (2013). The impacts of climate change on ecosystem structure and function. Front Ecol Environ 11, 474-482

[1] Friends of Ecosystem-based Approach (2018). Making Ecosystem-based Adaptation Effective. A technical paper prepared for the 46th session of the UNFCCC Subsidiary Body for Scientific and Technological Advice conference.

[xii] UK Green Building Council. (2018). *Social value in new development: An introductory guide for local authorities and development teams.*

Climate Change Issue	Projected Global Impacts
	across global data sets.
Cold Spells and Snow	It has been observed the spring snow cover has been continuing to decrease in extent in the Northern Hemisphere and that cold temperature extremes are projected to decrease along with the number of frost days2.

Regional Climate Change Projections

14.100 The UKCP18 dataset[xix] provides future climate projections for land and marine regions as well as observed climate data for the UK. Analysing time series plume data from UKCP18 provides an indication of climate projections for the regional 25km grid that encompasses Manchester City Centre including the site location to the north east of the City Centre. **Figure 14.1** and **Figure 14.2** show the temperature and precipitation projections from the four Representative Concentration Pathways (RCP)[3] up to 2100, which can be summarised as:

- Temperature – there us an overall increase in temperature across the region in all four RCP scenarios that ranges from an increase of 0.7 to 3.9°C across the lifetime of the proposed development.
- Precipitation – projections for precipitation in the region are markedly similar across all RCP scenarios showing decadal fluctuations that see precipitation fall, stabilise and rapidly increase over a 10-year period. These changes in precipitation rate anomalies fluctuate between approximately -3% and 2.5%.

Climate Change Impacts

14.101 The Design of Future Climate Report published in 2010 identified three broad risk categories to buildings from future climate change in the UK, which are:

- Risk to comfort and energy performance: warmer winters will reduce heating requirements, however the increased use of cooling systems in the summer will present a challenge to energy consumption and carbon emissions;
- Risk to construction: resistance to extreme conditions, detailing, and the behaviour of materials; and
- Risk to water management: management of water during both flooding and drought events, and changes in soil composition.

[3] The RCPs are used to analyse how different emission scenarios could effect climate projections. These range from RCP2.6 where atmospheric emission concentrations are strongly reduced, through to the worse case scenario, RCP8.5, where emission concentrations continue to rise, unmitigated.

14.102 Combined, these categories can be considered climate change threats that could result in increased energy demands, economic losses and loss of life.

14.103 Climate change may result in variations in approach to general building design and construction in order to offer a higher degree of protection against the identified perils. Many of these improvements will be brought about using existing off-the shelf components that are in common use in other places around the world but may not previously have been considered necessary in parts of the UK. Such design improvements will be beneficial for the overall quality of the UK housing stock, although it may result in some additional costs for developers.

14.104 As well as seeking improvements in the construction techniques for buildings there will also be a need to improve various aspects of their operational performance to provide more resilience for residents and occupants.

14.105 At more localised levels the effects themselves can manifest in different ways and therefore the most appropriate strategies should be selected on a site-specific basis. A coastal village may be at most risk from sea-level rises and storm surges, while at inland locations the threat of heat waves or high winds might be more significant. Adaptation involves developing a resilience and a preparedness to deal with the likely consequences of climate change..

14.106 Table 14.11: Potential effects of climate change on the proposed development.

14.107 1 indicates the impact on the proposed development that could arise from climatic effects, reproduced from data in the National House Building Council and European Commission reports[4] [5] and the UK Climate Change Risk Assessment (2017) Evidence Report[ii].

Table 14.11: Potential effects of climate change on the proposed development.

Climatic Factor	General impact	Component/sub structure impacted
Soil Drying	Increase will affect water tables and could affect foundations in clay soils.	Increased risk of basement heave or subsidence, water ingress, consequential damage to finishes and stored items. Ground shrinkage can lead to failure of electrical, gas and water pipes, foundations and sub-structures.
Temperature	Maximum and minimum changes will affect heating, cooling and air conditioning costs. Frequency of	Air conditioning / heating / cooling systems due to increased cooling / decreased heating requirements. Overheating of mechanical and electrical equipment

Climatic Factor	General impact	Component/sub structure impacted
	cycling through freezing point will affect durability. Daily maximum and minimum temperature will affect thermal air movement.	effecting lifespan, reliability and potential health and safety issues. Plastic materials will have a reduced lifespan. Structure / cladding / roofing membranes, sealants, pavements and roads have increased risk of cracking. Reduced capacity of overheated power lines. Building overheating (due to increased fabric efficiency and incorrect implementation). Solar PV modules work slightly less efficiently at high temperatures and some studies6 have shown that high temperatures can age the panels more quickly. Decreased labour productivity.
Relative Humidity	Increase will affect condensation and associated damage or mould growth.	Timber framed construction. Internal walls, finishes and stored items.
Precipitation	Increase and decrease will affect water tables; cleaning costs will be increased in winter, with associated redecoration requirements; durability and risk of water ingress will be affected by combination of precipitation increase and gales.	Increased damage to roofing and higher risk of failure, increased chances of flooding. Structure / cladding/roofing membranes and sealants have increased risk of cracking due to different moisture movements. Damage to foundations and basements. Delays in construction and increased costs. Increased risk of subsistence.
Gales	Increase will affect need for weather tightness, risk of water ingress, effectiveness of air conditioning, energy use, risk of roof failures.	Increased damage to roofing and higher risk of failure.
Radiation	Increase may affect need for solar glare control.	Window specification and glare control requirement.
Cloud	Increase/decrease in seasonal lighting needs.	Changes in lighting systems and glare control requirement.

14.108 The UK Climate Change Risk Assessment identifies flooding and high temperatures as posing the greatest risks to the built environment. In the interest of completeness, and to account for potential irregular, adverse extreme weather, this section will also cover reducing risk to snow and ice, however projections suggest that overall these will become a decreasing risk with climate change.

Temperature

14.109 The UK Climate Change Risk Assessment 2017 states that buildings will need to be carefully designed to reduce heat loss during winter, reduce solar gain during summer and maximise the effectiveness of natural ventilation in buildings. The Carbon Trust[7] found that energy costs and associated CO_2 emissions are 30% higher in an air-conditioned building compared to natural ventilation, on top of increased capital and maintenance costs. Methods for reducing energy consumption of buildings for cooling and ventilation include:

- Using low energy lighting;
- Installing energy efficient appliances;
- Night cooling[8];
- Stack ventilation and wind scoops;
- Fan-coil units;
- Window shading or heat reflective glass;
- 'Dead band' control[9]; and,
- Smart meters.

14.110 Design measures can be incorporated into the wider development to reduce the urban heat island effect which can include planting deciduous trees and increasing the availability of green and blue spaces. The use of water features and vegetation to improve landscaping can provide a cooling effect as well as providing insects, invertebrates, small mammals and humans shading from the elements.

14.111 It is also essential to limit the heat release rate of materials used in linings, materials and finishes by strict compliance with national fire regulations. Consideration should be given to careful planning of open-plan living and work spaces, that reduce compartmentalisation, and have the potential to increase risk to fire. The increasing number of heatwaves could result in periods of dry environments, where the fire risk will increase significantly. The use of fire and smoke alarms in all properties is mandatory and the implementation of basic fire preparation and response plans can significantly reduce the risks to human life.

[8] An established technique where cool night air is passed through the building to remove heat accumulated in the day. This could be natural or fan-assisted. When building fabric is cooled, it will absorb more heat the next day, reducing internal temperatures.

[9] When mechanical systems for cooling or heating are required, using dead band control can be effective in reducing energy consumption and costs. This creates a gap between temperature cut ins, preventing heat and cooling operating simultaneously.

Precipitation

14.112 Following the IPCC Fifth Assessment on Climate Change Report series, key findings for the builder sector were summarised into a briefing called Climate Change: Implications for Buildings[10]. It found that increased precipitation and weather extremes pose a direct threat to building construction through delays, changes to building seasons and the increased likelihood of rebuilding and repair work.

14.113 A Flood Risk Assessment for the proposed development has been undertaken (**Appendix 8.1**) taking into consideration climate change projections of increased rainfall and flooding. The conclusions of this are summarised below:

- The site lies within the level 2 SFRA,
- The site is situated entirely within Flood Zone 1 and is between a low and very low risk of experiencing flooding from groundwater, public sewers, reservoirs, rivers and sea and surface water.
- The post development surface water run-off discharge rate from the site catchments A and D will be restricted to 1 in 1 year Brownfield rates with a 50% betterment. Whilst catchments B and C will be restricted to greenfield runoff rates.
- The proposed surface water system has been designed to accommodate the critical 1 in 100 year plus 40% climate change events
- The strategy proposed is to incorporate source control measures including nature-based solutions such as raingardens and tree pits. These source control measures will discharge to a below ground piped network which will then discharge to a retention basin within the proposed park or other site level SUDs features.

Extreme Weather

14.114 Storm damage will typically involve the damage or removal of roof slates/tiles or potentially the whole roof structure. The National House Building Council (NHBC) Foundation recommends that the optimum roof angle is 30 ° to the horizontal to minimise the suction forces that will apply to the roof. At lower angles the suction forces will be greater and at higher angles the forces will tend to exert downward force on the roof. Eaves and roof structures that overhang external walls may be particularly susceptible to the effects of wind loading and sufficient consideration will be required to ensure that problems are avoided. Wind loading can also apply significant lateral forces to buildings and modelling to ensure that adequate bracing is in place to deal with these forces will be necessary.

14.115 The impact of the prevailing South Westerly wind may be mitigated through a chamfered design to aid structural performance.

14.116 Storms can potentially lead to rain penetration through external masonry walls, particularly where walls are single-skin (e.g. garages) or where cavities have been poorly constructed (e.g. with debris in the cavity).

14.117 Another side effect of increased storms and high winds may be loss of centralised power through powerline failure or damage, as well as power loss potentially arising from flooding or other climate related events. Power failure could represent a risk of major accident in several ways from downed cables igniting a fire to resident's health and well-being coming under threat from not having access to essential services. In order to minimise the risk of major accidents and retain resilience to climate change the proposed development should consider the need for provision for the loss of power distribution for periods of time.

14.118 Although projections suggest an overall decrease in cold spells and snow, it is still important to consider risk mitigation in the event of adverse extreme weather. The vulnerability of residents and users of the proposed development will be dependent upon a variety of factors, including age and physical health, however appropriate design measures can reduce the risk to human health and accident, such as:

- Sufficient insulation;
- Energy efficient buildings;
- Secure and reliable energy supply;
- Stress loading of roofs (snow bearing) – BS EN 1991-1-3:2003;
- Cover and/or pitch walkways and driveways to aid drainage and avoid puddling that can form ice;
- Ensure roof pitch is correct for water/snow shedding without avalanching;
- Design drainage away from buildings and employ roof overhangs to keep snow and water away from foundations; and,
- Use suitably textured materials on walkway surfaces, avoid steep gradients and provide railings and banisters to reduce risk of slipping and falling.

Limiting Impacts on Biodiversity

14.119 Impacts on biodiversity can include but are not limited to mortality, biome shifts, ecosystem change, water scarcity/flooding, pest exacerbation and ecosystem feedback capabilities, including carbon sequestration[xx].

14.120 In the establishment of landscapes and ecological habitats the proposed development will need to consider the climate resilience of enhancements that are used.

14.121 The key to maintaining these landscapes in changing climates is focusing on maintaining functioning ecosystems[11]. Ecosystem resilience can be defined as "*the properties that enable an ecosystem to absorb expected and unforeseen change yet retain its character and remain functional*". The important concepts are sustaining functional diversity, connectivity and upholding variety in ecological thresholds. This will ensure that built landscapes and existing habitats have the capability to continually offer shelter and forage in changing conditions.

14.122 Key aspects suggested for consideration when designing climate resilient landscaping are:

- Species selection: Drought tolerant species e.g. enzymic resilience to warmer temperatures;
- Sensitivity to watering e.g. induced root hypoxia and rot from oversaturation;
- Growth inhibition e.g. pollution tolerance;
- Wind tolerance e.g. strong, deep root structures;
- Year-round ecosystem services e.g. forage and shelter capability during different seasons to continually support ecology and human needs;
- Avoiding fragmentation of green spaces, landscapes and ecological habitats where possible; and
- Control use and ongoing spread of invasive and alien species that may impede native species ability to adapt or be in competition for resources during times of decreased availability e.g. as a response of extreme weather.

Limiting Impacts on Social Value, Waste Management and Travel Planning

14.123 Social value has many competing definitions, however, at the centre of most definitions is the value of maximising public benefit. As such, it is important to address the impact of the built environment on those who inhabit it [xii]. The potential risks of climate change from increased temperature and precipitation increase has been addressed above; the mitigation actions outlined will help to ensure public benefit. In addition, the design of the development close to accessible public transport routes, and with the provision of facilities for cyclists can act to promote sustainable transport of inhabitants. A Travel Plan has been produced for the proposed development which will accompany and support this application. It can found within Appendix 9.2.

14.124 Recycling has been encouraged through the ease of access of residents to recycling facilities: each shared tower has a Refuse chute with a tri-separator accessed from the shared corridor. This will encourage sustainable waste practices within the proposed development. This practice is not likely to be at risk from the impacts of climate change.

Conclusions

Assessment of Impacts

14.125 Both options assessed for the proposed development's relative emissions reductions over the 80-year operational lifetime are 48.01%, which would result in **positive, major beneficial** impacts.

14.126 This should not be interpreted that GHG emissions will have no effect. Instead, it signifies that the proposed development will emit significantly less operational CO_2e emissions than a development of the same size, with comparable facilities, constructed to standard Building Regulations.

14.127 When assessing the TER and DER for regulated residential emissions, a 20.6% improvement is targeted on 2013 Building Regulations. This far exceeds the 9% required within local policy and therefore shows compliance with MCC.

14.128 In addition to the significant emission reductions shown above, the development in its entirety, will be tackling the predicted GHG emissions by offsetting the total amount produced through obtaining all operational energy from a 100% renewable energy electricity provider; allowing for a carbon neutral classification.

Mitigation of Climate Change

14.129 The proposed development, if built to modelled assumptions, will have 17318.4 tCO_2e emissions, compared to a 'typical' development in a notional location, built to standard Building Regulations over an 80-year period. This is due to the significantly improved fabric efficiency and Solar PV.

Vulnerability and Risk Assessment

14.130 It will not be possible to eliminate every risk associated with climate change but through intelligent design, preparation and responsible construction, these risks will be minimised. Discussion and recommendations have detailed reducing these risks in key areas such as overheating, flooding and extreme weather, which has taken into consideration not only the health and safety of the users of the proposed development, but the resilience of the proposed development itself.

Figures

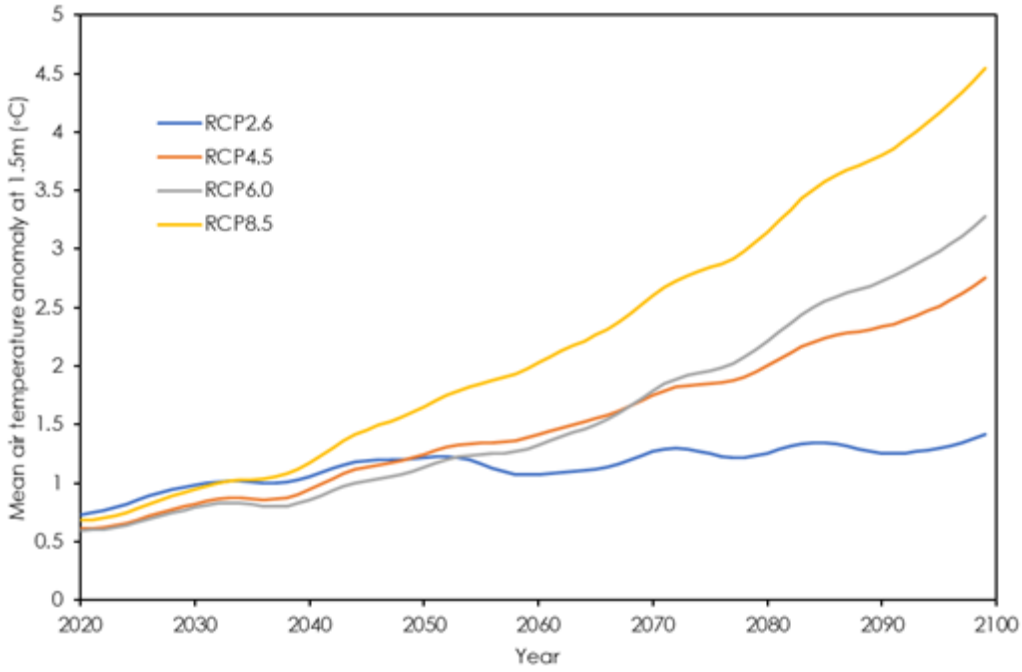


Figure 14.1: Annual average mean air temperature anomaly at 1.5m (◦C) (50th percentile) for years 2020 up to and including 2099.

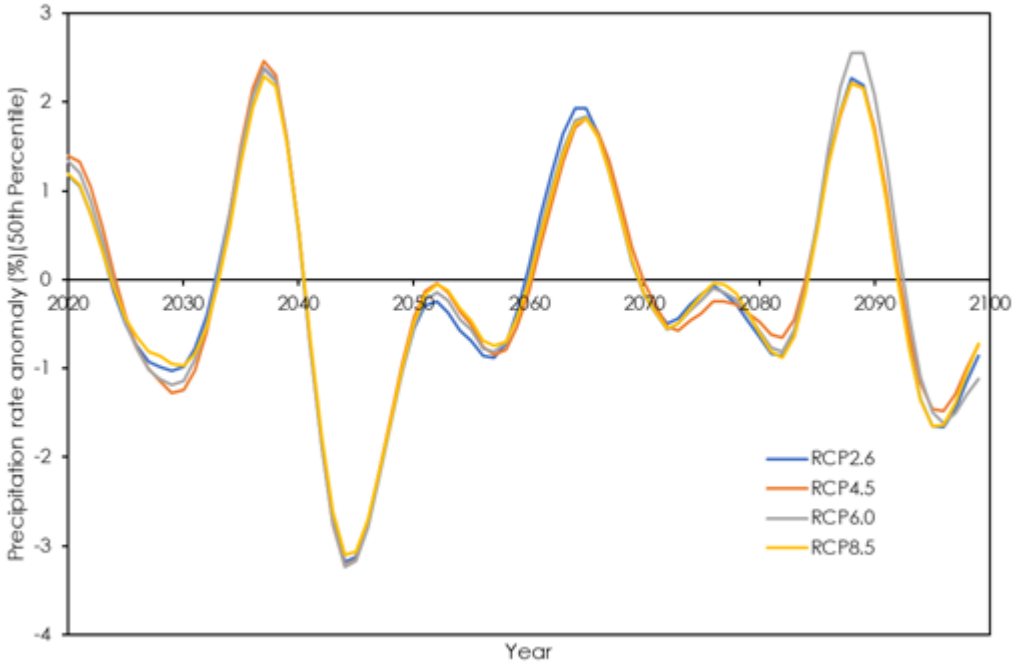


Figure 14.2: Annual average precipitation rate anomaly (%) (50th percentile) for years 2020 up to and including 2099

References

[i] HM Government, 2008. Climate Change Act 2008. HMSO, London.

[ii] HM Government (2017). UK Climate Change Risk Assessment 2017. HMSO, London.

[iii] European Commission, 2013. Staff Working Document (2013) 137 final 'Adapting infrastructure to climate change'. EC, Brussels.

[iv] National House Building Council Foundation (2007). Climate change and innovation in house building: designing out risk (NF3). NHBC Foundation, Buckinghamshire.

[v] Statutory Instrument 2017 No. 571 (2017). Town and Country Planning (Environmental Impact Assessment) Regulations 2017. HMSO, London.

[vi] Ministry of Housing, Communities and Local Government (2018). Approved Document L1A: conservation of fuel and power in new dwellings, 2013 edition with 2016 amendments.

[vii] Ministry of Housing, Communities and Local Government (2018). National Planning Policy Framework 2018. HMSO, London.

[viii] The Institute of Environmental Management & Assessment (IEMA) (2017). 'Environmental impact assessment guide to assessing greenhouse gas emissions and evaluating their significance'. IEMA, Lincoln.

[ix] The Institute of Environmental Management & Assessment (IEMA) (2013). 'Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment'

[x] European Commission (2013). 'Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment'.

[xi] British Standards Institute (2016). Publicly Available Specification (PAS) 2080:2016 'Carbon Management in Infrastructure'.

[xii] European Investment Bank (2014). 'EIB induced GHG footprint. The carbon footprint of projects financed by the bank. Methodologies for the assessment of Proposed Development GHG emissions and emissions variants'.

[xiii] Royal Institution of Chartered Surveyors (RICS) (2017). Whole life carbon assessment for the built environment.

[xiv] Bartok et al. (2016). Projected changes in surface solar radiation in CMIP5 global climate models and in EURO-CORDEX regional climate models for Europe. Climate Dynamics

[xv] Parding et al. (2016). Influence of Synoptic Weather Patterns on Solar Irradiance Variability in Northern Europe. American Meteorological Society 29.

[xvi] IPCC (2018). Special Report on Global Warming of 1.5°C (SR15). Summary for Policy Makers.

[xvii] Met Office (Undated). UK Climate: Observations, projections and Impacts. Met Office, Exeter

[xviii] Vautard et al. (2010). Northern Hemisphere atmospheric stilling partly attributed to an increase in surface roughness. Nat. Geosci., 3 and McVicar et al. 2012. Global review and synthesis of trends in observed terrestrial near-surface wind speed: Implications for evaporation, J. Hydrol. (within IPCC, 2014. Fifth Assessment Report: Chapter 2.)

15. Cumulative Effects

Introduction

15.1 This chapter provides an assessment of the potential cumulative effects of the proposed development in conjunction with effects arising from other developments in the surrounding area. It also provides an assessment of the potential combination of some or all of the effects identified in the EIA on a particular receptor.

15.2 The requirement for cumulative assessment is stated in the following legislation:

- Directive 85/337/EEC requires the assessment of 'the direct effects and any indirect, secondary, cumulative, short, medium and long term permanent or temporary, positive and negative effects of the project;
- Directive 97/11/EC states that criteria for assessment includes '*the cumulation with other projects*';
- The EIA Regulations 2017 state that, '*the characteristics of the development must be considered having regard, in particular to the cumulation with other existing and/or approved development*'; and
- Directive 2014/52/EU states that '*the description of the likely significant effects … should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the project*'.

Methodology

15.3 Cumulative effects come in two forms. The first relate to the impacts of the proposed development in conjunction with other developments in the area. These developments should be existing, consented or reasonably foreseeable in terms of delivery and should be located within a realistic geographical scope where environmental effects could combine to create a more significant effect on a particular sensitive receptor. These are hereafter referred to as cumulative effects.

15.4 The second type of cumulative effect is that of the combination of the various types of impacts from the proposed development. These are hereafter referred to as synergistic effects.

Cumulative Effects

15.5 As set out within Chapter 2, a cumulative site scoping exercise has been undertaken to identify any potential developments within the vicinity of the site which are likely to result in cumulative or synergistic effects. A planning history search has been undertaken for all planning applications submitted in the surrounding areas to the site which are either approved or awaiting decision.

15.6 Planning applications for single plots of residential development have been discounted from the assessment. Of the remaining applications, the large majority found during the search were not considered to result in significant cumulative environmental impacts when considered in combination with the proposed development.

15.7 The cumulative effects assessment has only considered existing, consented or reasonably foreseeable developments. For the purposes of the assessment, reasonably foreseeable means those developments that are currently known to the planning system or already within the consenting process (including those under construction; developments with planning permission not yet under construction; and submitted applications not yet determined). For an assessment to be meaningful it has to be based on evidence. Where there is insufficient evidence this will preclude a meaningful quantitative assessment, as it is not appropriate to make assumptions about the detail of future projects in such circumstances.

15.8 The cumulative sites proposed to be scoped-in to the EIA have been confirmed with the Local Planning Authority (LPA) through the formal scoping process.

15.9 Those developments to be considered in the assessment as agreed with MCC are set out in Table 15.1.

Table 15.1: Cumulative Sites

Site Ref.	Application No.	Proposal	Approx. Distance and Direction	Status
1	125596/FO/2019	Planning Application for housing-led mixed use redevelopment comprising: a maximum of 410 new dwellings (Class C3); and comprising Class A1 (retail), Class A3 (restaurant/cafe) Class B1 (business/office use) (maximum floorspace 744 sq.m GIA in total); recreation open space and landscaping; and associated access off Hulme Hall Lane, Varley Street and Iron Street, infrastructure provision and car parking	970m southeast	Approved 24th September 2020
2	114860/FO/2016	Erection of a part 6, part 10, part 15, part 24 storey building to form 415 residential apartments (Use Class C3a) together with commercial floor space (268 sqm) (Use Classes A1, A2, A3, A4, B1 and/or D2) with associated car parking, public realm, hard and soft landscaping, access from Dantzic Street and other associated works following demolition of existing buildings	1km southwest	Approved 24th October 2019
3	121401/FO/2018	Erection of 57 properties with a mix of two and three storey semi-detached / terraced properties and six apartments in one block with associated road access, parking and landscaping.	940m southeast	Approved 18th January 2019
4	123735/FO/2019	Erection of 13 residential properties with a mix of two and three storey semi-detached / terraced properties with associated road access, parking, landscaping and boundary treatment	1.4km south	Approved 8th November 2019
5	123887/FO/2019	Erection of 37 dwellinghouses with a mix of two and three storey semi-detached / terraced properties with associated road access, parking and landscaping	1.2km south	Approved 11th November 2019
6	124738/FO/2019	Erection of 10 dwellinghouses (Class C3) comprising a mix of two and three storey semi-detached / terraced properties with associated access, parking and	750m south	Approved 10th January 2020

Site Ref.	Application No.	Proposal	Approx. Distance and Direction	Status
		landscaping		
7	125927/FO/2020	Erection of 22, two and three storey residential dwellinghouses (C3a) with associated landscaping, car parking, boundary treatment and other associated works	690m southwest	Approved 7th April 2020
8	126467/FO/2020	Erection of 22 two and three storey dwellinghouses (Use Class C3a) with associated access, car parking, boundary treatment and landscaping	620m south	Approved 29th July 2020
9	n/a – Collyhurst South	Construction of 30 residential dwellings (Use Class C3)	360m south	n/a

15.10 The identified cumulative sites were reviewed by the Applicants' technical EIA team to consider if there is potential for cumulative effects in respect of each technical assessment that forms part of the EIA.

15.11 The assessment of the cumulative sites was based on information available on the planning portals. This comprised a review of the information contained within the planning application package for each identified site (i.e. the description of development, red line plans and any masterplans / parameter plans / relevant information available for that site).

15.12 The cumulative assessment identified the additional effects resulting from the proposed development during both the demolition and construction, and operational phase of the proposed and cumulative developments. This provides sufficient information for the identification of potential for cumulative effects for each technical assessment, thus ensuring that MCC can evaluate the impacts of the development in isolation and in conjunction with other developments in the area.

15.13 Cumulative effects can be generated at the construction stage if the sites are in close proximity and construction periods are likely to overlap. However, most construction projects employ regulatory controls and good practice to minimise impacts occurring outside the site boundary. It is assumed that standard best practice measures have been or will be employed on each cumulative development site.

15.14 The effects of cumulative operational impacts can be varied and will depend on the scale, nature and processes / activities of the proposed development, the location of sensitive receptors, the surrounding developments and the immediate environs. The cumulative assessment assumes that the mitigation measures proposed throughout this ES will be or have been implemented

15.15 This chapter sets out each technical discipline and identifies where the residual effects identified within each technical chapter have been altered by a cumulative development.

Cumulative Effects

Townscape and Visual

15.16 Each of the cumulative sites identified in Table 15.1 have been scope out of the cumulative assessment for townscape and visual effects as the scale of the proposed development and intervening distance means that **negligible** cumulative visual or townscape effects are anticipated.

Drainage and Flood Risk

15.17 Each of the cumulative developments have been scoped out of the flood risk and drainage cumulative assessment as all new developments will comply with appropriate policy with regards to flood risk and surface water management and all relevant approvals processes associated with discharge of foul water. As such the in-combination effects associated with flood risk and drainage would be **negligible**.

Transport and Access

Approach

15.18 No traffic data for the cumulative impacts of the construction phase has been assessed as this data was not available in the Transport Assessments (TAs) which accompanied the planning applications noted in Table 15.1. It is therefore not possible to accurately assess the likely construction cumulative impact. Qualitative comments have been included on the potential impacts, mitigation and residual impacts.

15.19 Qualitative comments have been included on the potential impacts on non-car modes of transport.

Potential Impacts

Demolition and Construction

15.20 There is potential for an increase in traffic if all the committed development sites start construction at a similar time. This has the potential to create a temporary **moderate adverse** impact if no mitigation measures are implemented.

15.21 There is also potential for pedestrian connections to be temporarily severed, for example through footway closures. This has the potential to create a temporary **moderate adverse** impact if no mitigation measures are implemented.

Completed Development

15.22 Once all committed developments are operational, there is the potential for increase in vehicle movements at junctions located in the Northern Gateway SRF.

15.23 There will be an increase in the number of pedestrians and cyclists in the area when all the committed developments are completed. This has the potential to generate a **minor beneficial** impact due to the perception of increased safety.

Mitigation Measures

Demolition and Construction

15.24 Construction vehicle movements and footway closures will be agreed with MCC as each site comes forward for development and this process will be managed by MCC accordingly.

15.25 It is anticipated that each site will implement its own CEMP to help mitigate impacts.

Completed Development

15.26 As individual developments come forward there will be an overall improvement to the public realm and footway frontages surrounding them, increasing pedestrian connectivity, amenity, and safety.

Residual Impact

15.27 There are likely to be residual impacts following the implementation of the mitigation measures. The increase in vehicle trips generated by the committed developments may impact severance, driver delay, pedestrian amenity, accidents and safety and hazardous loads. These impacts are likely to be **negligible** which is **not significant**. There is likely to be a **moderate beneficial** residual impact on pedestrian amenity, safety and connectivity resulting from the improvements to the public realm, the increase in the numbers of pedestrians and cyclists in the area which is **significant**.

Air Quality and Dust

Approach

15.28 Consideration was given to the potential for cumulative impacts to occur as a result of in-combination effects associated with the proposed development and other committed developments in the vicinity of the study area. The potential for cumulative impacts to occur has been considered for both the construction phase and the operational phase.

Demolition and Construction

15.29 Should the construction phases of the developments outline within Table 15.1 and the proposed development overlap, it is possible that cumulative dust impacts may occur. However, as previously outlined, any fugitive dust emissions generated by the proposals will be controlled through the outlined mitigation measures. A similar level of control would also be expected for any other scheme. Therefore, residual cumulative impacts are predicted to be **not significant** in accordance with the EIA Regulations (UK Government, 2017).

Completed Development

15.30 Consultation with Civic Engineers, the Transport Consultants for the proposed development, indicated that committed developments had been scoped out of the assessment due to the relatively low number of vehicle movements generated by each identified site. It is anticipated that these movements will disperse quickly on the local highway network and are unlikely to have a significant impact on baseline traffic flows within the vicinity of the proposed development.

15.31 Although specific proposals were not considered, the traffic data utilised within the assessment included predicted growth up to 2023. This is considered to provide a reasonable representation of potential increases in traffic flows as a result of local committed developments, as well as schemes throughout the wider area. As such, the presented results consider cumulative impacts from road vehicle exhaust emissions. Residual cumulative impacts are therefore predicted to be **not significant** in accordance with the EIA Regulations (UK Government, 2017).

Noise and Vibration

15.32 A review of the sites identified in Table 15.1 indicates that none of the sites are within the vicinity of the proposed development (this is typically considered to be up to 200 m from the site). Therefore, cumulative effects are unlikely as any works associated with the cumulative schemes would not affect the predictions presented within the noise and vibration chapter (Chapter 11 of this ES). The additional noise from these works will be minimal and will not contribute to those assessed at the receptors.

Socioeconomics

Approach

15.33 Sites which have been scoped into the socioeconomic cumulative assessment include Site Ref. 1, 2, and 9 in Table 15.1 as the scale of these development has the potential to result in cumulative socioeconomic effects.

15.34 Given the limited information available on the socioeconomic effects within the documents which accompany the planning applications for the cumulative sites, the assessment has been based on assumptions and drew on what information is available.

15.35 Where there is insufficient information, the significance of the cumulative effects can only be determined as being of 'greater' or 'lesser' that than assessed for the proposed development.

Potential Impacts

Demolition and Construction

Direct, Indirect and Induced Job Creation

15.36 With respect to direct, indirect and induced job creation, the demolition and construction stage is anticipated to generate likely effects of **moderate beneficial** significance at the district level (Manchester) and **negligible** effects at the sub-regional level (Greater Manchester). It is assumed that there will be further direct, indirect and induced employment opportunities associated with all of the cumulative sites in conjunction with the proposed development, assuming that the demolition and construction stages are concurrent. Therefore, the likely cumulative effects in relation to direct, indirect and induced job creation is considered to be of **greater beneficial significance** than that concluded for the proposed development (i.e. **moderate beneficial** significance at the district level and **negligible** at the sub-regional level).

Expenditure from the Temporary Construction Workforce

15.37 With respect to expenditure from the temporary construction workforce during the demolition and construction stage, there is anticipated to be likely effects of **moderate beneficial** significance at the district level (Manchester) and **negligible** effects at the sub-regional level (Greater Manchester). It is assumed that there will be further expenditure from the temporary construction workforce associated with all of the cumulative sites in conjunction with the proposed development, assuming that the demolition and construction stages are concurrent. Therefore, the likely cumulative effects in relation to expenditure from the temporary construction workforce is considered to be of **greater beneficial significance** than that concluded for the proposed development (i.e. **moderate beneficial** significance at the district level and **negligible** at the sub-regional level).

Completed Development

Direct, Indirect and Induced Job Creation

15.38 cumulative sites 1 and 2 are anticipated to have significant cumulative effects in conjunction with the completed development assuming that the operational stages are concurrent. Cumulative Site 3 is not anticipated to generate operational employment opportunities due to its predominantly residential nature and are therefore not considered to have cumulative effects with the proposed development in terms of direct, indirect and induced job creation once operational.

15.39 As reported above, the completed development is anticipated to generate effects of **negligible** significance on economic receptors (i.e. individuals of working age) at the district (Manchester) and sub-regional (Greater Manchester) levels. It is assumed that there will be further direct, indirect and induced employment opportunities associated with the relevant cumulative sites. Therefore, the likely cumulative effects in relation to direct, indirect and induced job creation are considered to be of greater beneficial significance than that concluded for the completed development (i.e. **negligible** significance at the district and sub-regional levels).

Increase in Household Spend

15.40 All of the cumulative sites are anticipated to have **significant** cumulative effects in conjunction with the completed development assuming that the operational stages are concurrent. The cumulative sites include the provision of residential units which would increase the residential population within Manchester and Greater Manchester.

15.41 The cumulative sites would collectively provide 855 residential units. Combining this with the 244 residential units to be delivered by the proposed development results in 1,099 residential units. Based on the same methodology outlined earlier in this chapter, the net additional household expenditure generated by the new residential population at the proposed development and the cumulative sites would be around £20,788,156.5 per annum. Therefore, overall the likely residual cumulative effects of an increase in household spending are considered to be **major beneficial** in the long-term at the district and sub-regional levels.

Increase in Housing Stock

15.42 All cumulative sites are anticipated to have **significant** cumulative effects in conjunction with the proposed development assuming that the operational stages are concurrent.

15.43 The proposed development together with the cumulative sites would contribute to MCC's and Greater Manchester's housing targets, by providing 1,099 new residential units.

15.44 Together with the proposed development, the cumulative sites would represent 10.4% of the annual housing target identified in the GMSF. In the context of the MCC local plan requirements, the cumulative sites would

result in the delivery of up to 1,099 new residential units, equating to 1.83% of the housing requirement over the Local Plan period (2009-2027).

15.45 Therefore, the likely cumulative effects in relation to increase in housing stock are considered to be **moderate beneficial** significance in the long-term at the district and sub-regional levels.

Change in Local Service Demand

Education

15.46 All cumulative sites are anticipated to have significant cumulative effects in conjunction with the proposed development assuming that the operational stages are concurrent.

15.47 The cumulative sites together with the proposed development would result in the introduction of additional residents, which cumulatively could increase the pressure on local primary and secondary schools to varying degrees.

15.48 As set out earlier in this chapter, is has been proven that the proposed development (considered in isolation) would not lead to any significant pressure upon primary or secondary school capacity. With reference to the other cumulative sites, it is assumed that the needs for primary and secondary school places have been (or would be) considered on a case by case basis by MCC during the determination of each of the cumulative sites. As such, it is reasonable to assume that any necessary contributions to offset any significant adverse effects would be secured via a Section 106 contribution.

15.49 In view of the above, the likely residual cumulative effect on the capacity of primary and secondary schools is considered to be **negligible**.

Healthcare

15.50 As reported earlier in this chapter, the proposed development (in isolation) is expected to result in a negligible effect on healthcare facilities.

15.51 All cumulative sites are anticipated to have significant cumulative effects in conjunction with the proposed development assuming that the operational stages are concurrent. This is because all of the cumulative sites would increase the residential population and would therefore have the potential to increase the pressure on healthcare services to varying degrees.

15.52 These issues would be considered by MCC in the determination of the planning application in the case of each Cumulative Site with any necessary contributions secured via a Section 106 obligation. It is therefore assumed that, given this mechanism for securing any necessary financial contributions, payments would be paid in mitigation against any adverse effects on healthcare services.

15.53 Taking the above measures into account, it was considered that the likely residual cumulative effects on healthcare services would be **negligible**.

Community Facilities

15.54 All cumulative sites are anticipated to have significant cumulative effects in conjunction with the proposed development assuming that the operational stages are concurrent. This is because all of the cumulative sites would increase the residential population and would therefore have the potential to increase the pressure on community facilities to varying degrees.

15.55 As noted earlier in this chapter, there are a variety of community facilities within the vicinity of the Site which it is assumed have capacity to accommodate the additional population generated by the completed development. Therefore, the effects of the proposed development (in isolation) are considered to be **negligible**.

15.56 A number of the cumulative sites provide community facilities / resources. Where not provided, it is assumed that there is sufficient capacity within existing facilities or that any necessary financial contributions would have been adequately considered and secured at the time when the cumulative sites were consented by MCC.

15.57 Therefore, the likely residual cumulative effect on community facilities from the proposed development and all Cumulative Schemes would be considered to be **negligible**.

Change in Demand for Open Space

15.58 All cumulative sites are anticipated to have significant cumulative effects in conjunction with the proposed development assuming that the operational stages are concurrent. This is because all of the cumulative sites would increase the residential population and would therefore have the potential to increase the pressure on open spaces to varying degrees.

15.59 As set out earlier in this chapter, is has been proven that the proposed development (considered in isolation) would not lead to any significant pressure upon open spaces.

15.60 Open space for the cumulative sites typically comprises a balance between landscaped private and public amenity areas. Where public space is provided, this would be a resource for the community as well as future occupiers of these Cumulative Schemes.

15.61 It would be assumed that mechanisms for securing any necessary financial contributions, issues relating to demand for open and recreational space would have been adequately considered at the time when the Cumulative Schemes were consented by MCC.

15.62 Therefore, the likely residual cumulative effect on open space from the proposed development and all cumulative sites would be considered to be **negligible**.

Mitigation Measures

Demolition and Construction

15.63 No additional mitigation measures are considered to be required during the demolition and construction phase of the proposed development.

Completed Development

15.64 No additional mitigation measures are considered to be as required during the operational phase of the proposed development.

Residual Impact

15.65 The residual cumulative impacts would be the same as the pre-mitigation effects.

Health

Approach

15.66 All the relevant technical impact assessments scoped out the 9 other developments with regard to cumulative effects and therefore, the relevant aspects for health and wellbeing are also scoped out. Only the impact assessment on socioeconomics scoped in potential cumulative effects for 3 of the developments (Site Ref. 1, 2, and 9).

15.67 Given the limited information available on the socioeconomic effects within the documents which accompany the planning applications for the cumulative sites, the assessment has been based on assumptions and drew on what information is available. Where there is insufficient information, the significance of the cumulative effects can only be determined as being of 'greater' or 'lesser' that than assessed for the proposed development.

Demolition and Construction

15.68 With regard to job creation and workers spend, the likely cumulative effects are considered to be of **greater beneficial** significance than that concluded for the proposed development (i.e. **moderate beneficial** significance at the district level which is **significant** and **negligible** at the sub-regional level which is **not significant**).

The Completed and Operational Development

15.69 Site Refs. 1 and 2 in Table 15.1 are anticipated to have significant cumulative effects for job creation in conjunction with the completed development assuming that the operational stages are concurrent. Therefore, the likely cumulative effects in relation to direct, indirect, and induced job creation are considered to be of greater beneficial significance than that concluded for the completed development (i.e. **negligible** significance at the district level and sub-regional levels which is **not significant**). As regards increase in household spends, all the cumulative sites are anticipated to have significant cumulative effects in conjunction with the completed development assuming that the operational stages are concurrent with effects **major beneficial** in the long-term at the district and sub-regional levels.

15.70 All cumulative sites are anticipated to have significant cumulative effects in conjunction with the proposed development assuming that the operational stages are concurrent. Therefore, the likely cumulative effects in relation to increase in housing stock are considered to be **moderate beneficial** significance in the long-term at the district and sub-regional levels which is **significant**.

15.71 All cumulative sites are anticipated to have significant cumulative effects on healthcare, community, and open/green space facilities in conjunction with the proposed development assuming that the operational stages are concurrent. However, the likely residual cumulative effects on schools and healthcare facilities, and open space would be **negligible** which is **not significant**.

15.72 Overall, with regard to health and wellbeing, cumulative effects are likely to be **major beneficial** for housing which is **significant** and **minor beneficial** for employment/economy which is **not significant**. The cumulative effects of improved landscaping will contribute to an improved local environment with benefits for wellbeing of residents and visitors.

15.73 In addition, once all the committed development sites are operational, there are likely to be residual cumulative impacts following the implementation of mitigation measures. The increase in vehicle trips generated by the committed developments may impact severance, driver delay, pedestrian amenity, accidents and safety and hazardous loads. These impacts are likely to be **negligible** which is **not significant**. There is likely to be a **moderate beneficial** residual impact which is **significant** on pedestrian amenity, safety and connectivity resulting from the improvements to the public realm, the increase in the numbers of pedestrians and cyclists in the area.

Climate Change

15.74 All sites noted in Table 15.1 have been scoped out of the climate change cumulative effects assessment as the distance of the sites to the proposed development means that any shared environmental benefits are limited, as such the cumulative effects would be **negligible**.

Synergistic Effects

15.75 The EIA has taken into consideration synergistic effects on identified receptors as a consequence of collective actions (refer to Chapters 7-14). Constraints and identified sensitive receptors have been considered in detail throughout the proposed development's design evolution, including the consideration of proposed site preparation and construction techniques. The aim of this process has been to address the potential for significant adverse impacts and ultimately to achieve no significant residual effects in isolation or in-combination (i.e. synergistic effects). The measures identified to address the potential for significant effects have, for the most part, been designed-in to the proposed development and considered in the EIA as embedded mitigation. Any measure that is not specifically designed-in feature of the proposed development is described as an additional mitigation measure in the relevant technical chapter and in Chapter 16: Summary of Mitigation and Residual Effects. These are also of relevance when considering synergistic effects. A summary of how these are applicable to certain actions is outlined below. Key considerations in terms of the in-combination effects relating to these measures include:

- Site ground and enabling works. This has been considered throughout the ES to assess impacts on water quality, nuisance activities such as noise, dust and emissions, and the effect on human health and wellbeing.
- Construction related issues and uncertainty during planning stages is likely to have synergetic effects on existing populations, relating to stress and uncertainty. These will be mitigated through measures implemented in the CEMP.

Conclusion

15.76 Review of MCC's planning portal has confirmed that there are developments which have the potential to interact with the proposed development and generate cumulative effects. Therefore, a cumulative assessment has been undertaken. The results of which have identified that the development is unlikely to give rise to significant cumulative construction or operational effects with the exception of Socioeconomics which will see a **significant beneficial** impact as a result of increased housing numbers. Consideration has also been given to synergistic effects of the proposals which has identified a number of effects to those receptors in close proximity during the construction period. However, these are predicted to occur on occasional basis only, are temporary, short-term and localised.

16. Summary of Mitigation and Residual Effects

Introduction

16.1 The EIA and the design evolution have been an iterative process therefore many measures to mitigate potential adverse environmental effects have been incorporated into the design of the proposed development in order to avoid, reduce or offset negative changes. These measures are 'embedded mitigation' and are presented in Chapter 5: Proposed Development. They have been accounted for in each of the technical assessments, where relevant (see Chapters 7-14).

16.2 The residual effects of the proposed development have been assessed as part of the EIA and can be described as the effects which remain after the implementation of the embedded and any additional proposed mitigation measures. The residual effects have been identified for each category in the preceding technical chapters (Chapters 7-14) and are summarised in Table 16.1. It is expected that the appropriate mitigation measures will be secured through appropriately worded planning conditions. Reference should be made to each technical chapter for the definition of the significance of the effect stated.

16.3 Following the table is a discussion of the residual effects and a conclusion.

Table 16.1: Summary of Mitigation and Residual Effects

Category	Stage of Development	Description of Potential Effects Including Significance	Mitigation Measures	Residual Effect Including Significance
Townscape ad Visual	Construction	**Visual**		
		Viewpoint 1 Collyhurst Park resulting in **Major-moderate adverse** effects which is **significant**	CEMP best practice	**Major-moderate adverse** which is **significant**
		Viewpoint 2 Fitzgeorge Street – Sand Hills Park resulting in **Major-moderate adverse / Moderate minor adverse** effects which is **significant**	CEMP best practice	**Major-moderate adverse / Moderate minor adverse** which is **significant**
		Viewpoint 3 Dalbury Drive resulting in **Moderate-minor adverse / Minor adverse** effects which is **not significant**	CEMP best practice	**Moderate-minor adverse / Minor adverse** which is **not significant**
		Viewpoint 4 Rochdale Road at Glendower Drive resulting in **Major adverse, Major-moderate adverse / Moderate-minor adverse** effects	CEMP best practice	**Major adverse / Major-moderate adverse / Moderate-minor adverse** which is **significant**

Category	Stage of Development	Description of Potential Effects Including Significance	Mitigation Measures	Residual Effect Including Significance
		which is **significant**		
		Viewpoint 5 Rochdale Road at Park View resulting in **Moderate-minor adverse / Minor adverse** effects which is **not significant**	CEMP best practice	**Moderate-minor adverse / Minor adverse** which is **not significant**
		Viewpoint 6 Monsall Street, Monsall Metrolink Station resulting in **Moderate-minor adverse / Minor adverse** effects which is **not significant**	CEMP best practice	**Moderate-minor adverse / Minor adverse** which is **not significant**
		Viewpoint 7 Queens Road resulting in **Moderate-minor adverse / Minor adverse** effects which is **not significant**	CEMP best practice	**Moderate-minor adverse / Minor adverse** which is **not significant**
		Viewpoint 8 Rochdale Road at Roach Court resulting in **Moderate-minor adverse / Minor adverse** effects which	CEMP best practice	**Moderate-minor adverse / Minor adverse** which is **not significant**

Category	Stage of Development	Description of Potential Effects Including Significance	Mitigation Measures	Residual Effect Including Significance
		is **not significant**		
		Viewpoint 9 Queens Park resulting in **Negligible** effects which is **not significant**	none	**Negligible** which is **not significant**
		Viewpoint 10 Manchester General Cemetery resulting in **Negligible** effects which is **not significant**	none	**Negligible** which is **not significant**
		Viewpoint 11 Moston Vale resulting in **Negligible** effects which is **not significant**	none	**Negligible** which is **not significant**
		Townscape		
		Loss of existing townscape features resulting in **Minor neutral** effects which is **not significant**	None	**Minor neutral** which is **not significant**
		Loss of existing trees resulting in	None	**Moderate-minor adverse** which is **not**

Category	Stage of Development	Description of Potential Effects Including Significance	Mitigation Measures	Residual Effect Including Significance
		Moderate-minor adverse effects which is **not significant**		**significant**
		Reduction in townscape quality due to the presence of construction traffic, plant and equipment resulting in **Minor neutral** effects which is **not significant**	CEMP and best practice	**Minor neutral** which is **not significant**
		The presence of temporary site cabins, fencing and illumination resulting in **Moderate-minor neutral** effects which is **not significant**	CEMP and best practice	**Moderate-minor neutral** which is **not significant**
	Completed Development	**Visual**		
		Viewpoint 1 Collyhurst Park resulting in **Major-moderate beneficial** effects which is **significant**	LMP	**Major-moderate beneficial** which is **significant**
		Viewpoint 2 Fitzgeorge Street – Sand Hills Park resulting in **Major beneficial/ Major-moderate beneficial/**	LMP	**Major beneficial/ Major-moderate beneficial/ Moderate minor beneficial**

Category	Stage of Development	Description of Potential Effects Including Significance	Mitigation Measures	Residual Effect Including Significance
		Moderate minor beneficial effects which is **significant**		which is **significant**
		Viewpoint 3 Dalbury Drive resulting in **Moderate-minor neutral/ Minor neutral** effects which is **not significant**	LMP	**Moderate-minor neutral/ Minor neutral** which is **not significant**
		Viewpoint 4 Rochdale Road at Glendower Drive resulting in **Major-moderate neutral/ Moderate-minor neutral/ Minor neutral** effects which is **significant**	LMP	**Major-moderate neutral/ Moderate-minor neutral/ Minor neutral** which is **significant**
		Viewpoint 5 Rochdale Road at Park View resulting in **Moderate-minor neutral/ Minor neutral** effects which is **not significant**	LMP	**Moderate-minor neutral/ Minor neutral** which is **not significant**
		Viewpoint 6 Monsall Street, Monsall Metrolink Station resulting in **Moderate-minor beneficial/ Minor beneficial** effects which is **not**	LMP	**Moderate-minor beneficial/ Minor beneficial** which is **not significant**

Category	Stage of Development	Description of Potential Effects Including Significance	Mitigation Measures	Residual Effect Including Significance
		significant		
		Viewpoint 7 Queens Road resulting in **Negligible** effects which is **not significant**	None	**Negligible** which is **not significant**
		Viewpoint 8 Rochdale Road at Roach Court resulting **in Moderate-minor neutral/ Minor neutral** effects which is **not significant**	LMP	**Moderate-minor neutral/ Minor neutral** which is **not significant**
		Viewpoint 9 Queens Park resulting in **Negligible** effects which is **not significant**	None	**Negligible** which is **not significant**
		Viewpoint 10 Manchester General Cemetery resulting in **Negligible** effects which is **not significant**	None	**Negligible** which is **not significant**
		Viewpoint 11 Moston Vale resulting in **Negligible** effects which is **not**	None	**Negligible** which is **not significant**

Category	Stage of Development	Description of Potential Effects Including Significance	Mitigation Measures	Residual Effect Including Significance
		significant		
		Townscape		
		NCR 60 resulting in **Minor beneficial** effects which is **not significant**	LMP	**Minor beneficial** which is **not significant**
		Brierley Statue (Grade II Listed building) resulting in **Negligible** effects which is **not significant**	None	**Negligible** which is **not significant**
		Queens Park (Grade II Listed Registered Park and Garden) resulting in **Moderate-minor beneficial** effects which is **not significant**	LMP	**Moderate-minor beneficial** which is **not significant**
		Manchester General Cemetery resulting in **Negligible** effects which is **not significant**	None	**Negligible** which is **not significant**
		NCA 55 – Manchester Conurbation	None	**Negligible** which is **not significant**

Category	Stage of Development	Description of Potential Effects Including Significance	Mitigation Measures	Residual Effect Including Significance
		resulting in **Negligible** effects which is **not significant**		
		GMUHLCA – Local Character areas resulting in **Moderate-minor beneficial** effects which is **not significant**	LMP	**Moderate-minor beneficial** which is **not significant**
Flood Risk and Drainage	Demolition and Construction	Pollution of groundwater or of the Moss Brook resultant from construction activities resulting in **Minor adverse** effects in the short term in the local area which is **significant**	Mitigation measures including the production of a CEMP and adoption of best practice	**Negligible** which is **not significant**
	Completed Development	Additional wastewater discharging to the local infrastructure resulting in **Minor adverse** effects which is **not significant**	No mitigation measures are proposed	**Minor adverse** which is **not significant**
Transport and	Demolition and	Severance – **Negligible** which is **not**	Production of CEMP	**Negligible** which is **not significant**

Category	Stage of Development	Description of Potential Effects Including Significance	Mitigation Measures	Residual Effect Including Significance
Access	Construction	**significant**		
		Driver Stress – **Negligible** which is **not significant**		**Negligible** which is **not significant**
		Pedestrian Delay – **Negligible** which is **not significant**		**Negligible** which is **not significant**
		Pedestrian Amenity – **Negligible** which is **not significant**		**Negligible** which is **not significant**
		Accidents and Safety – **Negligible** which is **not significant**		**Negligible** which is **not significant**
		Hazardous Loads – **Negligible** which is **not significant**		**Negligible** which is **not significant**
	Completed Development	Severance – **Negligible** which is **not significant**	None required	**Negligible** which is **not significant**

Category	Stage of Development	Description of Potential Effects Including Significance	Mitigation Measures	Residual Effect Including Significance
		Driver Stress – **Negligible** which is **not significant**		**Negligible** which is **not significant**
		Pedestrian Delay – **Negligible** which is **not significant**		**Negligible** which is **not significant**
		Pedestrian Amenity – **Negligible** which is **not significant**		**Negligible** which is **not significant**
		Accidents and Safety – **Negligible** which is **not significant**		**Negligible** which is **not significant**
		Hazardous Loads – **Negligible** which is **not significant**		**Negligible** which is **not significant**
Air Quality and Dust	Demolition and Construction	Fugitive dust emissions from demolition resulting in **Moderate adverse** effects which is **significant**	Measures identified in Table 10.37 in Chapter 10: Air Quality which will be implemented through a CEMP	**Negligible** which is **not significant**
		Fugitive dust emissions from earthworks resulting in **Major adverse**		**Negligible** which is **not significant**

Category	Stage of Development	Description of Potential Effects Including Significance	Mitigation Measures	Residual Effect Including Significance
		effects which is **significant**		
		Fugitive dust emissions from construction resulting in **Moderate adverse** effects which is **significant**		**Negligible** which is **not significant**
		Fugitive dust emissions from trackout resulting in **Minor adverse** effects which is **not significant**		**Negligible** which is **not significant**
	Completed Development	Road traffic vehicles exhaust emissions associated with vehicles travelling to and from the site resulting in **negligible** effects which is **not significant**	None required	**Negligible** which is **not significant**
Noise and Vibration	Demolition and Construction	Enabling works effects on: NSP3 - Residential dwellings along Rochdale Road NSP4 - Church of the Saviour church and school	None	**Negligible** which is **not significant**

Category	Stage of Development	Description of Potential Effects Including Significance	Mitigation Measures	Residual Effect Including Significance
		Negligible which is **not significant**		
		Enabling works effects on: NSP1 - Residential dwellings along Thornton Street North NSP2 - Residential dwellings along Stretton Close **Minor adverse** which is **not significant**	None	**Minor adverse** which is **not significant**
		Enabling works effects on: NSP5 - Residential dwellings along Thornton Street North **Moderate adverse** which is **significant**	None	**Moderate adverse** which is **significant**
		Demolition works effects on: NSP2 - Residential dwellings along Stretton Close NSP3 - Residential dwellings along Rochdale Road	None	**Negligible** which is **not significant**

Category	Stage of Development	Description of Potential Effects Including Significance	Mitigation Measures	Residual Effect Including Significance
		NSP4 - Church of the Saviour church and school **Negligible** which is **not significant**		
		Demolition works effects on: NSP1 - Residential dwellings along Thornton Street North **Minor adverse** which is **not significant**	None	**Minor adverse** which is **not significant**
		Sub-structure works effects on: NSP3 - Residential dwellings along Rochdale Road NSP4 - Church of the Saviour church and school **Negligible** which is **not significant**	None	**Negligible** which is **not significant**
		Sub-structure works effects on: NSP1 - Residential dwellings along Thornton	None	**Minor adverse** which is **not significant**

Category	Stage of Development	Description of Potential Effects Including Significance	Mitigation Measures	Residual Effect Including Significance
		Street North NSP2 - Residential dwellings along Stretton Close **Minor adverse** which is **not significant**		
		Sub-structure works effects on: NSP5 - Residential dwellings along Thornton Street North **Moderate adverse** which is **significant**	None	**Moderate adverse** which is **significant**
		Construction works effects on: NSP3 - Residential dwellings along Rochdale Road NSP4 - Church of the Saviour church and school **Negligible** which is **not significant**	None	**Negligible** which is **not significant**
		Construction works effects on: NSP1 - Residential dwellings along Thornton Street North NSP2 - Residential dwellings along Stretton	None	**Minor adverse** which is **not significant**

Category	Stage of Development	Description of Potential Effects Including Significance	Mitigation Measures	Residual Effect Including Significance
		Close **Minor adverse** which is **not significant**		
		Construction works effects on: NSP5 - Residential dwellings along Thornton Street North **Moderate adverse** which is **significant**	None	**Moderate adverse** which is **significant**
		Construction traffic effects on: All receptors **Negligible** which is **not significant**	None	**Negligible** which is **not significant**
		Construction traffic effects on: All receptors **Negligible** which is **not significant**	None	**Negligible** which is **not significant**

Category	Stage of Development	Description of Potential Effects Including Significance	Mitigation Measures	Residual Effect Including Significance
	Completed Development	Entertainment noise from commercial unit resulting in **Negligible** effects which is **not significant**	None	**Negligible** which is **not significant**
		Traffic noise level increases resulting in **Negligible** effects which is **not significant**	None	**Negligible** which is **not significant**
		Building services plant noise resulting in **Negligible** effects which is **not significant**	None	**Negligible** which is **not significant**
Socioeconomics	Demolition and Construction	Direct, indirect and induced job creation **Moderate beneficial** at the district level which is **significant** **Negligible** at the sub-regional level which is **not significant**	Local Employment Scheme	**Moderate beneficial** at the district level which is **significant** **Negligible** at the sub-regional level which is **not significant**
		Expenditure from the temporary	None	**Moderate beneficial** at the district level

Category	Stage of Development	Description of Potential Effects Including Significance	Mitigation Measures	Residual Effect Including Significance
		construction workforce **Moderate beneficial** at the district level which is **significant** **Negligible** at the sub-regional level which is **not significant**		which is **significant** **Negligible** at the sub-regional level which is **not significant**
	Completed Development	Direct, indirect and induced job creation	None	**Negligible** at the district level which is **not significant** **Negligible** at the sub-regional level **not significant**
		Increase in household spend **Moderate beneficial** at the district level which is **significant** **Negligible** at the sub-regional level which is **not significant**	None	**Moderate beneficial** at the district level which is **significant** **Negligible** at the sub-regional level which is **not significant**
		Increase in housing stock **Moderate beneficial** at the district	None	**Moderate beneficial** at the district level which is **significant**

Category	Stage of Development	Description of Potential Effects Including Significance	Mitigation Measures	Residual Effect Including Significance
		level which is **significant** **Negligible** at the sub-regional level which is **not significant**		**Negligible** at the sub-regional level which is **not significant**
		Change in demand on social and community infrastructure: Education Primary school capacity: **Negligible** at the local level which is **not significant** Secondary school capacity: **Negligible** at the local level which is **not significant** Healthcare **Negligible** at the local level which is **not significant** Community Facilities **Negligible** at the local level which is **not significant**	None	Education Primary school capacity: **Negligible** at the local level which is **not significant** Secondary school capacity: **Negligible** at the local level which is **not significant** Healthcare **Negligible** at the local level which is **not significant** Community Facilities **Negligible** at the local level which is **not significant**

Category	Stage of Development	Description of Potential Effects Including Significance	Mitigation Measures	Residual Effect Including Significance
		Change in demand for open and recreational space **Minor beneficial** at the local level which is **not significant**	None	**Minor beneficial** at the local level which is **not significant**
Human Health	Demolition and Construction	Direct, indirect and induced job creation **Moderate beneficial** at the district level which is **significant** **Negligible** at the sub-regional level which is **not significant**	Local Employment Scheme.	**Moderate beneficial** at the district level which is **significant** **Negligible** at the sub-regional level which is **not significant**
		Expenditure from the temporary construction workforce **Moderate beneficial** at the district level which is **significant** **Negligible** at the sub-regional level which is **not significant**	None	**Moderate beneficial** at the district level which is **significant** **Negligible** at the sub-regional level which is **not significant**

Category	Stage of Development	Description of Potential Effects Including Significance	Mitigation Measures	Residual Effect Including Significance
		Increased visibility due to tree removal; presence of construction traffic, plant & machinery; site safety/security lighting resulting in **Moderate-minor adverse / minor adverse** effects which is **not significant**	CEMP best practice	**Moderate-minor adverse / minor adverse** which is **not significant**
		Introduction/removal of built fabric resulting in **Major-moderate neutral/ Moderate-minor neutral/ Minor neutral** effects which is **significant**	CEMP best practice	**Major-moderate neutral/ Moderate-minor neutral/ Minor neutral** which is **significant**
		Loss of existing townscape features; Reduction in townscape quality due to the presence of construction traffic, plant and equipment resulting in **Minor neutral** effects which is **not significant**	CEMP best practice	**Minor neutral** which is **not significant**
		Loss of existing trees resulting in **Moderate-minor adverse** effects which is **not significant**	None	**Moderate-minor adverse** which is **not significant**

Category	Stage of Development	Description of Potential Effects Including Significance	Mitigation Measures	Residual Effect Including Significance
		Presence of temporary site cabins, fencing and illumination resulting in **Moderate-minor neutral** effects which is **not significant**	CEMP best practice	**Moderate-minor neutral** which is **not significant**
		Pollution of groundwater or of the Moss Brook resulting in **Major-moderate adverse** effects which is **significant**	CEMP best practice	**Negligible** which is **not significant**
		Severance, driver stress, pedestrian delay & amenity, accidents & safety, hazardous loads resulting in **negligible** effects which is **not significant**	CEMP best practice	**Negligible** which is **not significant**
		Fugitive dust emissions resulting in: Demolition: **Moderate adverse** which is **significant** Earthworks: **Major adverse** which is	CEMP best practice	**Negligible** which is **not significant**

Category	Stage of Development	Description of Potential Effects Including Significance	Mitigation Measures	Residual Effect Including Significance
		significant Construction: **Moderate adverse** which is **significant** Trackout: **Minor adverse** which is **not significant**		
		Noise & vibration resulting in: Enabling: 4 locations **Minor-Negligible** – not significant; 1 location **moderate – significant** Demolition: all 5 locations **Minor-Negligible** – not significant Sub-structure: 4 locations **Minor-Negligible** – not significant; 1 location **moderate – significant** Construction**:** 4 locations **Minor-Negligible** – not significant; 1 location **moderate – significant** Traffic: **Negligible** - **not significant**	CEMP best practice	Enabling: 4 locations **Minor-Negligible** – **not significant**; 1 location **moderate – significant** Demolition: all 5 locations **Minor-Negligible** – **not significant** Sub-structure: 4 locations **Minor-Negligible** – **not significant**; 1 location **moderate – significant** Construction**:** 4 locations **Minor-Negligible** – **not significant**; 1 location **moderate – significant** Traffic: **Negligible** - **not significant**

Category	Stage of Development	Description of Potential Effects Including Significance	Mitigation Measures	Residual Effect Including Significance
		Greenhouse gas emissions contributing to global warming and climate change resulting in **neutral** effects which is **not significant**	Using environmentally friendly materials that are locally sourced where possible	**Neutral – not significant**
	Completed Development	Direct, indirect and induced job creation resulting in: **Moderate beneficial** at the district level - **significant**. **Negligible** at the sub-regional level - **not significant**	None	**Moderate beneficial** at the district level - **significant**. **Negligible** at the sub-regional level - **not significant.**
		Increase in household spend resulting in: **Moderate beneficial** at the district level - **significant**. **Negligible** at the sub-regional level - **not significant.**	None	**Moderate beneficial** at the district level - **significant**. **Negligible** at the sub-regional level - **not significant.**
		Increase in housing stock resulting in: **Moderate beneficial** at the district	None	**Moderate beneficial** at the district level - **significant**. **Negligible** at the sub-regional level - **not**

Category	Stage of Development	Description of Potential Effects Including Significance	Mitigation Measures	Residual Effect Including Significance
		level - **significant**. **Negligible** at the sub-regional level - **not significant.**		**significant.**
		Change in demand on social and community infrastructure resulting in: Education: Primary & Secondary school capacities **Negligible** at the local level – **not significant**. Healthcare: **negligible** at the local level – **not significant**. Community Facilities: **Negligible** at the local level – **not significant.**	None	Education: Primary & Secondary school capacities **Negligible** at the local level – **not significant**. Healthcare: **Minor adverse** at the local level – **not significant**. Community Facilities: **Negligible** at the local level – **not significant.**
		Change in demand for open and recreational space resulting in **Minor beneficial** effects at the local level which is **not significant**.	None	**Minor beneficial** at the local level – **not significant**.
		Visual effects – Viewpoints 1; 2 & 4 **- Major-moderate beneficial** which is **significant**	LMP	**Major-moderate beneficial - significant**

Category	Stage of Development	Description of Potential Effects Including Significance	Mitigation Measures	Residual Effect Including Significance
		Viewpoints 3, 5-11 - **Moderate-minor beneficial to negligible** which is **not significant**	LMP	**Moderate-minor beneficial to negligible – not significant**
		Townscape Effects – NCR60; Manchester General Cemetery, NCA 55 Manchester conurbation - **Negligible** which is **not significant**	LMP	**Negligible – not significant**
		Queens Park (Gd II Listed); GMUHLCA Local Character Areas - **Moderate-minor beneficial** which is **not significant**	LMP	**Moderate-minor beneficial – not significant**
		Additional wastewater discharging to the local infrastructure - **Minor adverse** in the long term at the local level which is **not significant**	None	**Minor adverse – not significant**
		Severance, driver stress, pedestrian delay & amenity, accidents & safety, hazardous loads - **Negligible** which is **not significant**	Travel Plan	**Negligible** - **not significant**
		Road traffic vehicles exhaust emissions associated with vehicles travelling to and from the site - **Negligible** which is	Travel Plan	**Negligible** - **not significant**

Category	Stage of Development	Description of Potential Effects Including Significance	Mitigation Measures	Residual Effect Including Significance
		not significant		
		Entertainment noise from commercial unit - **Negligible** which is **not significant**	None above embedded mitigation	**Negligible** - **not significant**
		Traffic noise level increases - **Negligible** which is **not significant**	None	**Negligible** - **not significant**
		Building services plant noise - **Negligible** which is **not significant**	None	**Negligible** - **not significant**
		Greenhouse gas emissions contributing to global warming and climate change – **Major beneficial** which is **significant**	All energy use on site will be obtained from 100% renewable energy electricity supply provider.	**Major beneficial – significant**
		Mitigation of climate change due to improved fabric efficiency & Solar PV – **Major beneficial** which is **significant**	None	**Major beneficial - significant**
		Vulnerability & risk to effects of climate change – overheating, flooding, & extreme weather – **Major beneficial** which is **significant**	Designing climate resilient landscaping & to reduce any urban heat island effects	**Major beneficial - significant**

Category	Stage of Development	Description of Potential Effects Including Significance	Mitigation Measures	Residual Effect Including Significance
Climate Change	Demolition and Construction	GHG emissions contributing to global warming and climate change resulting in **neutral** effects which is **not significant**	Using environmentally friendly materials that are locally sourced where possible. Recycling and reusing demolished materials as much as possible within the proposed build to reduce the embodied carbon	**Neutral** which is **not significant**
	Completed Development	GHG emissions contributing to global warming and climate change resulting in **neutral** effects which is **not significant**	Highly energy efficient build standard and the inclusion of Solar PV on the apartment blocks. Carbon neutral through provision of operational energy supply from a 100% renewable energy provider.	**Major beneficial** which is **significant**

16.4 In order to further minimise any potential disruption and disturbance to nearby sensitive receptors such as the local residents a CEMP and LMP will be developed in conjunction with MCC and relevant consultees, has been recommended.

16.5 The CEMP will outline how the effects of construction can be managed by good practice and environmental controls which are routinely and successfully applied on other similar development proposals.

16.6 The LMP will outline the ongoing maintenance of all hard and soft landscape elements within the proposed development. The LMP will ensure that the embedded mitigation in the form of the new park, improved streets and public spaces will continue to perform as appropriate mitigation for the proposed development.

Summary and Conclusions

16.7 A comprehensive assessment of the potential effects of the construction and operational phases of the proposed development has been undertaken as part of this EIA to establish the environmental changes associated with the development.

16.8 The proposed development has been designed in accordance with the findings and recommendations of the EIA. Any adverse effects identified through the assessment have been minimised as far as possible through the design process or the application of appropriate mitigation measures. Those effects associated with the construction activities will be controlled by a CEMP.

16.9 Effects during construction period are considered to be short term **minor adverse, negligible** or **minor beneficial** for the majority of impacts which are considered **not significant**. **Major adverse** and **Major-moderate adverse** impacts are anticipated due to changes to the changes in views at Viewpoints 1, 2 and 4 which is **significant**. There are some **moderate adverse** impacts relating to potential noise impacts on local receptors which is **significant**. There are also **moderate beneficial (significant)** impacts associated with local job creation and local expenditure during the construction phase. Construction phase impacts are deemed to be short-term and reversible.

16.10 Potential environmental impacts of the completed development range from **minor adverse** to **major beneficial**. **Significant beneficial** impacts are anticipated with regards to townscape and visual amenity due to the comprehensive regeneration of the area, with new high-quality built form, new facilities, routes and public spaces. **Significant beneficial** impacts are also anticipated with regards to socioeconomics and climate change. **Significant neutral** effects are also anticipated with regards to townscape and visual amenity. No significant adverse impacts are anticipated at the completed development phase.

16.11 The proposed development constitutes a sustainable, high quality development which accords with national and local planning policy. There are some **significant adverse impacts** associated with townscape and visual amenity and noise during demolition and construction, however, these impacts are temporary and reversible. There are **significant beneficial impacts** associated with socioeconomics during construction. There are anticipated to be **significant beneficial impacts** at the completed development phase with regards to townscape and visual amenity, socioeconomics and climate change. Ultimately, the completed development will bring about a sympathetically designed development that contributes to the economic, social and environmental aspirations of the city and wider region.

Abbreviations

AADT	Annual Average Daily Traffic
AAP	Area Action Plan
AAWT	Annual Average Weekday Traffic
AIA	Aboricultural Impact Assessment
ACM	Asbestos Containing Materials
ADM	Atmospheric Dispersion Model
ADMS	Atmospheric Dispersion Modelling System
ADS	Acoustic Design Statement
AOD	Above Ordnance Datum
APIS	Air Pollution Information Service
AQAP	Air Quality Action Plan
AQMA	Air Quality Management Area
AQS	Air Quality Strategy
ARUN	Automatic Urban and Rural Network
ASHE	Annual Survey of Hours and Earnings
AUN	Automatic Urban Network
BAP	Biodiversity Action Plan
BBS	Breeding Birds Survey
BCT	Bat Conservation Trust
bgl	Below Ground Level
BGS	British Geological Survey
BHS	Biological Heritage Site
BoCC	Birds of Conservation Concern
BPM	Best Practicable Means
BRE	Building Research Establishment
BRES	Business Register Employment Survey
BREEAM	Building Research Establishment Environmental Assessment Methods
BS	British Standard
BTO	British Trust for Ornithology
CAFE	Clean Air For Europe
CEMP	Construction Environmental Management Plan
CERC	Cambridge Environmental Research Consultants
CFD	Computational Fluid Dynamic
CH4	Methane
CHP	Combined Heat and Power
CIBSE	Chartered Institute of Building Services Engineers
CIEEM	Chartered Institute of Ecology and Environmental Management
CITB	Construction Industry Training Board
CLEA	Contaminated Land Exposure Assessment
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CoCP	Control of Construction Practice
COPA	Control of Pollution Act
COSHH	Control of Substances Hazardous to Health
CRoW	Countryside Rights of Way
CRTN	Calculation of Road Traffic Noise
CS	Core Strategy
DAS	Design and Access Statement

dB	Decibels
DBA	Desk Based Assessment
DCLG	Department for Communities and Local Government
DEFRA	Department for Environment, Food & Rural Affairs
DETR	Department of the Environment, Transport and Regions
DfT	Department for Transport
DMRB	Design Manual for Roads and Bridges
DMP	Dust Management Plan
DoE	Department of Environment
DPD	Development Plan Document
DQRA	Detailed Quantitative Risk Assessment
EA	Environment Agency
EC	European Commission
ECoW	Ecological Clerk of Works
EcIA	Ecological Impact Assessment
eDNA	Environmental DNA
EfW	Energy from Waste
EFT	Emissions Factor Toolkit
EHO	Environmental Health Officer
EIA	Environmental Impact Assessment
ELMP	Ecological and Landscape and Management Plan
EPA	Environmental Protection Act
EPU	Environmental Protection Unit
EPS	European Protected Species
EPUK	Environmental Protection UK
EQS	Environmental Quality Standards
EQSD	Directive on Environmental Quality Standards
ES	Environmental Statement
EU	European Union
FCS	Favourable Conservation Status
FFL	Finished Floor Level
FRA	Flood Risk Assessment
FTE	Full Time Equivalent
FTP	Framework Travel Plan
GCN	Great Crested Newt
GDPO	General Development Procedure Order
GEA	Gross External Area
GIR	Ground Investigation Report
GIS	Geographical Information System
GLVIA	Guidelines for Landscape and Visual Impact Assessment
GQRA	Generic Quantitative Risk Assessment
GTP	Green Travel Plan
H_2S	Hydrogen Sulphide
Ha	Hectare
HA	Highways Agency
HC	Hydrocarbons
HDV	Heavy Duty Vehicle
HER	Historic Environment Record
HGV	Heavy Goods Vehicle
HMP	Habitat Management Plan
HMSO	Her Majesty's Stationery Office
HRA	Habitats Regulations Assessment

HSI	Habitat Suitability Index
Hz	Hertz
IAQM	Institute of Applied Quality Management
IDB	Internal Drainage Board
IEEM	Institute of Ecology and Environmental Management
IEMA	Institute of Environmental Management and Assessment
IGCB	Interdepartmental Group on Costs and Benefits
ILP	Institution of Lighting Professionals
ISO	International Standard O
JCA	Joint Character Area
JNCC	Joint Nature Conservation Committee
Km	Kilometre
Km/h	Kilometres per hour
IFA	Institute of Field Archaeologists
LAQM	Local Air Quality Management
LCA	Landscape Character Areas
LCT	Landscape Character Types
LDF	Local Development Framework
LDP	Local Development Plan
LDV	Light Duty Vehicles
LEL	Lower Explosive Limit
LEP	Local Enterprise Partnership
LEAP	Local Equipped Area of Play
LHN	Local Highways Network
LLFA	Lead Local Flood Authority
LNR	Local Nature Reserve
LOAEL	Lowest Observed Adverse Effect Level
LPA	Local Planning Authority
LTP	Local Transport Plan
LVIA	Landscape and Visual Impact Assessment
LWS	Local Wildlife Site
LWT	Local Wildlife Trust
LZC	Low or Zero Carbon
MAGIC	Multi-Agency Geographic Information for the Countryside
MEAS	Merseyside Environmental Advisory Service
mm/s	Millimetres per second
MMP	Material Management Plan
MNR	Marine Nature Reserve
NAQS	National Air Quality Strategy
NAEI	National Atmospheric Emission Inventory
NCA	National Character Areas
NE	Natural England
NERC	Natural Environment and Rural Communities Act
NGR	National Grid Reference
NHBC	National House Building Council
NIA	Natural Improvement Area
NIR	Noise Insulation Regulations
NMR	National Monuments Record
NNR	National Nature Reserve
NO	Nitrogen Monoxide
NO_2	Nitrogen Dioxide
NOx	Nitrogen Oxides

NOAEL	No Observed Adverse Effect Level
NPPF	National Planning Policy Framework
NPPG	National Planning Practice Guidance
NPSE	Noise Policy Statement for England
NRMM	Non-Road Mobile Machinery
NSCA	National Society for Clean Air
NSR	Noise Sensitive Receptor
NTS	Non Technical Summary
NVC	National Vegetation Classification
NVQ	National Vocational Qualification
O_2	Oxygen
O_3	Ozone
ODPM	Office of the Deputy Prime Minister
ONS	Office for National Statistics
OS	Ordnance Survey
PAH	Polyaromatic Hydrocarbons
PCU	Passenger Car Units
PGI	Preliminary Geoenvironmental Investigation
$PM_{2.5}$	Particulate Matter with an aerodynamic diameter of less than 2.5µm
PM_{10}	Particulate matter with a mean aerodynamic diameter of 10µm
ppb	Parts per billion
PPE	Personal Protective Equipment
PPG	Pollution Prevention Guidelines
PPG	Planning Policy Guidance
ppm	Parts per million
PPS	Planning Policy Statement
PPV	Peak Particle Velocities
PRF	Potential Roost Feature
PROW	Public Rights of Way
RAF	Royal Air Force
RAM	Reasonable Avoidance Measures
RAMMS	Reasonable Avoidance Measures Method Statement
RBCA	Risk-Based Corrective Action
RBMP	River Basin Management Plans
RES	Regional Economic Strategy
RDA	Regional Development Agency
RPA	Root Protection Area
RSPB	Royal Society for the Protection of Birds
RSS	Regional Spatial Strategy
RTS	Regional Transport Strategy
RUDP	Replacement Unitary Development Plan
SAC	Special Area of Conservation
SAM	Schedule Ancient Monument
SAP	Standard Assessment Procedure
SBI	Site of Biological Importance
SCI	Statement of Community Involvement
SEA	Strategic Environmental Assessment
SEL	Sound Exposure Level
SFRA	Strategic Flood Risk Assessment
SLM	Sound Level Meter

SMR	Sites and Monuments Record
SNCI	Sites of Nature Conservation Importance
SOA	Super Output Area
SOAEL	Significant Observed Adverse Effect Level
SO_2	Sulphur dioxide
SPA	Special Protection Area
SPD	Supplementary Planning Document
SPG	Supplementary Planning Guidance
SPS	Supporting Planning Statement
SRBC	South Ribble Borough Council
SSSI	Site of Special Scientific Interest
SUDs	Sustainable Urban Drainage System
SVOC	Semi-Volatile Organic Compounds
SWMP	Site Waste Management Plan
TA	Transport Assessment
TCA	Townscape Character Area
TG	Technical Guidance
TPO	Tree Preservation Order
TPH	Total Petroleum Hydrocarbons
TRO	Traffic Regulation Order
TP	Travel Plan
TS	Transport Statement
TZVI	Theoretical Zone of Visual Influence
UK-AIR	United Kingdom Air Information Resource
UKAQS	United Kingdom Air Quality Strategy
USA	Updating and Screening Assessment
UXO	Unexploded Ordnance
VE	Visual Envelope
VOC	Volatile Organic Compounds
WEEE	Waste Electrical and Electronic Equipment
WFD	Water Framework Directive
WHO	World Health Organisation
WRA	Water Resources Act 1991
$\mu g/m^3$	Micrograms per cubic metre
UDP	Unitary Development Plan
UU	United Utilities
VP	Vantage Point
ZTV	Zone of Theoretical Visibility
ZVI	Zone of Visual Influence

Glossary

Above Ordnance Datum (AOD)	The distance above the mean tides at Newlyn, Cornwall.
Ambient	Background levels.
Annual mean concentration	The average (mean) of the hourly pollutant concentrations measured or predicted for a one year period
Baseline	Existing environmental conditions present on, or near a site, against which future changes may be measured or predicted.
Biodiversity	The variety of life forms that inhabit the earth.
Borehole	A hole drilled or dug into the earth's surface through which groundwater can be withdrawn.
Construction Environmental Management Plan (CEMP)	A documented management system with environmental procedures to monitor residual impacts of the construction and operational phases of the development.
Contamination	Contamination is the addition, or the result of addition, or presence of a material or materials to, or in, another substance to such a degree as to render it unfit for its intended purpose.
Cumulative Impacts	Impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions.
Directive	European Commission (EC) Directives impose legal obligations on European Member States. They are binding as to the results to be achieved, but allow individual states the right to decide the form and methods used to achieve the results. An example of this is the EC Air Quality Framework Directive 96/62 that is brought into legal effect in the UK by the Air Quality (England) Regulations (2000).
Displacement	An estimate of economic factors that may have reasonably been attained by other competitors in the absence of the development.

Dust	Fine particles of solid materials ranging in size from 1 to 75 um diameter (see British Standard 3405) capable of being resuspended in air and settling only slowly under the influence of gravity where it may cause nuisance.
Dust deposition rate	The rate at which particulate matter is deposited on to surfaces typically expressed in units of mg/m2/day.
Ecology	The study of living organisms in relation to their surroundings.
Ecosystem	Term used to describe a community of interdependent organisms and the physical environment they inhabit.
Effluent	A fluid discharged or emitted to the external environment.
Emission	A material that is expelled or released to the environment. Usually applied to gaseous or odorous discharges to the atmosphere.
Emission factors	The average emission rate of a given pollutant for a given source, relative to units of activity. Used to model future pollution concentrations under different scenarios
Environmental Impact Assessment (EIA)	A technique for ensuring that the likely effects of new development on the environment are fully understood and taken into account before the development is allowed to go ahead. It provides a focus for public scrutiny of the project and enables the importance of the predicted effects, and the scope for modifying or mitigating them, to be properly evaluated by the decision-making authority.
Environmental impact	The total effect of any operation on the surrounding environment.
Environmental Statement (ES)	The outcome of the Environmental Assessment presented in a formal document or documents in accordance with EC Directive 85/337. Includes such information that is reasonably required to assess the environmental effects of a development.
EU limit values	Limits set by the European Union on air quality to be achieved by member states. In the UK this EU Directive is prescribed under the Air Quality Limit Values (England) Regulations (2003) and subsequent amendments. For nitrogen dioxide the annual mean limit value and the annual mean objective value are set at the same concentration.
Fauna	The animal life characteristics of a particular biome.

Flood	The inundation of normally dry land by water.
Flood plain	An area of limited relief bordering a river inundated when a river overflows its banks during a flood.
Flora	The combination of plant life in a particular geographical area.
Fluvial Flooding	Flooding occurs in the floodplains of rivers and watercourses when the capacity of watercourse is exceeded as a result of rainfall or snow and ice melts within catchment areas further upstream.
Fumes	The Clean Air Act 1993 (s.64) defines fumes as any airborne solid matter smaller than dust. In this assessment fume is considered to be airborne solid matter with a diameter of less than 1 µm.
Fugitive dust emissions	Dust emissions escaping from a construction site.
Groundwater	Water that accumulates in the pore spaces and cracks in the rocks beneath the earth's surface.
Groundwater Source Protection Zone	A defined area within which groundwater is extracted for potable water supply. The area is defined by the Environment Agency on the basis of the length of time taken for groundwater to migrate from the potable source.
Gross Domestic Product (GDP)	A measure of the total economic activity occurring in the UK.
Habitat	The specific environment in which an organism lives.
Heavy Duty Vehicle	A vehicle type classification, including rigid and articulated heavy goods vehicles, plus buses and coaches, that is used by air quality dispersion models
Hydrology	The scientific study of water in the earth/atmosphere system.
Hydrogeology	The study of geological factors relating to the Earth's water.
Impact significance	Opinions from a relevant planning authority at an initial stage as to what are the nature and potential scale of the environmental impacts arising from the proposed development and assessing what further studies are required to establish their significance.
In-situ	In the natural, original or appropriate position.

Intrusive investigation	An investigation involving penetration into the ground and removal of soil.
Landscape Character Type	A landscape unit with a distinct, consistent and recognisable character.
Light pollution	Different forms of unwanted or wasted light as identified by the Institute of Lighting Engineers, including sky glow, glare and light trespass.
Light Duty Vehicle	A vehicle type classification, including motorcycles, cars and light goods vehicles, that is used by air quality dispersion models
Listed Building	A building included in a list produced by the Secretary of State for Culture, Media and Sport. It comprises buildings and other structures that are of special architectural or historic interest.
Local Nature Reserve	An area of local interest to which there is a commitment for conservation declared under the National Parks and Access to Countryside Act 1949.
Local road	Minor roads, below the category of a local distributor, which provides direct access to residential and commercial properties.
Mitigating factor	A matter to be taken into account as a benefit to offset any perceived or demonstrable harmful impact.
Mitigation (measure)	The measures put forward to prevent, reduce and where possible, offset any adverse effects on the environment.
National air quality objectives	A series of objectives set by the Government's Expert Panel on Air Quality to be achieved either without exception or with a permitted number of exceedances within a specific timescale. For nitrogen dioxide the annual mean limit value and the annual mean objective value are set at the same concentration
National Character Area (NCA)	A natural subdivision of England based on a combination of landscape, biodiversity, geodiversity and economic activity.
National Cycle Network (NCN)	A national network of cycle routes, the first 5000 miles of which were opened in summer 2000, under development by the civil engineering charity SUSTRANS.
Net	After all deductions have been made.

Noise Exposure Category	Recommended noise levels introduced in PPG24 for residential development near transport-related noised sources.
Non-Technical Summary (NTS)	A summary of the Environmental Statement in non-technical language providing a concise, yet comprehensive summary of the likely effects of the project on the environment.
Permeability	The extent to which an environment allows a variety of access routes through it. A permeable environment is one where there is ease of movement and where people have a choice in the routes they may use.
Pile	A timber, steel or concrete post that is driven, jacked or cast (bored) into the ground to carry vertical or horizontal loads.
Pluvial Flooding	Surface water flooding caused by rainwater run-off from urban and rural land with low absorbency.
(Sensitive) Receptor	A component of the natural, created or built environment such as human being, water, air, a building, or a plant that is affected by an impact.
Residual impacts	Those impacts of the development that cannot be mitigated following implementation of mitigation proposals.
Risk assessment	An assessment of the likelihood and severity of an occurrence.
Road links	Individual sections of the road network, usually divided by junctions, used in the modelling of scenarios
Schedule 2 development	Development project types under EIA regulations where EIA is not mandatory in all cases but may be required, depending on the size, nature and scale of the development and the potential for significant environmental effects to arise.
Scoping	An initial stage in determining the nature and potential scale of environmental impacts arising as a result of a development, and an assessment of what further studies are required to establish their significance.
Scoping report	Report submitted prior to an EIA setting out the methods and scope proposed to assess the environmental impacts of a development.

Scrub	Vegetation dominated by shrubs and woody species.
Setting	The context in which a building or area can be appreciated.
Site of Special Scientific Interest (SSSI)	The best sites for wildlife and geological features in England as designated under the Wildlife and Countryside Act 1981.
Statutory Consultees	Groups or bodies that, by law, must be consulted as part of the planning application process for certain types of development.
Statutory Flood Defences	The position defined by the EA, at which protection is required to prevent flooding of a given annual frequency.
Sustainable Development	Development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs.
Sustainable Urban Drainage Systems (SUDS)	Sustainable drainage systems use techniques to control surface water run-off as close to its origin as possible, before it enters a watercourse. This involves moving away from traditional piped drainage systems to engineering solutions that mimic national drainage processes such as porous pavements.
Sward	An expansive growth of grassland/turf.
Synergism	A condition in which two substances work together in such a way that their combined effect is greater than the sum of the two separate effects.
Threshold	A level of effect above which an assessment will be taken of whether any changes to procedures need to be made.
Threshold value	The minimum value that will produce a response or specified effect.
Topography	The natural or artificial features, level and surface form of the ground surface.
Track-out	The transport of mud and other dusty materials from a works area onto the public highway. Usually on the wheels and body work of vehicles.
Trial pits	Intrusive investigation positions excavated by a mechanical excavator.

24 hour mean concentration	The average (mean) of the hourly pollutant concentrations measured or predicted for 24 consecutive hours in one day