

Apex Tower, Manchester

Environmental Statement: Non-Technical Summary

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1 INTRODUCTION

1.1 OVERVIEW

- 1.1.1 Arrowsmith Investment Ltd. (the applicant) is seeking two detailed planning permissions for a development proposed at land located between Great Bridgewater Street, Albion Street and Trumpet Street (hereafter referred to as “the site”). The site is split into two parcels of land. Site A, the larger parcel of land (0.051 hectares), is located to the east of Albion Street, to the north of Trumpet Street and to the west of The Briton’s Protection public house. Site B, the smaller parcel of land (0.021 hectares), is to the south of Great Bridgewater Street, to the west of the Jurys Inn Hotel, to the north of Trumpet Street and to the east of The Briton’s Protection public house. The location and boundary of the site can be found in Chapter 2 of this Environmental Statement (ES), centred on Ordnance Survey Grid Reference 383686, 397608. The combined area of the site is approximately 0.072 hectares.
- 1.1.2 The following individual planning applications are being submitted and have been assessed within this ES:
- Site A or Application A: Detailed Planning Permission for the erection of a 26-storey residential tower for 72 apartments (use Class C3), with associated car parking, cycle parking, substation, servicing, and associated landscaping works; and
 - Site B or Application B: Detailed Planning Permission for the erection of a 7-storey building with commercial floorspace (Use Class E/Sui Generis) on the first and second floors and four floors (3rd–6th) of residential containing 4 apartments (use Class C3), with associated parking and servicing.
- 1.1.3 This document is a summary of the Environmental Statement (ES) submitted with the planning applications. The ES reports on the findings of the Environmental Impact Assessment (EIA) process, which involves the identification of significant effects on the environment as a result of the proposed development and appropriate measures to mitigate these effects.
- 1.1.4 A brief summary of the EIA process is provided below, with an introduction to the development proposals in Section 2, a topic-by-topic summary of the environmental conditions and potential effects in Section 3, and conclusions and mitigation measures summarised in Section 4.

1.2 SITE SPECIFIC TERMINOLOGY TO BE USED IN THE EIA

- 1.2.1 The terminology that has been used throughout the EIA is as follows:
- **The proposed development:** describes the project as a whole (i.e. both planning applications combined);
 - **The site:** describes the project site as a whole (i.e. the area covered by both planning applications combined);
 - **Application A or site A:** will be specific to the full planning application area and development proposed for the larger parcel of land to the west; and
 - **Application B or site B:** will be specific to the full planning application area and development proposed for the smaller parcel of land to the east.

1.3 ABOUT THE APPLICANT

- 1.3.1 Arrowsmith Management Ltd is a property development company with a growing presence in the North-West. Currently they have active schemes in Stockport, Salford and Trafford. The proposed development marks Arrowsmith’s first scheme in Manchester city centre, with the intention of delivering a residential-led development in a sustainable and growing area of the city.
- 1.3.2 Arrowsmith Management Ltd is run by Tony Connor and Mohammed Haji. Tony Connor is a British construction and property development professional with 30 years of experience in the UK, Middle East, and Europe. Mohammed Haji is a businessman, developer, and entrepreneur with multi-disciplinary business interests built up over 40 years, with property development at its core.

1.4 WHY AN ENVIRONMENTAL IMPACT ASSESSMENT WAS CARRIED OUT

- 1.4.1 The need to undertake an EIA is set out in The European Union (EU) Environmental Impact Assessment Directive 2014/52/EU (‘2014 EIA Directive’) which came into force on 15th May 2014. England transposed the EIA Directive on 16th May 2017 through The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended) and referred to as the ‘EIA Regulations’ herein.
- 1.4.2 Projects that require or may require an EIA, otherwise known as “EIA development”, are set out in Schedule 1 and 2 of the EIA Regulations. A ‘Schedule 1’ development automatically requires an EIA as this has the most potential to cause environmental effects. A ‘Schedule 2’ development requires an EIA where it exceeds certain thresholds.
- 1.4.3 Although the proposed development does not exceed any of the criteria set out in Schedule 2 of the EIA Regulations, it is deemed that there is the potential for significant effects for certain technical areas. This is particularly the case due to the tall height of the proposed development. Therefore, the applicant acknowledges that the project constitutes an EIA development and has decided to prepare an ES.
- 1.4.4 The following topics have been assessed as part of the EIA:
- Noise and vibration;
 - Air quality;
 - Wind microclimate;
 - Daylight and sunlight;
 - Built heritage;
 - Greenhouse gas emissions; and
 - Townscape and visual impact

1.5 ENVIRONMENTAL IMPACT ASSESSMENT APPROACH

- 1.5.1 Although there can be some variation between assessment topics and the specific methods used, there is a standard approach to undertaking EIA, with all assessments involving the following stages:
- Determination of the environmental baseline: what are the conditions now and how might these be expected to change over time if the development did not occur;
 - Consultation: contact with relevant organisations to gather information on the baseline conditions, likely environmental effects, and to discuss potential mitigation options;

- Identification of environmental effects and their significance: each topic has a standard approach, which could include modelling to predict effects. Most topics consider the sensitivity of any environmental features, people or property ('receptors') which could be affected and the potential magnitude of the impacts/change to the environment when determining the significance of the effect;
 - Cumulative effects: consideration of the effects of the proposed development in combination with other nearby developments and the potential for interactions between effects, for example construction noise occurring at the same time as dust from demolition might produce a more significant effect overall;
 - Mitigation: development of measures which will be required to reduce the significance of environmental effects, if the development gets planning permission; and
 - Residual effects: highlighting any significant effects which will remain even after mitigation measures have been implemented; these can be beneficial as well as adverse.
- 1.5.2 The EIA process means that issues can be identified while the development proposals are still being finalised and can result in design improvements to minimise environmental effects; the assessments are then updated to reflect these changes.
- 1.6 CUMULATIVE AND INTERACTIVE EFFECTS**
- 1.6.1 Whilst potential effects that occur in isolation may be insignificant, there is the possibility for significant effects to occur when a number of potential effects are combined. The two types of cumulative effect that the EIA process considers are:
- Interaction effects: multiple effects acting upon the same receptor, from the same development (for example air quality plus noise effects during construction); and
 - In-combination effects: the combination of effects from nearby developments, together with those predicted for the proposed development Farm (for example noise from neighbouring schemes).
- 1.6.2 The following criteria was used in order to identify the in-combination cumulative schemes that were considered as part of the assessment:
- Those submitted for planning via a planning application, permitted/with a resolution to grant permission or under construction;
 - Located within approximately 1 km of the site;
 - Those which are 10,000 square metres (m²) or greater Gross External Area (GEA); and
 - Schemes below the above thresholds but of more than 50 residential units.
- 1.6.3 The in-combination cumulative schemes for assessment were presented to MCC as part of the EIA Scoping Report (Appendix 4-A, ES Volume III). Although a formal scoping opinion was not received from MCC, they did confirm that they were happy with the approach set out. The developments that have been considered in the technical assessments are shown in Figure 1-1.

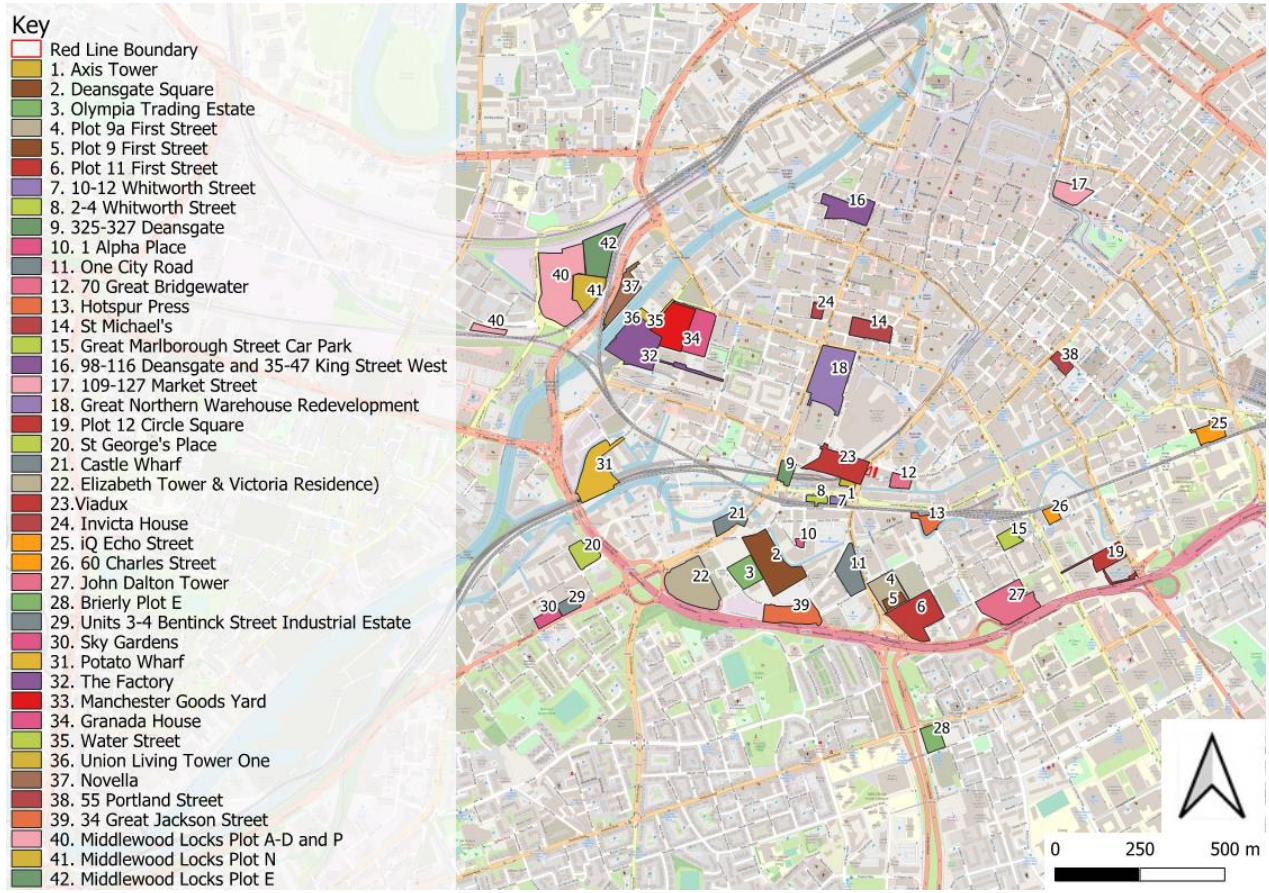


Figure 1-1 Location of cumulative schemes

2 THE SITE AND DEVELOPMENT PROPOSALS

2.1 SITE DESCRIPTION

- 2.1.1 The anticipated area for both planning applications combined is 0.072 hectares, centred on Ordnance Survey Grid Reference 383686, 397608. The site is split into two parcels of land. Site A, the larger parcel of land (0.051 hectares), is located to the east of Albion Street, to the north of Trumpet Street and to the west of The Briton's Protection public house (as shown in Figure 2-1). Site B, the smaller parcel of land (0.021 hectares), is to the south of Great Bridgewater Street, to the west of the Jurys Inn Hotel, to the north of Trumpet Street and to the east of The Briton's Protection public house (as shown in Figure 2-2). The Briton's Protection public house divides the two sites.

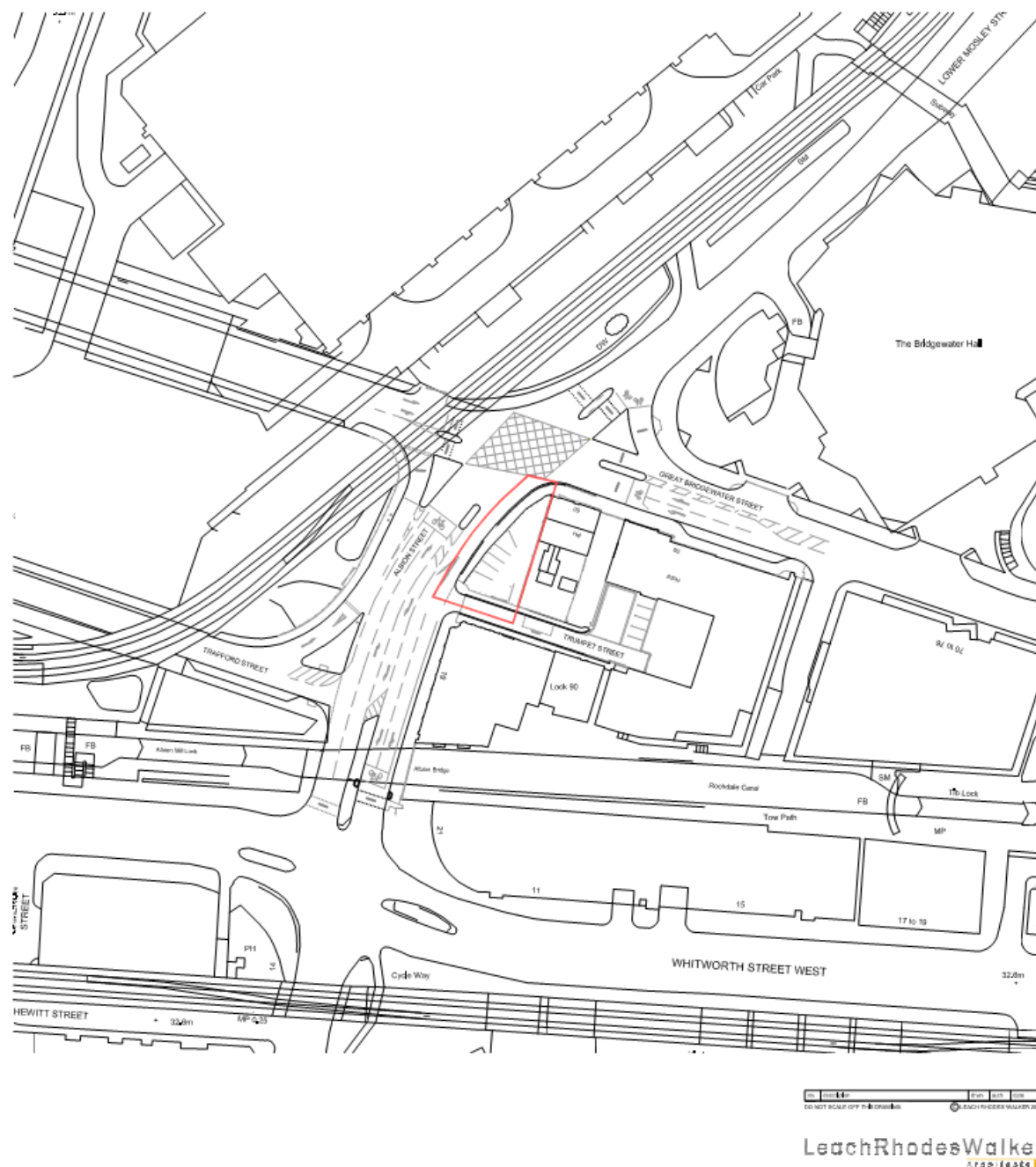


Figure 2-1 Site location plan for site A

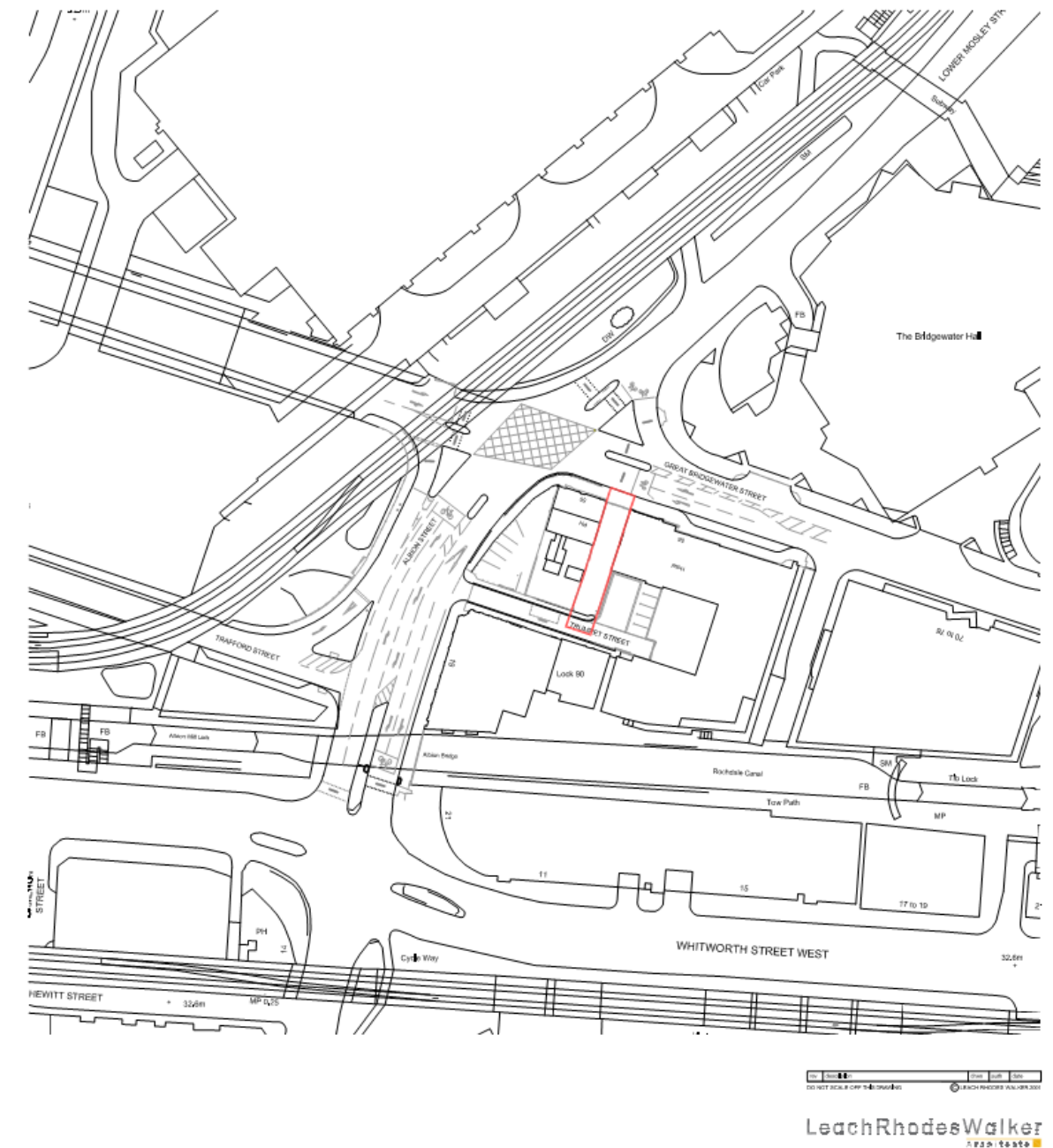


Figure 2-2 Site location plan for site B

- 2.1.2 Site A, the larger parcel of land to the west, is currently being used for surface car parking, with there being an asphalt surface and space for seven cars. Site B, the smaller parcel of land to the east, currently has no formal usage, with there being a gravel surface. Both sites are accessed by car from the south via Trumpet Street, with the larger parcel of land also accessible on foot from the north and west.

2.2 THE PROPOSED DEVELOPMENT

- 2.2.1 The proposed development is split into two detailed planning applications.
- 2.2.2 The formal description for the detailed planning application for the larger parcel of land to the west of the Briton's Protection public house (i.e., site A) is as follows:

‘Detailed Planning Permission with all matters reserved for the erection of a 26-storey residential tower for 72 apartments (Use Class C3), with associated car parking, cycle parking, substation, servicing, and associated landscaping works.’

2.2.3 The formal description for the detailed planning application for the smaller parcel of land to the east of the Briton’s Protection public house (i.e., site A) is as follows:

‘Detailed Planning Permission with all matters reserved for the erection of a 7-storey building with commercial floorspace (use Class E/Sui Generis) on the first and second floors and four floors (3rd-6th) of residential containing 4 apartments (Use Class C3), with associated parking and servicing.’

2.3 INDICATIVE CONSTRUCTION PROGRAMME AND ACTIVITIES

2.3.1 An indicative construction programme has been produced for the proposed development. The construction period for site A is likely to begin before site B, but they are likely to finish at a similar time, as outlined in Table 2-1.

Table 2-1 Indicative construction programme for the proposed development

Site	Indicative start date	Indicative end date
Site A	Q3 2022	Q2 2024
Site B	Q2 2023	Q2 2024

2.3.2 The indicative construction programme is further broken down by activity in Table 2-2.

Table 2-2 Indicative construction programme broken down by activity

Activity	Site A			Site B		
	Start week	Finish week	Duration	Start week	Finish week	Duration
Site preparation	1	6	5	43	45	2
Piling	6	9	3	45	48	3
Substructure	9	15	6	48	52	4
Superstructure	15	52	47	52	62	10
Bathroom pods	27	56	28			
Façade	32	63	30	61	68	7
Lift	39	66	27	66	78	10
Fitout	40	102	59	65	98	30
Tower crane and hoist infills	65	86	19			
Landscaping	93	99	6			

2.4 HOW HAS THE DESIGN IMPROVED THROUGHOUT THE PROCESS/ARE THERE ANY ALTERNATIVES?

2.4.1 The approach to the consideration of alternatives for the proposed development is to firstly consider the ‘do nothing’ option, which identifies the environmental implications for the site and the surrounding area, should the site remain in its existing condition. In effect, this enables consideration of whether the benefits of the scheme outweigh the costs of the scheme. Following this, the following types of alternatives are discussed:

- Alternative sites; and
- Masterplan alternatives and design evolution.

The ‘Do Nothing’ Alternative

2.4.2 The area surrounding the proposed development is undergoing substantial development in line with the relevant planning policies, specifically the Manchester Core Strategy Development Plan Document (MCC 2012). The site falls within the City Centre Regeneration Area, which under Policy H1 of the Manchester Core Strategy needs to have 16,500 new homes between 2012 and 2027. Therefore, the site has a role to play in increasing housing supply in Manchester City Centre. If the proposed development were to not go ahead, then this would impact upon MCC’s ability to meet its housing needs in full during the plan period.

Alternative sites

2.4.3 No other development sites have been considered by the applicant, as the site has been acquired by the applicant for development purposes. The site is appropriate for a mixed-use development and the proposed development has been designed as a direct response to the site’s development potential and to make the most efficient use of brownfield land. As such, no alternative sites were considered for the proposed development.

Masterplan alternatives and design evolution

Design Evolution

2002

2.4.4 Initially, an option was explored that involved relocating the Briton’s Protection public house, moving it further to the east, thereby making the site larger. 16 storeys were proposed with a glass façade to Albion Street and a solid element facing towards the existing pub. Figure 2-3 shows the previous scheme from 2002.



Figure 2-3 Previous Scheme 2002

2004

- 2.4.5 An option to retain the Briton's Protection public house in its existing location was subsequently explored. The footprint was contained to the boundary of Albion Street and the existing pub. 6 storeys were presented, but the density of the development screened the pub beyond and lacked presence both from and to the city. Figure 2-4 shows the previous scheme from 2004.



Figure 2-4 Previous Scheme 2004

2015

- 2.4.6 An option to retain the Briton's Protection public house in its existing location was explored further while creating an iconic structure at this major arterial route into and out of the city. The proposal straddled the existing heritage asset and revealed the existing facades of surrounding buildings from the street level. The view to Jurys Inn Hotel was maintained, as well as the finer aspects of the brick façade to the heritage asset on the site. The design was intended to welcome the future of the city while respecting the past. The building would be a combination of steel and glass façade facing Albion Street, with a masonry element to its opposing and balancing counterpart. Figure 2-5 shows the previous scheme from 2015.



Figure 2-5 Previous Scheme 2015

3 ENVIRONMENTAL CONDITIONS AND POTENTIAL EFFECTS

3.1 INTRODUCTION

- 3.1.1 The following sections provide a summary of the assessments undertaken in the ES. Specific terminology is used to classify the environmental effects of the proposed development. Most disciplines have adopted consistent terminology in defining the significance of the environmental effect (i.e., the consequence of the proposed development to a certain feature/receptor). Where different terminology has been adopted, this is in line with best practice guidance relating to that particular discipline. In general, significance of effect has been defined as being major, moderate, minor, or negligible, whereby major and moderate are considered to be “significant” and minor or negligible considered “not significant”.

3.2 NOISE AND VIBRATION

Introduction

- 3.2.1 Hydrock were appointed to provide acoustic consultancy services on the proposed development.
- 3.2.2 Although a formal scoping opinion was not received from MCC, they did confirm that they were happy with the approach set out in the EIA Scoping Report (Appendix 4-A, ES Volume III), which was submitted to MCC on 20th October 2021.
- 3.2.3 The potential noise and vibration impacts outlined within the scoping document, together with the noise survey methodology, were agreed with Laura Miller (Environmental Health Officer) of MCC via email consultation (15th October).
- 3.2.4 A noise survey was carried out at the site to assess the existing baseline noise climate. The noise survey was used to assess construction noise, plant noise, glazing and ventilation.

Construction effects and mitigation

- 3.2.5 All activities associated with the construction phase of the proposed development have the potential to generate noise and vibration that propagates beyond the site boundary. The magnitude of the effect depends upon the distance between the noise and/or vibration source and the Existing Sensitive Receptors (ESRs), together with any acoustic screening.
- 3.2.6 The noise effects of the construction phase on existing and proposed residential properties is likely to be minor adverse for the majority of the construction schedule, however there is potential for short-term moderate adverse effects and in some cases major adverse effects during high-risk construction activities taking place in the immediate vicinity of ESRs.
- 3.2.7 The vibration effects of the construction phase on existing and proposed residential properties is likely to be negligible to minor adverse for the majority of the construction schedule, however there is potential for short-term moderate adverse effects and in some cases major adverse effects during high-risk construction activities which take place in the immediate vicinity of ESRs.
- 3.2.8 It is recommended that a more detailed assessment of construction noise and vibration is conditioned so that it can be carried out when more detailed information becomes available, in order to provide a more specific mitigation strategy. This is to be secured via a suitably worded Construction Environmental Management Plan (CEMP).

- 3.2.9 Furthermore, given the proximity of ESRs and potential for significant adverse effects, the implementation of a construction noise and vibration monitoring scheme is considered to be appropriate, depending upon the findings of more detailed assessment works. Particular consideration should be given to potential building damage of the Grade II listed Briton’s Protection public house, as a result of construction vibration.

Operation effects and mitigation

- 3.2.10 Relevant operational aspects and designed-in mitigation that affect the acoustic environment are as follows:
- Daytime and night time internal level;
 - Noise from Britons Protection public house beer garden;
 - Commercial noise from Britons Protection public house and the Tower of Light; and
 - Noise from proposed ancillary equipment/building services.
- 3.2.11 Daytime and night-time internal levels have been predicted and mitigated through the specification of glazing and ventilation strategies. Without the implementation of mitigation measures, the potential impacts within living rooms and bedrooms during the daytime and night would be major adverse.
- 3.2.12 Commercial noise from the Briton’s Protection public house and the Tower of Light had been assessed in terms of internal impact using Noise Rating (NR) curves. Glazing has been specified for facades that have a line of site to either of the noise sources.
- 3.2.13 Enhanced acoustic glazing is required to all facades in order to secure suitable internal noise levels, in combination with mechanical ventilation, which will form the ventilation strategy.

Residual effects and conclusions

Residual effects during construction

- 3.2.14 Providing suitable noise and vibration management and mitigation is secured via a suitably worded CEMP, minor adverse to short-term moderate adverse effects are anticipated at the nearest receptors.

Residual effects during operation

- 3.2.15 The inclusion of enhanced acoustic glazing and mechanical ventilation, as outlined within this assessment would ensure that residual effects are negligible within proposed habitable rooms.

3.3 AIR QUALITY

Introduction

- 3.3.1 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. In addition, the proposed development has the potential to expose future occupants to any existing air quality issues. An assessment was therefore undertaken in order to determine baseline conditions, consider the potential for the exposure of future residents to elevated pollution levels and assess potential effects as a result of the proposed development.

Construction effects and mitigation

3.3.2 Potential construction phase air quality impacts from fugitive dust emissions were assessed as a result of earthworks, construction and trackout activities. It is considered that the use of good practice control measures would provide suitable mitigation for a proposed development of this size and nature and reduce potential impacts to an acceptable level. This is considered to be minor adverse in the short term at a local level and not significant.

Operational effects and mitigation

3.3.3 Dispersion modelling was undertaken in order to predict pollutant concentrations across the proposed development as a result of emissions from the local highway network. Outputs were subsequently verified using local monitoring data.

3.3.4 The dispersion modelling assessment indicated pollution levels were above the relevant criteria at a number of locations across the ground floor of site A and below the relevant criteria across all locations at site B. It is proposed to install mechanical ventilation within the proposed development to serve all apartments across site A and site B, as well as the proposed commercial units, to ensure a supply of clean air for future occupants. It should be noted that pollution levels were below the relevant criteria at roof level for site A where the proposed mechanical ventilation system inlets will feed the building and associated apartments. As such, the proposed development is considered to control potential impacts to an acceptable level. This is considered to be not significant.

3.3.5 During the operational phase of the proposed development there is the potential for air quality impacts as a result of traffic exhaust emissions associated with vehicles travelling to and from the site. These were assessed against the relevant screening criteria. As the proposed development will result in a reduction in vehicles travelling to and from site compared to the existing land use, road vehicle exhaust emission impacts are predicted to be negligible. This is considered to be not significant.

Residual effects and conclusions

3.3.6 The assessment did not indicate any significant residual air quality effects as a result of the proposed development.

3.4 WIND MICROCLIMATE

Introduction

3.4.1 Wind microclimate is the study of wind conditions at pedestrian level, to determine whether the wind speeds experienced are safe and suitable for the intended pedestrian activities at a given location.

3.4.2 The wind microclimate has been assessed through comparison of computational simulations of the wind around the site and surrounding area with and without the proposed development.

3.4.3 Conditions have been assessed on local thoroughfares, building entrances (both for the proposed development and surrounding buildings), bus stops and taxi drop off points and the existing amenity spaces in the Briton’s Protection public house beer garden and the Rochdale Canal towpath.

3.4.4 Conditions for the baseline (2022) are suitable for the intended pedestrian activities around the site.

Construction effects and mitigation

3.4.5 There are no adverse effects expected during construction of the proposed development, and no mitigation will be required.

Operational effects and mitigation

3.4.6 The inclusion of the proposed development changes the local wind conditions but does not make them unsuitable in any case.

3.4.7 Conditions for the beer garden to the Briton’s Protection public house are suitable for the intended use, regardless of season, when the proposed development is operational, with both the existing surrounds and also when accounting for cumulative schemes.

3.4.8 The inclusion of local cumulative schemes will further increase the extent of calm conditions around the site. This is likely due to them providing shelter to the proposed development from the dominant wind angles.

3.4.9 There are no adverse effects expected during operation of the proposed development, and no mitigation will be required.

Residual effects and conclusions

3.4.10 Due to the orientation and form of the proposed development, it is not expected to have a significant impact on the local wind microclimate.

3.4.11 All residual effects will be negligible and wind microclimate conditions will be suitable.

3.5 DAYLIGHT AND SUNLIGHT

Introduction

3.5.1 An assessment has been undertaken to establish the likely significant effects of the proposed development upon the amount of daylight and sunlight received by properties adjacent to the site. The assessment has been undertaken in accordance with the methodologies set out in The Building Research Establishment (BRE) Guidelines (BRE, 2011) ‘Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice 2011, 2nd edition’.

3.5.2 To assess the surrounding existing properties, the BRE Guidelines (BRE, 2011) provide two main methods for assessing daylight: Vertical Sky Component (VSC) and No Sky Line (NSL). The VSC method measures the amount of light available on a vertical wall or window following the introduction of barriers such as buildings. The NSL method is a measure of the distribution of daylight at the ‘working plane’ within a room (i.e. a horizontal ‘desktop’ plane of 0.85m in height). The NSL divides those areas of working plane in a room which receive direct sky light through the windows from those areas of the working plane which cannot. Where all of the windows meet the VSC and all of the rooms meet the NSL criteria within a property the effect is considered to be negligible.

3.5.3 For the assessment of sunlight, the approach considers the Annual Probable Sunlight Hours (APSH) for a reference point on a window (i.e. if a window point can receive at least 25% APSH, then the room should still receive enough sunlight). Windows are checked to see if they are facing 90° due south, with the emphasis on main living rooms and other rooms such as the kitchen and bedrooms being less important.

3.5.4 The BRE Guidelines (BRE, 2011) suggest that residential properties have the highest requirement for daylight and sunlight and states that:

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

3.5.5 The scope of residential properties that have been assessed has been determined through professional judgement, considering their orientation and proximity to the proposed development.

- 3.5.6 There is residential accommodation on the second floor of The Briton’s Protection public house, however the accommodation is in the northern half of the second floor with no windows overlooking the proposed development. As such, no detailed assessment of The Briton’s Protection public house has been undertaken.
- 3.5.7 The Hacienda is the only property defined as a sensitive receptor which has been considered, due to its close proximity to the site, and its use (residential apartments).
- 3.5.8 The Hacienda is located in a city centre where there is an expectation for a higher density of development, which inevitably leads to lower daylight and sunlight levels than residential buildings located in sub-urban, low-rise locations. The site is currently cleared, meaning it is underdeveloped with an unusually open aspect given the city centre location. In a city centre, it is likely that cleared sites will be developed and so the current level of daylight and sunlight received could not be expected to be maintained indefinitely. The Hacienda is therefore deemed to have a moderate sensitivity, as it is anticipated that the site would be developed, and the city centre location means there is an expectation for lower daylight and sunlight than the BRE targets, which are predicated on low-rise, suburban development.
- 3.5.9 The baseline conditions around the site were assessed to understand the levels of daylight and sunlight to The Hacienda.

Construction effects and mitigation

- 3.5.10 Since the potential daylight and sunlight effects relating to construction works will vary throughout the construction programme and gradually increase to the potential effects identified for the completed development, the interim construction effects have not been assessed quantitatively as it is considered that the completed development represents the worst-case assessment in terms of likely daylight and sunlight.

Operational effects and mitigation

- 3.5.11 A total of 211 windows facing the site serving 164 rooms within the building were assessed for VSC and NSL for daylight and 11 rooms were assessed for APSH for sunlight within the building.
- 3.5.12 Out of the 211 windows assessed for daylight, 63 (30%) meet the BRE guidelines (BRE, 2011) for VSC. For NSL, 92 (56%) of the 164 rooms assessed meet the BRE criteria. For sunlight, 11 (100%) of the 11 rooms assessed meet the BRE criteria for both Winter and Annual APSH.
- 3.5.13 Overall, this baseline scenario is considered a low level of compliance due to the city centre context of the site.
- 3.5.14 In the proposed development scenario, with regard to daylight, out of the 211 windows assessed for daylight, 162 (77%) meet the BRE guidelines (BRE, 2011) for VSC. 152 (93%) of the 164 rooms assessed meet the BRE criteria for NSL. The effects identified are minor adverse in nature and are therefore considered to be not significant in EIA terms. Given the context of the site and nature of effects, no mitigation is considered necessary.
- 3.5.15 For sunlight, 11 (100%) of the 11 rooms assessed meet the BRE criteria for both Winter and Annual PSH. The effects identified are negligible in nature and are therefore considered to be not significant in EIA terms. Given the context of the site and nature of effects, no mitigation is considered necessary.

Residual effects and conclusions

- 3.5.16 The residual environmental effects with the proposed development are deemed to be minor adverse.

3.6 BUILT HERITAGE

Introduction

- 3.6.1 This chapter of the ES assesses the likely environmental effects of the proposed development with respect to built heritage.
- 3.6.2 Although a formal scoping opinion was not received from MCC, they did confirm that they were happy with the approach set out in the EIA Scoping Report (Appendix 4-A, ES Volume III), which was submitted to MCC on 20th October 2021. Historic England responded and its feedback has been taken into consideration in the preparation of the ES Chapter and Heritage Assessment (Appendix 9-A, ES Volume III).
- 3.6.3 The approach taken to the assessment of impact and effects on built heritage has been informed by consultation of sources, research, site visits and application of professional judgement, combined with existing knowledge of the significance and setting of heritage assets within this area of Manchester.
- 3.6.4 In the absence of specific prescribed criteria for the assessment of impacts on built heritage, the methodology for establishing the relative value or importance of heritage assets; the magnitude of change; and the significance of effect has been taken from the Design Manual for Roads and Bridges (DMRB) (2019, LA 106 Cultural Heritage Assessment) and informed by Historic England including Good Practice Advice in Planning Note 2, Managing Significance in Decision Taking in the Historic Environment (March 2015), and Good Practice Advice Note 3 The Settings of Heritage Assets (2017).
- 3.6.5 With reference to guidance set out in the DMRB, the effect on the cultural heritage resource is not significant when the impact does not substantially diminish or enhance the heritage interest of the cultural heritage resource.

Construction effects and mitigation

- 3.6.6 There are temporary effects that may affect the setting and significance of heritage assets during the site clearance, excavation and construction phase. This includes temporary diminution in the quality of the setting of heritage assets arising from the presence of mobile cranes, visible machinery, earthworks and material management, construction activities and construction traffic movements. The risk of such effects will be partially mitigated by embedded mitigation, including a CEMP and measures such as the erection of hoardings to screen activity.
- 3.6.7 The sensitivity of the Briton’s Protection public house (grade II listed) is moderate. The magnitude of change is considered to be medium adverse. Therefore, there is likely to be a temporary adverse effect on this asset which is considered to be moderate adverse and not significant.
- 3.6.8 The sensitivity of 13-17 Albion Street is moderate. The magnitude of change is considered to be medium adverse. Therefore, there is likely to be a temporary adverse effect on this asset which is considered to be moderate adverse and not significant.
- 3.6.9 The sensitivity of GMEX (Manchester Central) (grade II* listed) is high. The magnitude of change is considered to be small. Therefore, there is likely to be a temporary adverse effect on this asset which is considered to be moderate/minor adverse and not significant.
- 3.6.10 The sensitivity of Chepstow House (grade II listed) and Peveril of the Peak Public House (grade II listed) is moderate. The magnitude of change is considered to be small. Therefore, there is likely to be a temporary adverse effect on these assets which is considered to be minor adverse and not significant.

Operational effects and mitigation

- 3.6.11
- The location, siting and form and appearance of the proposed development has been taken into consideration in assessing operational effects.
- 3.6.12
- The sensitivity of the Briton’s Protection public house (grade II listed) is moderate. The magnitude of change is considered to be medium adverse. Therefore, there is likely to be an adverse effect on this asset which is considered to be moderate adverse and not significant.
- 3.6.13
- The sensitivity of 13 -17 Albion Street (grade II listed) is moderate. The magnitude of change is considered to be negligible, resulting in a negligible effect that is not significant.
- 3.6.14
- The sensitivity of GMEX (Manchester Central) (grade II* listed) is high. The magnitude of change is considered to be negligible, resulting in a negligible effect that is not significant.
- 3.6.15
- The sensitivity of Chepstow House (grade II listed) is moderate. The magnitude of change is considered to be negligible, resulting in a negligible effect that is not significant.
- 3.6.16
- The sensitivity of Peveril of the Peak Public House (grade II listed) is moderate. The magnitude of change is considered to be negligible, resulting in a negligible effect that is not significant.

Residual effects and conclusions

- 3.6.17
- No additional mitigation or enhancement over and above that which has been evaluated as part of the proposed development is proposed. The residual effects are therefore the same as reported for the construction and operational phases (i.e., minor to moderate adverse for the construction phase and negligible to moderate adverse for the operation phase). Residual effects are deemed to be not significant.

3.7 GREENHOUSE GAS EMISSIONS

Introduction

- 3.7.1
- The greenhouse gas (GHG) emissions ES chapter assesses the likely environmental effects of GHG emissions associated with the proposed development. In the absence of an industry-wide agreed and tested approach to defining the significance criteria and GHG emissions threshold at the local development site scale, Institute of Environmental Assessment and Management (IEMA) Environmental Impact Assessment Guide to: Assessing Greenhouse Gas Emissions and Evaluating their Significance (IEMA, 2017) guidance has been adopted. This highlights three overarching principles which show all GHG emissions are potentially significant:
 - GHG emissions from all projects will contribute to climate change, the largest inter-related cumulative environmental effect;
 - Consequences of a changing climate have the potential to lead to significant environmental effects on all topics in the EIA Regulations 2017: and
 - GHG emissions have a combined environmental effect that is approaching a significantly defined environmental limit.

Construction effects and mitigation

- 3.7.2
- At the construction stage, GHG emissions associated with the following sources have been assessed:
 - Material extraction, transportation and manufacturing of construction products; and
 - Product delivery to site and the installation process.

- 3.7.3
- The total cumulative embodied carbon associated with the construction of buildings and hard landscaping has been calculated to between 10,000 tonnes of carbon dioxide equivalent (tCO₂e) and 13,300 tCO₂e, allowing for benchmarks for material and construction efficiencies.
- 3.7.4
- The magnitude of effects for the construction phase associated with the proposed development is deemed to be large as it has been assumed that there is no commitment in place to reduce construction stage embodied carbon. As the sensitivity of the receptor (the global atmosphere) is deemed to be high, the effects are of major adverse significance.
- 3.7.5
- The following supplementary construction measures were suggested for the construction stage of both Site A and Site B:
 - Put in place a commitment to reduce lifecycle embodied carbon compared to the business-as-usual baseline. The business-as-usual baseline is defined as the design of the residential or commercial unit using current standard best practice construction materials and techniques. An appropriate baseline should be defined for the proposed development, taking into consideration industry benchmarks set by the Royal Institute of British Architects (RIBA) and the London Energy Transformation Initiative (LETI), and reduction secured through further design refinement;
 - Reduce the demand for materials with a high carbon footprint (such as concrete), especially in the production and transport stages of the lifecycle of the proposed development (e.g. using cement replacement);
 - Where practical, maximise recycled content in other key building and fit-out components (e.g., blockwork, internal plasterboard partitions, floor finishes etc.);
 - Materials used for hard landscaping and street furniture should explore opportunities for high recycled content and bio-based materials;
 - Where practical, maximise use of recycled aggregates in the civil engineering works (e.g. sub-base, pipe bedding etc.);
 - Review opportunities to reduce energy association with construction installation processes;
 - Review opportunities to reduce the number and distance of construction transport trips; and
 - Explore the use of off-site construction to consolidate delivery requirements.

Operational effects and mitigation

- 3.7.6
- At the operation stage, GHG emissions associated with the following sources have been assessed:
 - Embodied carbon for the operation of the built asset over its entire lifecycle, from practical completion to the end of its service life;
 - Energy use of building integrated systems;
 - GHG emissions associated with operational water consumption; and
 - Embodied carbon associated with the demolition and disassembly of the proposed development
- 3.7.7
- Embodied carbon associated with the use (maintenance) stage has been estimated to be approximately 5,100 tCO₂e over the 60-year lifecycle of the proposed development. The magnitude of impacts relating to operational embodied carbon are deemed to be large, as there is no commitment in place to reduce lifecycle embodied carbon. As the sensitivity of the receptor is deemed to be high, the effects are of major adverse significance.

- 3.7.8 It is predicted that cumulative GHG emissions associated with operational energy will be between 2,200 and 3,900 tCO₂e over the 60-year lifecycle of the proposed development. The magnitude of effects relating to operational GHG emissions associated with operational energy are deemed to be medium. Although there is no commitment in place to achieve net zero emissions associated with operational energy by 2050, there is a trend shown towards this due to the fact that a commitment has been made to heat the proposed development using electricity for heating, rather than fossil fuels. As the sensitivity of the receptor is deemed to be high, the effects are of moderate adverse significance.
- 3.7.9 GHG emissions associated with operational water consumption are estimated to be approximately 62 tCO₂e over the lifecycle of the proposed development. The magnitude of effects associated with operational water consumption for the proposed development are deemed to be large as there is no commitments in place to reduce water consumption. As the sensitivity of the receptor is deemed to be high, the effects are of major adverse significance.
- 3.7.10 GHG emissions associated with the end-of-life stage have been estimated by applying appropriate benchmarks based on floor area and the building typologies. GHG emissions associated with the end-of-life stage are estimated to be approximately 35 tCO₂e. GHG emissions associated with the end-of-life stage are deemed to be of large magnitude as there are no commitments in place. As the sensitivity of the receptor is deemed to be high, the effects are of major adverse significance.
- 3.7.11 The following supplementary mitigation measures were suggested for the operational stage of the proposed development:
- Put in place a commitment to reduce lifecycle embodied carbon compared to the business-as-usual baseline. The business-as-usual baseline is defined as the design of the residential or commercial unit using current standard best practice construction materials and techniques. An appropriate baseline should be defined for the proposed development, taking into consideration industry benchmarks set by LETI and RIBA, and reduction secured through further design refinement;
 - Extend the longevity of the materials (e.g., specifying appliances with extended warranty and lifespan);
 - Minimise the use of materials that require more frequent replacement or refurbishment (such as carpets and floor coverings);
 - Explore the use of passive design measures in order to reduce the need for heating;
 - Where any electrical equipment (e.g., oven, white goods etc.) is being installed by the house builder, identify unregulated energy loads and demonstrate reduction through specifying energy efficient equipment;
 - Specify water saving devices, such as low flush toilets and showers to reduce water consumption associated with the proposed development;
 - Specify the use of water meters to measure water consumption; and
 - Explore the feasibility of specifying rainwater harvesting in order to reduce potable water consumption.

Residual effects and conclusions

- 3.7.12 If embodied carbon reduction commitments are put in place that take into account the supplementary mitigation measures, effects are likely to reduce to moderate adverse.
- 3.7.13 If operational energy and embodied carbon reduction commitments are put in place that take into account the supplementary mitigation measures, magnitude of effects may be reduced to small or medium (depending on the reduction committed to). This would reduce significance of effects to moderate adverse.

- 3.7.14 With mitigation measures in place, effects associated with operation phase embodied carbon, operational water consumption and the end-of-life stage are likely to reduce to moderate adverse.

3.8 TOWNSCAPE AND VISUAL IMPACT

Introduction

- 3.8.1 The Townscape and Visual Impact Assessment (TVIA) defines the existing townscape and visual baseline environments; assesses their sensitivity to change; describes the key townscape and visual-related aspects of the proposed development; describes the nature of the anticipated change upon both the townscape and visual environments; and assesses the magnitude and significance of the changes for the construction and operation of the proposed development.

Construction effects and mitigation

Townscape effects

- 3.8.2 The site is located to the south of Manchester city centre at the junction of Albion Street and Great Bridgewater Street. The site is not subject to any statutory townscape designations and is assessed to be of low sensitivity. It is predicted that the main townscape effects during construction would result from:
- General construction activities within the site; and
 - Views of scaffolding, cranes and plant movement.
- 3.8.3 Designed-in mitigation relating to construction activities would include the use of hoardings around the site, controlling the timing of construction activities and locating the storage of plant and materials away from the more visually prominent western edge of the site.
- 3.8.4 Of the townscape receptors (townscape character areas and townscape features) within the study area, none were identified as being significantly affected during construction. At worst, non-significant, moderate/minor adverse effects were identified at the site level.

Visual effects

- 3.8.5 The assessment of visual effects has been informed by computer generated Zone of Theoretical Visibility mapping, verified by field observations from representative viewpoints. It is predicted that the main adverse visual effects during construction would result from:
- Views of general construction activities; and
 - Views of scaffolding, cranes and plant movement.
- 3.8.6 Mitigation relating to construction activities would include the use of temporary hoardings around the site, locating storage areas away from visually prominent locations and minimising the intrusion caused by required lighting.
- 3.8.7 Of the visual receptors (pedestrians, visitors to Manchester city centre and recreational users) within the study area, none were identified as being significantly affected during construction. At worst, non-significant, minor adverse effects were identified for visual receptors.

Operational effects and mitigation

Townscape effects

- 3.8.8 It is predicted that the main townscape effects resulting from the completed development would be:

- Introduction of contemporary residential and commercial buildings to a townscape already defined by commercial buildings and residential apartments; and
 - Improvements to the public realm.
- 3.8.9 Mitigation relating to the completed development activities would include the use of materials that reflects its local setting, appropriate to the type of development for the area, and improvements to the surrounding streetscape.
- 3.8.10 Of the townscape receptors (townscape character areas and townscape features) within the study area, none were identified as being significantly affected by the completed development. At worst, non-significant, minor neutral effects were identified for the Central Area of Change character area, the majority of effects being positive.

Visual effects

- 3.8.11 It is predicted that the main visual effects during operation of the proposed development would result from:
- Views of new residential and commercial buildings; and
 - Lighting associated with the completed development.
- 3.8.12 Mitigation relating to the completed development would include the high-quality design of the buildings, preservation of views of the Briton's Protection public house, enhanced streetscape surrounding the site and lighting designed to minimise light spill and glare.
- 3.8.13 Of the visual receptors (pedestrians, visitors to Manchester city centre and recreational users) within the study area, none were identified as being significantly affected during operation. At worst, non-significant, minor adverse effects were identified for visual receptors.

Residual effects and conclusions

Townscape effects

- 3.8.14 Minor beneficial (not significant) residual effects on townscape character have been identified. These occur principally due to the redevelopment of a car park within Manchester city centre to contemporary residential and commercial buildings. The proposed development will provide high quality design and finishes to buildings within a well-designed and functional layout. Overall, the completed development will contribute positively to the surrounding townscape character and will be reflective of the on-going evolution of the city.

Visual effect

- 3.8.15 No significant residual visual effects were identified. At worst, minor adverse (not significant) residual effects on visual receptors were identified for a total of four receptors as illustrated in Photoviewpoints 4, 5, 11 and 12, shown in Appendix 0-C, ES Volume II. Elsewhere, residual effects range from negligible to minor neutral (not significant). Where visible the proposed development will be experienced as contemporary, high-quality buildings in-keeping with the scale and massing of the surrounding built form located within Manchester city centre.

3.9 CUMULATIVE EFFECTS

- 3.9.1 There are two types of cumulative effects addressed in the ES:
- Interaction effects: the accumulation of different predicted effects generated by the proposed development upon the same sensitive receptors; and

- In-combination effects: the combination of predicted effects from adjacent or nearby scheme(s) together with those predicted for the proposed development.

Interaction cumulative effects

- 3.9.2 An assessment has been undertaken of the potential for interactive cumulative effects to arise – that is, whether individual receptors could be subject to the interaction of more than one effect simultaneously, leading to more significant effects on those individual receptors.
- 3.9.3 During construction, moderate adverse interactive effects have been identified in relation to the Briton's Protection Public House and minor adverse interactive effect have been identified in relation to the Peveril of the Peak Public House.
- 3.9.4 During operation, no interactive cumulative effects were identified.

In-combination cumulative effects

- 3.9.5 An assessment has also been taken, within each discipline, of the potential for the proposed development to give rise to cumulative effects when viewed "in-combination" with other developments.
- 3.9.6 During construction, significant in-combination cumulative effects have been identified for the following receptors:
- Atmospheric GHG concentration.
- 3.9.7 During operation, significant in-combination cumulative effects have been identified for the following receptors:
- Atmospheric GHG concentration.

4 CONCLUSIONS

4.1 SIGNIFICANT RESIDUAL EFFECTS

- 4.1.1 The technical assessments have concluded that all adverse effects (with the exception of certain built heritage, noise and vibration, greenhouse gas emissions and townscape and visual effects) will be reduced to an acceptable level through the implementation of mitigation measures. However, it should be noted that all contributions to greenhouse gas emissions are, by definition, classed as significant.
- 4.1.2 All significant residual effects associated with the proposed development are outlined in Table 4-1.

Table 4-1 Summary of significant residual effects

Topic	Receptor	Effect	Residual significance
Effects during construction			
Noise and Vibration	The Briton's Protection Public House	Construction Noise	Minor to short-term moderate adverse
		Construction Vibration	Negligible to short-term moderate adverse
	The Jurys Inn Hotel	Construction Noise	Negligible to short-term moderate adverse
		Construction Vibration	Negligible to short-term moderate adverse
Air Quality	No significant residual effects		
Wind Microclimate	No significant residual effects		
Daylight and Sunlight	No significant residual effects		
Built Heritage	No significant residual effects		
Greenhouse Gas Emissions	The global atmosphere	GHG emissions associated with the construction phase	Moderate adverse. Effects are long-term
Townscape and Visual Impact	Townscape features and character of the site	Site clearance and general construction activities in addition to views of scaffolding, cranes and plant movement.	Moderate/minor adverse
In-combination cumulative effects during construction			
Noise and Vibration	No significant in-combination cumulative effects.		
Air Quality	No significant in-combination cumulative effects.		
Wind Microclimate	No significant in-combination cumulative effects.		
Daylight and Sunlight	No significant in-combination cumulative effects.		
Built Heritage	No significant in-combination cumulative effects.		
Greenhouse Gas Emissions	The global atmosphere	GHG emissions resulting from the construction of the proposed development	Moderate adverse. Effects are long-term
Townscape and Visual Impact	No significant in-combination cumulative effects.		
Effects during operation			
Noise and Vibration	No significant residual effects		
Air Quality	No significant residual effects		
Wind Microclimate	No significant residual effects		

Topic	Receptor	Effect	Residual significance
Daylight and Sunlight	No significant residual effects		
Built Heritage	No significant residual effects		
Greenhouse Gas Emissions	The global atmosphere	Embodied carbon associated with the in-use stage for the proposed development.	Moderate adverse. Effects are long-term.
		GHG emissions associated with operation energy for the proposed development.	With supplementary mitigation measures in place, residual effects may be reduced to moderate adverse (depending on the level of energy reduction is achieved). Effects are long-term.
		GHG emissions associated with operational water.	Moderate adverse. Effects are long-term.
		GHG emissions associated with the end-of-life stage.	Moderate adverse. Effects are long term.
Townscape and Visual Impact	No significant residual effects		
In-combination cumulative effects during operation			
Noise and Vibration	No significant in-combination cumulative effects.		
Air Quality	No significant in-combination cumulative effects.		
Wind Microclimate	No significant in-combination cumulative effects.		
Daylight and Sunlight	No significant in-combination cumulative effects.		
Built Heritage	No significant in-combination cumulative effects.		
Greenhouse Gas Emissions	The global atmosphere	GHG emissions resulting from the operation of the proposed development	Moderate adverse. Effects are long-term
Townscape and Visual Impact	No significant in-combination cumulative effects.		

4.2 SUMMARY

- 4.2.1 The majority of environmental effects associated with the proposed development are deemed to be non-significant with embedded and supplementary mitigation measures in place. However, there are some effects that are still deemed to be significant with mitigation measures in place.
- 4.2.2 **Construction:**
- 4.2.3 The following significant adverse residual effects (i.e. taking into account supplementary mitigation measures) have been identified during the construction phase of the proposed development:
- **Noise and Vibration:** construction noise and construction vibration effects on the Briton's Protection Public House and the Jurys Inn Hotel;
 - **Greenhouse gas emissions:** emissions associated with the construction phase; and
 - **Townscape and visual impact:** effects relating to townscape features and the character of the site.
- 4.2.4 When considering in-combination cumulative effects during construction, long-term moderate adverse effects were identified in relation to GHG emissions.

4.2.5 Operation

- 4.2.6 The following significant adverse residual effects (i.e. taking into account supplementary mitigation measures) have been identified during the operation phase of the proposed development:
- **Greenhouse gas emissions:** Greenhouse gas emissions associated with embodied carbon, operational energy, operational water, the in-use stage and the end of life stage for the proposed development.
- 4.2.7 When considering in-combination cumulative effects during operation, long-term moderate adverse effects were identified in relation to GHG emissions.

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