



OVG Manchester

Environmental Statement – Non Technical Summary

March 2020

Contents

1	Introduction	3
2	Description of the Proposed Development	7
3	Outline of the main alternatives considered by the developer	10
4	Air Quality (ES Chapter 6)	16
5	Ground Conditions (ES Chapter 7)	17
6	Socio-Economic Impacts (ES Chapter 8)	18
7	Lighting (ES Chapter 9)	19
8	Noise and Vibration (ES Chapter 10)	21
9	Townscape and Visual Impact (ES Chapter 11)	24
10	Traffic and Transport (ES Chapter 12)	27
11	Water Quality, Drainage and Flood Risk (ES Chapter 13)	28
12	Wind Microclimate (ES Chapter 14)	29
13	Climate Change	30
14	Summary of Proposed Mitigation	33
15	Type 1 Cumulative Effects (ES Chapter 17)	35

1 Introduction

- 1.1 This Environmental Statement ('ES') accompanies an application for Full Planning Permission for a new multi-use indoor arena, together with supporting retail and leisure facilities, back-of-house and support functions, public realm, cycle parking, access and associated works. The Applicant is OVG Manchester Limited.
- 1.2 This ES sets out the findings of an Environmental Impact Assessment ('EIA') carried out in respect of the development of the Site.
- 1.3 The Proposed Development seeks permission for the following description of development:
"Development of a multi-use arena (Class D2) with a partially illuminated external facade together with supporting retail uses (Classes A1, A3 and A4), associated highways, access, servicing, landscaping, public realm and other associated works."
- 1.4 The EIA has been carried out in accordance with the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended) ('the EIA Regulations') and best practice guidance.
- 1.5 The non-technical summary ('NTS') is a standalone document and is required under the EIA Regulations.

Purpose of the Environmental Impact Assessment and Non-Technical Summary

- 1.6 The purpose of an EIA is explained by the Government in the National Planning Practice Guidance at paragraph 002 (Reference ID: 4-002-20140306), which sets out:
"The aim of Environmental Impact Assessment is to protect the environment by ensuring that a local planning authority when deciding whether to grant planning permission for a project, which is likely to have significant effects on the environment, does so in the full knowledge of the likely significant effects, and takes this into account in the decision making process."
- 1.7 On this basis, an EIA only applies to those projects which are likely to have a significant effect on the environment and these are typically projects of a larger scale.
- 1.8 In simple terms, an EIA is an information gathering exercise in relation to the effect that the Proposed Development may have on the local environment when compared to the existing conditions.
- 1.9 Conducting an EIA is a systematic process, which leads to a final report, the ES.
- 1.10 This NTS is designed to be read on its own but forms part of the ES. It explains the environmental implications of the Proposed Development to the public, informing them in non-technical language, and allowing them to decide whether they would like more detail on the proposals.

Environmental Impact Assessment Process

- 1.11 The first step is understanding if the Proposed Development meets the criteria set out within legislation, which means that further consideration should be given to if it comprises an EIA development. The legislation sets out different 'schedules' of projects and how the EIA should be carried out.
- 1.12 A Proposed Development may then go through a 'Screening' and/or a 'Scoping' process. This is the process whereby an Applicant may submit a request to the Local Planning Authority for a formal opinion as to whether they consider the Proposed Development to be meet the criteria for an EIA and, if so, what technical topics it considers to be relevant to the EIA.

- 1.13 If an EIA is determined to be required, the Applicant will prepare an ES, which sets out the findings from the technical assessments undertaken. The ES is then submitted to the Local Planning Authority as part of an application for Planning Permission.

Assessment Methodology

Scoping

- 1.14 An EIA Screening and Scoping Report was prepared by Deloitte Real Estate with input from the technical consultant team for the project. The EIA Screening and Scoping Report was submitted to Manchester City Council ('MCC') as the Local Planning Authority on 26 November 2019.
- 1.15 A formal EIA Scoping Opinion was issued by MCC 15 January 2020. It set out a number of recommendations, which have been robustly addressed in ES Appendix 2.3 EIA Scoping Opinion Summary of Comments and Responses. As part of this EIA Scoping Opinion dialogue, it was agreed that Climate Change would be considered as part of the ES and now forms a standalone chapter, Chapter 15 Climate Change.

Technical Topics not included in the Environmental Impact Assessment

- 1.16 The Scoping process identified a number of technical topics where significant environmental effects as a result of the Proposed Development would be unlikely and would not be assessed further within the EIA process.
- 1.17 These topics are:
- *Agricultural Circumstances*
 - *Archaeology*
 - *Aviation*
 - *Built Historic Environment*
 - *Daylight and Sunlight*
 - *Ecology*
 - *Television, FM Radio and DAB Radio Reception*
 - *Human Health*
- 1.18 Further information detailing why each of these technical topics were scoped out of the EIA can be found in Appendix 2.1 EIA Screening and Scoping Report.

Approach to Technical Studies

- 1.19 Various technical studies were commenced at an early stage in the development process. The findings of the baseline (existing) environmental studies have played an important role in the design of the Proposed Development by defining the environmental sensitivities, constraints and opportunities associated with the Site.
- 1.20 Design team reviews, attended by members of the project team, were held throughout the pre-application process. These reviews provided a valuable forum for the exchange of information and ensured that the design team was fully aware of the environmental constraints and opportunities, and of the interactions between disciplines. Meetings were also held with Manchester City Council as the Local Planning Authority, as well as pre-application discussions with technical consultees.
- 1.21 The technical studies have been undertaken in accordance with current best practice. Specific guidance used is referenced within each of the respective technical chapters, with a reference list at the end of each chapter.
- 1.22 Each chapter takes a standard approach, which ensures consistency. This structure is broadly as follows:

Table 1.1: Structure of ES Technical Chapters

Technical Chapter Structure	
Introduction	Each technical chapter begins with an introduction providing context to the assessment work.
Policy Context	This section includes a summary of legislation (laws) and of national and local policies relevant to the environmental discipline in the context of the Proposed Development and the ES.
Assessment Methodology & Significance Criteria	This section describes the method or approach employed in the assessment of impacts, the criteria against which the significance of effects has been evaluated, the sources of information used and any technical difficulties encountered. Relevant legislation is also identified.
Baseline Conditions	This section describes and evaluates the existing environmental conditions i.e. the current situation and anticipated changes over time assuming the Site is not developed. This is a critical part of the EIA process as it provides a measure against which potential environmental effects can be assessed.
Identification and Evaluation of Key Impacts	This section identifies the likely significant effects on the environment resulting from the Proposed Development. A description of the likely effects of the Proposed Development and an assessment of their predicted significance is provided in relation to the discipline being considered. The assessment of effect significance has been undertaken using appropriate quality standards. Where no such standards exist, the judgments that underpin the attribution of significance are described. The guidelines, methods and techniques used in the process of determining significance of effects are contained within each of the technical chapters presented.
Mitigation Measures	One of the main aims of the EIA process is to develop suitable mitigation measures to avoid, reduce or compensate for any significant adverse (negative) effects of a project. This section of each technical chapter describes the measures which would be implemented to mitigate potential adverse effects. Where possible, enhancement measures have also been proposed.
Cumulative Effects	This section considers the cumulative (combined) effects of the Proposed Development with any other committed developments identified within the vicinity of the Site. Any likely significant effects on the environment arising in this respect are set out in this section. There are two distinct types of cumulative effects: Type 1 - Cumulative effects are the effects on identified receptors arising from a combination of impacts related to the Proposed Development. Type 2 - Cumulative effects are those that arise from incremental changes caused by other consented or reasonably foreseeable activities ('committed developments') together with the Proposed Development.
Residual Effects	The residual effects, i.e. the remaining effects of the Proposed Development assuming implementation of the proposed mitigation measures, have been estimated and presented. The methods used to make these estimates are described and proposed methods of treatment for any residual effects have been identified and quantified where possible.
Summary	Each technical chapter concludes with a brief summary outlining the potential residual effects of the Proposed Development.

Objectivity

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

Structure of the NTS

- 1.24 The remainder of this NTS outlines the Proposed Development in non-technical terms and then provides a summary of each technical chapter using non-technical language.

Further Information

- 1.25 More detailed analysis of the findings described within the NTS can be found within the compiled ES and other documents submitted in support of the Planning Application.
- 1.26 The ES and other application documents are available for public viewing on Manchester City Council's Public Access website at the following address:
<http://pa.manchester.gov.uk/online-applications>
- 1.27 The ES may be purchased in volumes, the costs for which are set out below:
- Volume 1: Non-Technical Summary - £15
 - Volume 2: ES Main Text and Figures - £150
 - Volume 3: ES Appendices - £150
 - Full Copy (Volumes 1, 2, and 3) of the ES on a CD - £15
- 1.28 For copies of any of the above, please contact the Manchester Planning Team at Deloitte Real Estate:
OVG Manchester - Planning and EIA
Deloitte Real Estate
2 Hardman Street
Manchester
M3 3HF

2 Description of the Proposed Development

Where

- 2.1 The Site is approximately 4.46 ha. and is located immediately to the north of the Etihad Stadium within the Etihad Campus in East Manchester; an area which has seen significant positive physical, economic, social and environmental transformation during the last three decades. The Site is located within the Ward of Ancoats and Beswick in Manchester.
- 2.2 The Site is currently used as an over-spill surface level car park for those attending events associated with the Etihad Stadium; it is estimated to have capacity for 500 car parking spaces.
- 2.3 The perimeter of the Site is populated with informal, dense shrubbery and trees, and secured with a tall mesh fence. There are no existing buildings on the Site.

What

- 2.4 The Proposed Development is for a new indoor arena with a capacity of 20,000 (extendable to 23,500 for certain events/formats), comprising of 68,608 sq. m. of floorspace.
- 2.5 The arena will be able to host different event types. Flexibility has been built into the design to allow for different modes to ensure the arena can regularly host events, putting Manchester on the world stage for entertainment and leisure.
- 2.6 Use of retractable seating allows for simple efficient changes between modes while offering the best possible viewing experience for fans. The layout would be flexible to accommodate a range of events, which could include music, sport, performances, awards and other live entertainment. Events could be held during the day and evening, throughout the year.
- 2.7 The design incorporates 'destination spaces' which provide high-quality entertainment facilities set out across five floors, with access from both Ground Floor and First Floor levels.

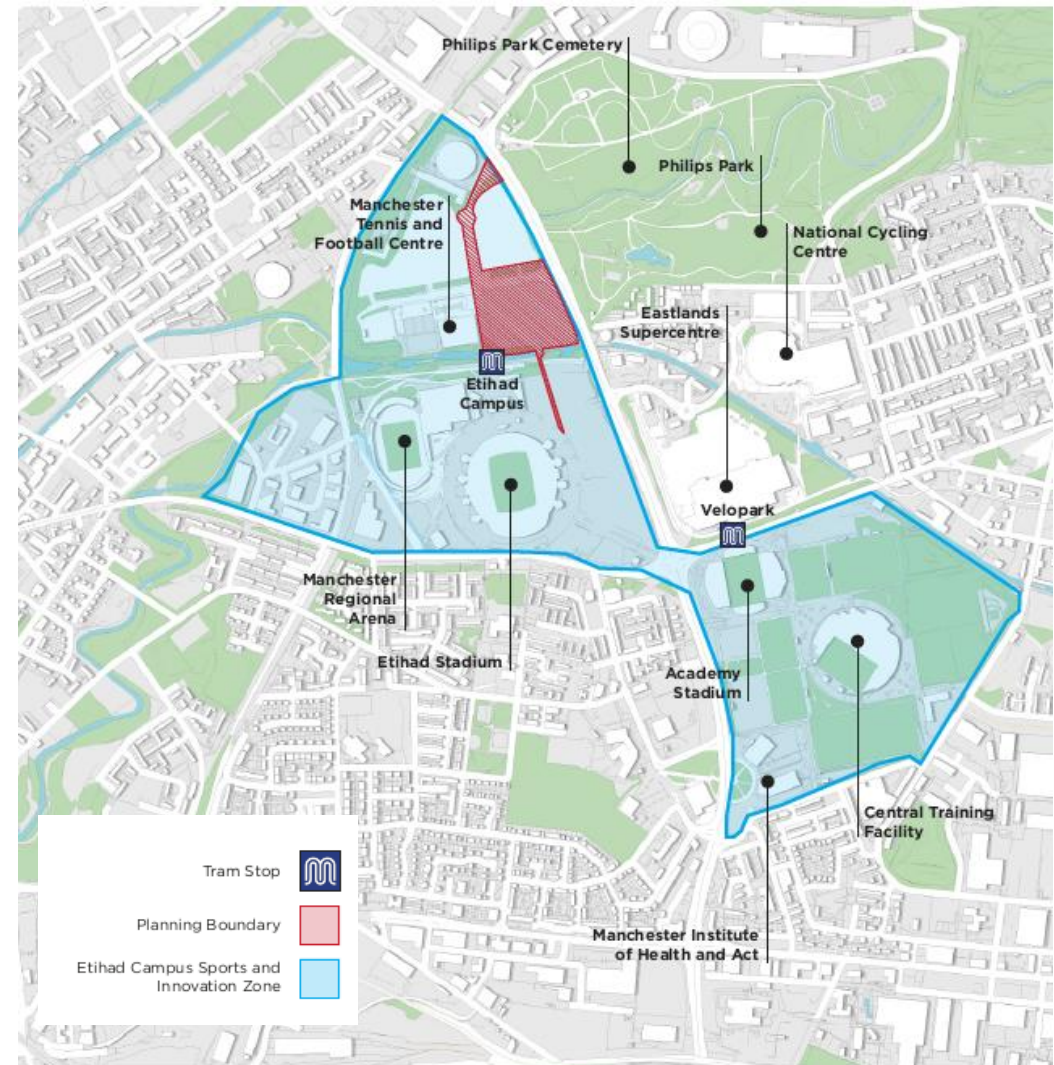


Figure 1.1: Site Location and Planning Boundary (Source: Populous, 2020)



Figure 2.2: Indicative Visual of Internal 'Bowl' of the Proposed Development (Source: Populous, 2020)

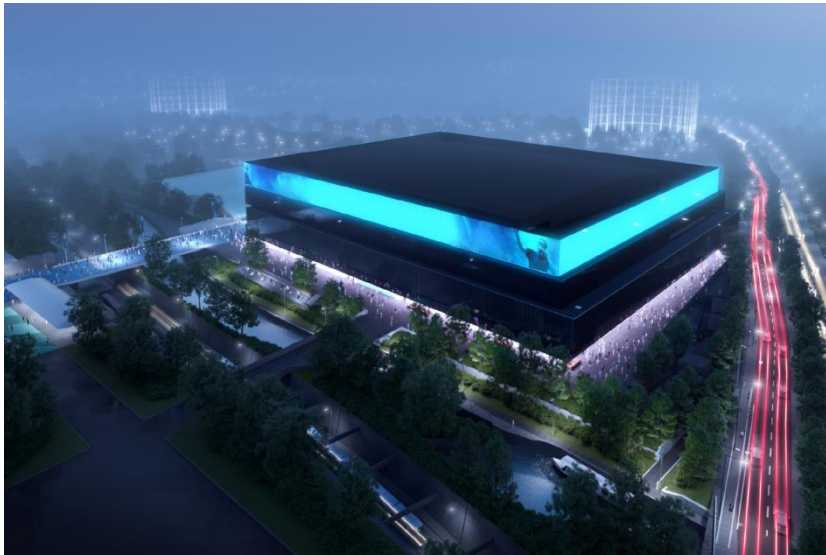


Figure 2.3: Indicative External Night-Time image of the Proposed Development (Source: Populous, 2020)

- 2.8 Through the provision of a range of facilities including food and beverage offers, bars, retail concessions, pop-up retail spaces and lounges, fans are encouraged to arrive earlier and enjoy the range of facilities available at the venue. This increases dwell time and creates a vibrant atmosphere, which is an important factor in boosting quality of experience, revenue and managing crowd flows.
- 2.9 Further ancillary spaces and functions to support the effective operation of the arena are also proposed for artists, security, venue operation, and logistics including: offices and meeting rooms; communications rooms; plant and storage; bin storage; kitchens, canteens and catering support; event control rooms; a multi-faith room; and staff changing facilities and lockers. WCs are included on all floors and are provided in accordance with venue capacity and accessibility standards requirements.

Design

- 2.10 The scale and massing of the arena responds directly to the Site context; it does not exceed the height of the existing surrounding buildings and makes effective use of a previously developed site in a strategically important location.
- 2.11 The form of the building is simplistic, yet iconic, with a distinctive form allowing for a simple diagram of the building to be used to give the venue a strong place making identity.
- 2.12 The horizontal layering of the stacked boxes create visual interest whilst following the function of the building, with different space requirements at each level.
- 2.13 The design delivers a high quality façade treatment, which includes LED screens and architectural lighting to the upper box and box soffits, integrated seamlessly into the structure of the Proposed Development.
- 2.14 The materials used for the façade of the Proposed Development have been chosen to contrast with the solid plinth and enable the form of an iconic, yet simple, acoustically effective development.
- 2.15 The design also allows for dynamic façade activation to the upper box and the building soffits, with the flat surface on each façade being viable as display areas for sponsors, brand activation and event activation.
- 2.16 In delivering the intention for the arena to become a beacon of Manchester's rapid transition to a zero-carbon city, the scheme has been designed with acknowledgement for the principles of the circular economy to reduce embodied carbon.
- 2.17 Whilst it is acknowledged that functional requirements of the building have driven the choice of materials, steps will be taken to reduce the impact within this remit. The key actions taken include material optimisation to minimise the use of new materials, exploring opportunities to use recycled materials to reduce embodied carbon. In addition, the construction materials have also been responsibly and locally sourced where possible.

Public Realm

- 2.18 The Proposed Development presents the opportunity to improve the frontage along the Ashton Canal. The public realm has taken into account the key routes through and around the Site, with the primary pedestrian access coming from Joe Mercer Way. The design also enables access to the Ashton Canal, which creates activity and interest and encourages people to walk to the Site.
- 2.19 Tree and shrub planting, external seating areas, decking and paving have all been designed carefully to direct crowd flows, but also create a strong sense of place and an environment which is suitable for both event days and non-event days. Wildflower planting is also proposed along the Ashton Canal towpath, with a green screen added along the boundary of the podium level to seamlessly link the Proposed Development into the existing Site and to enhance biodiversity value. External seating areas, decking and paving with steps down from the podium level to the Ashton Canal towpath will also help to activate this environment.
- 2.20 Two-stream litter bins will also be provided throughout the public realm podium areas at frequent intervals, with residual waste and dry mixed recycling.

Inclusive design

- 2.21 The Proposed Development is inclusively designed to comprise of an accessible environment for all users. It has been designed for ease and surety of movement, ensuring that all users are, from the outset, able to access all that the venue has to offer safely, with dignity, comfort, convenience and confidence. In doing so, the venue aims to achieve world-class inclusive access standards including Changing Places provision.
- 2.22 Accessibility and inclusivity is at the heart of the design, which includes consideration of the following: internal and external circulation space and entrances; gradients and ramp access; stairs, lifts and escalators; sanitary and changing facilities; internal finishes, fixtures and fittings; signage and wayfinding; a multi-faith room; an assistance dog spending area; and, sound reinforcement and hearing enhancement systems.

3 Outline of the main alternatives considered by the developer

- 3.1 Regulation 18(3) and Paragraph 2 of Schedule 4 of the EIA Regulations requires the Applicant to provide an outline of the reasonable alternatives studied and an indication of the main reasons for the choice made, including a comparison of the environmental effects.
- 3.2 The form of the Proposed Development has been influenced by a range of factors, including location, surrounding land use and input from Manchester City Council, Statutory and Non-Statutory Consultees and other stakeholders.
- 3.3 The principal land use and siting options explored and the reasoning for the selection of the current design for the Proposed Development are considered here.
- 3.4 Four options have been considered:
 - The 'do nothing' alternative where the Proposed Development is not progressed;
 - Alternative uses for the Site;
 - Alternative locations for the Proposed Development; and,
 - Alternative design/layout for the Proposed Development in the context of the design evolution.

The 'do nothing' alternative

- 3.5 The 'do nothing' scenario refers to the option of leaving the Site in its current state, therefore an overspill car park occasionally used for events at the Etihad Arena.
- 3.6 The area has been identified as a key regeneration priority for the Council, with the New East Manchester Corporation Ltd being formed in 1999 to guide the regeneration of the area ahead of the Commonwealth Games in 2002. Subsequently a number of regeneration initiatives have looked to build upon the success of the Commonwealth Games, first as the City of Manchester Arena and then as the home-ground of Manchester City Football Club.
- 3.7 Since 2002, the Etihad Stadium has been the beacon of regeneration for East Manchester. The pace of economic growth within Manchester over the last ten years along with the ongoing investment from the City Council, the Abu Dhabi United Group and other partners, such as Sport England, has strengthened the focus of the Etihad Stadium and its environs as a focus for new investment and job growth in East Manchester.
- 3.8 This has included the delivery of the City Football Academy, which transformed 75 acres of reclaimed former industrial land into the world's leading training ground and one of the world's best elite performance facilities. Together with the expanded Etihad Campus' existing array of sports and community facilities, the project has delivered jobs and training opportunities for local residents and a new community hub incorporating sports and education facilities, in addition to the Manchester Institute of Health and Performance (MIHP), which is a world-class centre for scientific research, analysis and treatment.
- 3.9 Central to the long term vision for the Etihad Campus and the wider area has been the ambition to establish it as a place to drive forward the development of a globally competitive sport, leisure and recreation offer. Over the last 15 years the loss of the opportunity for Manchester to host the first Regional Casino, aligned with the deep economic recession of 2008 and 2009, thwarted any opportunity for the Etihad Campus to fulfil that long term ambition to host a globally competitive leisure and recreation offer.

- 3.10 In MCC's Manchester Core Strategy 2012 it is set out that East Manchester remains a major economic driver and centre of employment for the City and the conurbations and has a number of key advantages including good vehicle access, good public transport linkages and the availability of large flexible sites. Notably it notes land around the Etihad Stadium to the north should be a focus for development and that developments which "support the overall vision for this major regeneration initiative on sites within the general environs of Eastlands will be appropriate, provided they do not prejudice other policies within the plan."
- 3.11 The Council's ambitions to develop the Site is further stated in the Eastlands Regeneration Framework ('ERF') where the Site as being situated in the 'Etihad Campus', to the north of the Etihad Stadium and is considered to be a key regeneration priority.
- 3.12 The Eastlands Regeneration Framework (ERF) was originally endorsed in 2011 which shaped and guided investment and development in East Manchester. It was updated in 2017 and 2019 and a further draft for consultation of the document was published in. For clarification, the ERF sets out environmental, social, design and economic objectives which are relevant to the attainment of the regeneration of the East Manchester area which is supported by existing planning policy. It is not a planning policy document and it is not a site allocations document. As such this document has the status of a "Local Development Document" but not a "Development Plan Document" and should not be considered or viewed as planning policy, and does not set out a series of tests to be passed.
- 3.13 The role of the ERF is to seek to guide the content of planning applications so that they have in mind the objectives for East Manchester. Throughout the various iterations of the ERF, and through the thirty-year journey of transformation of East Manchester, the Etihad Campus has consistently been a major economic driver in its own right within a city region and national context. Successive Regeneration Frameworks have identified the Etihad Campus as a place to drive forward the development of a globally competitive sport, leisure and recreation offer. Over the last ten years' significant new investment has been made to deliver new facilities that benefit the community with new local leisure and educational developments being part of an integrated approach to the transformation of the area.
- 3.14 The 2019 draft ERF was presented to the Council's Executive Committee in March 2019 for consultation. Following consultation, in July 2019 the Executive Committee resolved to delegate authority to the Strategic Director – Growth & Development, in consultation with the Leader of the Council and the Executive Member for Housing & Regeneration, to approve once certain matters have been addressed, including the requirement for the draft ERF to reference the recently announced Carbon Reduction targets. At the time of writing, the revised version to address these issues has not been published.
- 3.15 In its current state the Site does not realise its economic or social potential as an infrequently used overspill car park. This use as an overspill car park is also contrary to the Council's commitment to increasing and promoting the use of sustainably transport and to improve air quality emissions around key roads through reducing vehicle movements. In this way, the redevelopment of the Site could lead to a more efficient, employment generating use on previously development land.
- 3.16 The Site has therefore been identified for regeneration priority by the Council for a significant number of years, and is considered appropriate for development which utilises the Site's locational benefits and contributes to the success of Eastlands.

Alternative uses

- 3.17 In planning policy terms, the Site is already identified in Manchester's Unitary Development Plan (1995) – Sub Area 7 – Sportcity Saved Policy EM11 as: "*a major focus for regeneration activity on previously developed land. It is located in a strategic position at the heart of East Manchester with excellent infrastructure and proposed infrastructure links to the City Centre, adjacent areas and the national motorway network.*" It goes on to state that: "the area fronting the Alan Turing Way is suitable for a mix of uses including a hotel, leisure and other commercial uses."
- 3.18 Manchester's Core Strategy (2012) builds on this by identifying the Etihad Campus as a location "*suitable for a major sports and leisure visitor destination with complementary commercial, retail and hotels.*" It outlines the requirements of new development at the Eastlands Strategic Employment Location: to broaden

the activities in the area to ensure development opportunities secure the wider regeneration of the surrounding area and deliver maximum benefits for the community.

- 3.19 Policy EC7 identifies two sites as a focus for development, one of which is the land around the stadium including the “Collar Site” which “provides an opportunity for a leisure, recreation and entertainment visitor attraction of national significance”. A landmark design will be key to delivering such a prestigious development which, together with the existing developments within Eastlands, will not only provide a sense of place but will also ensure integration with the surrounding community. Developments that are predominantly tourism / leisure based, including hotels and food and drink will be appropriate together with ancillary retail required to support the principal uses. Developments that are predominantly tourism / leisure based, including hotels and food and drink will be appropriate together with ancillary retail required to support the principal uses. This Policy therefore sets the principle of further leisure development within Eastlands.
- 3.20 Further to the adopted Core Strategy, the 2017 ERF specifically identified the Site as being in an area where development should encourage activity all-year round through uses such as retail and hotels, and uses which may also serve the evening economy. In the 2019 update to the ERF the Site was again identified for regeneration, in particular for a leisure use with a new indoor arena and a multiplex cinema. It is considered that a large-scale leisure use would bring many benefits to the local area including employment and local expenditure, and the redevelopment of a longstanding regeneration site. In addition, the location of the Site in proximity to the Etihad Arena and other sporting uses, as well as the previous Gas Works and Mining Operations in the area make an arena, a less sensitive use, an ideal use. During the construction phase the proposed leisure use will have an environmental impact, as would any type development. However, it is considered that the overall benefits from the operational use mitigates any short-term construction impacts.
- 3.21 The proposed leisure use, and more specifically the proposed arena use is therefore considered appropriate for the Site and is supported in local planning policy and within MCC regeneration guidance. On this basis no alternative uses are considered further as part of this ES.

Consideration of alternative locations

- 3.22 The planning application is accompanied by an extensive sequential assessment, which details why the Site is considered the only viable option within the appropriate ‘area of search’ to accommodate the Proposed Development.
- 3.23 Paragraph 85 of the NPPF directs these types of uses to city/town centre locations first to seek to protect the vitality and viability of centres, then edge of centre locations, and only if suitable sites are not available (or expected to become available within a reasonable period) should out of centre sites be considered. When considering out of centre proposals, preference should be given to accessible sites which are well connected to the centre.
- 3.24 In policy terms, an arena is classified as a ‘main town centre use’. The Etihad Campus as a location is, in planning policy terms, an out-of-centre location (notwithstanding its location within the Regional Centre); therefore, a sequential test has been undertaken in accordance with NPPF Paragraph 86 to identify and evaluate the suitability and availability of sites for an arena, within or on the edge of Manchester City Centre and other Greater Manchester Town Centres (the appropriate area of search).
- 3.25 OVG (an international arena operator) has identified Manchester as their preferred location for their first arena in the UK – reflecting the wider market interest from international entertainment operators and investors in Manchester. The decision to locate in Manchester has been underpinned by detailed analysis as set out in Section 10 of the Planning Statement and also within the ‘UK Large Arena Market and Growth Scenarios 2018-2040’ document prepared by ekosgen and ‘The Economic Impact of Two Arenas in Manchester’ prepared by ekosgen.
- 3.26 OVG’s aspiration is to deliver the best arena in Europe. To achieve this, the location of the arena is key. OVG’s requirements are for a site which has:
- access to major public transport;
 - international connectivity;
 - the capability of being sufficiently high profile (for example, it is associated with other world class institutions);

- adds to the overall economic functioning and vibrancy of the City as determined through contribution to the delivery of Regional/City Economic and Planning Priorities; and,
 - the ability to deliver an additional visitor experience.
- 3.27 Following the initial identification of 73 potential sites (the “long list”), when assessed against OVG’s broad site suitability and availability criteria, 61 of these were discounted as unsuitable or unavailable to accommodate an arena. An example of the reasons for discounting sites include the site being too small to accommodate the minimum site area required (2 ha.) or being unavailable due to alternative proposals progressing on site.
- 3.28 The remaining 12 sites (the “short list”) were considered against the detailed site criteria including the appropriateness of each site to accommodate a large arena, accessibility and connectivity, market assessment and viability, availability and contribution to the delivery of economic and planning priorities. The three sites tested which are more central than the Etihad Campus in policy terms (Piccadilly Trading Estate, Pomona Island and Stockport Mayoral Development Corporation) can all be discounted based on these detailed site criteria.
- 3.29 The remaining nine sites are all in out-of-centre locations (and include the Etihad Campus). NPPF paragraph 87 states that when considering out of centre proposals, preference should be given to accessible sites which are well connected to the town centre. Therefore, the assessment of these shortlisted out-of-centre sites was to determine whether the Etihad Campus is the best location against the defined criteria relative to the other nine non-sequentially preferable sites
- 3.30 The analysis confirms the Etihad Campus as the optimum location as it satisfies the most criteria when assessed in detail:
- Appropriateness of site to accommodate an arena – the Etihad Campus is an appropriate size and shape to accommodate an arena of the scale proposed. The Campus also contains existing complementary uses and major events already take place in this location. No other site considered has the same cluster of activities nearby.
- Accessibility and connectivity – the Etihad Campus is an accessible site which is well connected to the centre by non-car modes. It has good existing pedestrian linkages to the city centre and contains a Metrolink stop which provides a direct link to Manchester Piccadilly Station, which provides an onward rail connection to Manchester Airport. On match days, up to 40% of visitors (or approximately 20,000) arrive by non-car modes, underpinning the opportunity afforded by this location for sustainable transport. Whilst some of the other sites tested also have good accessibility, none can demonstrate an existing capability to provide accessibility by non-car modes for the scale of visitors proposed.
 - Market assessment and viability – there would be no usual or complex constraints to the development of an arena on site. The Etihad Stadium and Campus is a world renowned sports and leisure destination offering brand association for an arena use. The development of an arena at the Etihad Campus is complementary to this cluster of existing uses and will deliver a globally competitive environment and add value to the destination that the Etihad Campus has established over the last ten years. No other site considered has the same potential brand association or complementary cluster of uses.
 - Availability within a reasonable timeframe – the Etihad Campus is capable of delivering an arena within the required timescales. Most of the other sites considered would either require assembly or are unavailable due to alternative proposals being progressed.
 - Contribution to the delivery of Regional/City economic and planning priorities – the Draft 2019 ERF highlights that the Etihad Campus has the capacity to respond to and host significant new opportunities for a globally competitive leisure and recreation offer, which if secured, would deliver key benefits to residents through investment and jobs. It will also support MCC’s vision for East Manchester (as outlined in the Core Strategy) to broaden the activities in the area to ensure development opportunities secure the wider regeneration of the surrounding area and deliver maximum benefits for the community. For almost all the other sites considered, planning policy does not support leisure uses of this scale.

- 3.31 The sequential analysis concludes that the Etihad Campus is suitable, available and viable for the proposed arena development and is an accessible site which is well connected to the centre by non-car modes. Furthermore, an arena in this location would enhance the existing leisure offer at the Etihad, exploiting the latent economic capacity of the Campus and further promoting this destination as a world class sporting and leisure destination.

Alternative design/layout

- 3.32 The optimum function of the arena is paramount to its success, and the function has therefore been a key factor in developing the form of the Proposed Development. In addition to the specific use as an arena, the design has developed from the technical requirements to deliver the client's brief for a world-class indoor arena with a typical capacity of 20,000 visitors but with the potential to accommodate 23,500 visitors for certain events and arena configurations.
- 3.33 First consideration is given to the Site's context due to the differing topographies and the need for level access into the Proposed Development as well as servicing access. This, alongside the required space for crowd modelling, has determined the positioning of the Proposed Development within the Site.
- 3.34 Externally, the form of the arena has been designed to step in and out, which responds to the size of the internal spaces and creates partial canopies for pedestrians to shelter under whilst also adding prominence to the main entrance. The result is a 'stacked box' appearance.
- 3.35 The layout and orientation of the Proposed Development has been considered in terms of microclimate impacts, including the existing wind environment, to provide a form that ensures a suitable environment for users of nearby public realm and amenity spaces.
- 3.36 At the outset a traditional bowl design was considered, creating a curved design. Upon further analysis it was established that in order to reach the minimum requirements of the venue of the desired capacity the circulation spaces would become overly complex as well as an inefficient design that failed to utilise the changes in topography.
- 3.37 In addition to the 'bowl' design, a more uniform and linear form was considered; the simple linear form was considered to create a strong identity and was lifted above the remaining pedestrian routes around the lower concourse level to give a contrast in scale between figure and form. The large flat facade surfaces are intended to be a viable display area for potential sponsors, brand activation and event activation. The linearity of the design acts as an ideal canvas for such activation. However, internally this simple linear form would lead to volumes that were not fit for intended purpose. In addition, due to technical requirements the arena must not have windows at the location of the event space which has also resulted in the layout of the Proposed Development being arranged to ensure the active frontages overlook the pedestrianised areas such as the adjacent canal.
- 3.38 The linear design was developed further, stepping the design out to create the stacked box design. This stepping out responds to some of the pragmatic needs of the building, also creating partial canopies over external pedestrian spaces where event goers would be queuing. This will give prominence to the main entrance of the building adjacent to Joe Mercer Way, the central boulevard linking the Etihad Campus and the car parks.
- 3.39 The building form was therefore pushed to respond functionally to the interior spaces. In turn, the form steps in or out responding to where space is required inside the building therefore creating a stacked box aesthetic.
- 3.40 The stacked box form has a strong relationship with the interiors of the building, providing shelter, a unique identity and allows for dynamic facade activation. The horizontal layering of the stacked form contrasts strongly with the solid form of the plinth that grounds the building to the site.
- 3.41 Internally, consideration has been given to the operational requirements associated with an arena and has partially dictated the stacked-box appearance. The design brief included a venue that could be used for both event and non-event activities, which had required a unique internal configuration.
- 3.42 The venue will have the capability to successfully hold a varied array of different event types. Flexibility and scalability have been built into the design of the arena to allow for a multitude of different modes to ensure the venue can regularly host events, putting Manchester in the world stage for entertainment and leisure.

- 3.43 The Proposed Development seeks to redefine the arena design approach, through providing attractive spaces around the auditorium to create a venue which can be used for event and non-event activities. These uses include food and beverage offers, bars, retail concessions, pop-up retail spaces and lounges.
- 3.44 There is therefore limited scope in which to provide an alternative design which meets the technical brief required for a state-of-the art arena.
- 3.45 Further details on the design evolution of the Proposed Development can be found within Section 3 of the Design and Access Statement prepared by Populous.

Chosen Design

- 3.46 The Proposed Development realises the potential of the Site and is in compliance with national and local planning policy and guidance whilst also meeting the requirements of the client's brief.
- 3.47 The Proposed Development will benefit from the public transport links that are necessary to the success of the arena and has been designed in consideration of environmental effects including townscape and visual impact, wind, noise and air quality.
- 3.48 Overall the Proposed Development will create an enhancement from the Site in its current state and will deliver wider social and economic benefits.

4 Air Quality (ES Chapter 6)

What is Air Quality?

- 4.1 Air quality relates to the quantum of major air pollutants that affect public health such as particulate matter (PM₁₀ and PM_{2.5}) and nitrogen dioxide (NO₂). Within the UK there are legally binding targets to limit the amount of these harmful pollutants. As such, where relevant, it is important that any potential impact of a Proposed Development on air quality is taken into account.

What has been assessed?

- 4.2 An assessment of the potential air quality impacts from the Proposed Development on identified receptors has been carried out. A receptor is something or someone that may be sensitive to change in air quality, for example those living in nearby residential properties.
- 4.3 Greater Manchester Combined Authority has declared an Air Quality Management Area (AQMA) along main roads near the Site as result of increased levels of particulate matter and nitrogen dioxide, which exceed specified objectives. The Site is located adjacent to areas of the declared AQMA along Hulme Hall Lane.
- 4.4 The assessment takes into account existing conditions in the vicinity of the Site and the potential impacts during construction and operational phases of the Proposed Development. As part of this the assessment considers: construction dust emissions; air quality emissions from traffic associated with operation and construction of the Proposed Development, and emissions from proposed plant during construction and operation.
- 4.5 Potential construction impacts on air quality include elevated pollutant concentrations and dust deposits. The potential risk for construction activities to impact upon local air quality has been assessed, and recommended mitigation measures have been given, based on this risk.
- 4.6 Traffic and plant emissions have been assessed using dispersion modelling software to predict future impacts of the Proposed Development on nearby air-quality receptors.
- 4.7 Potential construction impacts have been assessed in accordance with the Institute of Air Quality Management (IAQM) best practice guidance. This guidance provides a methodology for assessing air quality impacts from activities which may be associated with the construction of a development.

What is the impact of the Proposed Development in terms of Air Quality?

- 4.8 With regards to construction effects there is a high risk of dust nuisance to nearby receptors, such as the stream to the south of the site and the nearby Etihad Stadium amenity areas. Mitigation measures have been recommended in line with the level of risk, to minimise emissions at the source. Construction traffic emission impacts are assessed to be negligible. If all mitigation measures are effectively implemented, there will be no residual air quality impacts during the construction phase.
- 4.9 With regards to operational effects, no significant air quality impacts have been predicted. The increase in traffic flows resulting from the Proposed Development are relatively low in comparison to the flows already present on the roads surrounding the Site. The impact from proposed plant is also negligible on nearby receptors. No further mitigation is therefore required with respect to operational impacts on air quality.
- 4.10 It can therefore be concluded that with the implementation of proposed construction mitigation measures, the Proposed Development will not have a significant effect on air quality.

5 Ground Conditions (ES Chapter 7)

What are Ground Conditions?

- 5.1 This assessment involves the examination of ground conditions (geology, hydrogeology and hydrology) and the geo-environmental conditions (soil and groundwater contamination, and ground gas) related to the historic and current uses of the Site and surrounding areas. The Site has been subject to numerous land alterations since the 1800s including; straightening of the River Medlock, coal mining, Bradford Gas Works, residential development, and underground grouting works along two existing coal seams. The Ashton Canal forms the southern boundary and the River Medlock is located within a culvert northwest of the Site. Previous site investigations and treatment works, together with the current investigation, have recorded visual and smell evidence of ground contamination.

What has been assessed?

- 5.2 The likely environmental effects of the Proposed Development with respect to ground conditions have been assessed. The assessment has considered the potential for movement of potentially contaminated soils or groundwater, pollution of groundwater or surface waters from construction activities, health effects to people (construction workers and off-site users), plants and animals and possible effects on buildings and structures. The assessment considers: sensitive receptors, including construction workers, future site users, controlled waters; potential sources of contamination, including previous industrial site uses; and, potential pathways for contamination. The baseline data was sourced from a desk study report, review of previous site investigation data, a site walkover survey and on-going ground investigation.

What is the impact of the Proposed Development in terms of Ground Conditions?

- 5.3 The Proposed Development will involve earthworks, including excavation of soils/natural materials. It is anticipated that the total excavated volume will be approximately 101,103m³. It is possible that contamination of soils and shallow perched water will be encountered and migration pathways from the near surface to the deeper strata could be created. The works will also involve the removal of a substantial volume of made ground and contaminant source.
- 5.4 During construction, there is a potential for people to be exposed to contamination by direct contact with the contaminated ground (in particular construction workers) and by the inhalation of contaminated dusts and ground gas (construction workers and off-site users). There is also a potential for contamination to be mobilised and migrate, which could affect groundwater and surface waters (River Medlock, Ashton Canal). Increased infiltration and migration of contamination to neighbouring properties and infrastructure (including drainage systems) could affect the integrity of below ground works of concrete and/or result in contaminants entering into the water supply pipework. During the below ground works of construction, there are also risks associated with the potential presence of unexploded ordnance (UXO), i.e. historic bombs.
- 5.5 The potential risks during the construction phase are capable of mitigation by appropriate design and implementation of a Remediation Strategy, Construction Environmental Management Plan and Foundation Works Risk Assessment. This will include a suitably robust set of measures to ensure good construction practice and the adoption of a health and safety regime to protect construction workers and off-site users. The earthworks and foundation solutions will be designed and constructed to mitigate the potential risk to groundwater and surface waters. Appropriate design of below ground concrete and water supply pipework would mitigate the potential risks to this infrastructure. Use of suitable soils for above ground planters and implementation of a specified capping layer within any soft landscaped areas will mitigate any potential risks to people, flora and fauna associated with contact to such soil materials.
- 5.6 Once construction of the Proposed Development is complete, any contamination will have been excavated, treated, capped, or removed. All the potential risks associated with the ground conditions will be mitigated during the construction phase by the implementation of the approved Remediation Strategy. The evidence for completion of these works will be presented in a Completion Report.

6 Socio-Economic Impacts (ES Chapter 8)

What are socio-economic impacts?

- 6.1 Socio-economic impacts, in EIA terms, relates to the impact of the Proposed Development on the lives of current or future residents in a geographic area, including the impact on the economy.

What has been assessed?

- 6.2 Likely significant effects on socio-economics as a result of the Proposed Development have been considered, including: employment impact on the labour market and additional local spending; and, review of other relevant effects such as demand for new open space.
- 6.3 There are no defined standards or guidelines for defining socio-economic impacts and the significance of effects. In order to assess the significance of effects, professional judgement has been used to determine the proportionate impact of the Proposed Development in its local, regional and/or national context.
- 6.4 The socio-economic impact assessment was undertaken using a wide range of information sources, including Census data, studies relating to business, travel patterns, and open space, which are predominantly undertaken by Manchester City Council (MCC) and various government departments.
- 6.5 The principal economic effect of the Proposed Development is considered relative to Manchester (city) and the North West (regional) scale, as these represent the principal labour market catchment areas.
- 6.6 The principal labour market is commonly known as the Travel to Work Area (TTWA) and can be ascertained using Census data. The Site is accessible from all areas of Manchester and therefore the labour market catchment area incorporates the population that may reasonably be expected to travel to, and benefit from the Proposed Development.
- 6.7 At the operational stage, employment estimates for new uses within the Proposed Development have been provided by the Applicant based on experience of operating similar venues within the UK.

What is the effect of the Proposed Development on Socio-Economics?

- 6.8 Construction employment is expected to result in approximately 3,787 net jobs over the construction period, of which approximately 1,894 net jobs are likely to be created within Manchester, delivering a beneficial effect for the Manchester economy during the construction period.
- 6.9 Once in operation, the Proposed Development is estimated to result in a total net increase of 586 jobs, of which approximately 293 jobs are expected to be taken by people living within Manchester. The increase in direct jobs, as well as the creation of indirect jobs within the economy, for example through the supply chain, will deliver a permanent beneficial effect for the Manchester economy.
- 6.10 In addition to the creation of employment on-site, the Proposed Development is estimated to attract approximately 1 million visitors per year, resulting in additional local spending of approximately £36 million per annum, creating a permanent beneficial effect for the Manchester economy.
- 6.11 The Proposed Development will have a beneficial effect on regeneration and deprivation indices, including income and employment. It will help to deliver the objectives of the draft Eastland's Regeneration Framework and contribute to the continued strengthening of the Etihad Campus as a visitor destination.
- 6.12 The Proposed Development will provide approximately 1,947sqm of new open space, including new hard and soft landscaping. The spaces will provide a number of opportunities for recreation and will incorporate seating areas.

7 Lighting (ES Chapter 9)

What is a Lighting Assessment?

- 7.1 The assessment considers the impact of the proposed external lighting scheme on identified receptors, including local residents, ecology, such as bats along the canal corridor, the road network and heritage assets. It considers the change from existing lighting conditions.

What has been assessed?

- 7.2 The Site is located in an urban area, which is surrounded by well-lit roads and existing lit structures, including the Etihad Stadium. The pathway along Ashton Canal is lit by lighting columns.
- 7.3 The proposals include new lighting and screens, which will be located on the outside of the arena. In designing the lighting, consideration has been given to existing legislation, policies and guidance and the surrounding environment during construction and operation.
- 7.4 Receptors that might be affected by the lighting installation have been identified (shown on Figure 7.1) and the effect that lighting might have on them has been described. The effect is measured taking into account an installation designed following good practice guidance.

What is the effect of the Proposed Development in terms of lighting?

- 7.5 The proposed external lighting of the building and landscaping could have an impact on the surrounding areas and identified receptors.
- 7.6 The receptors most likely to be affected by the lighting are Ashton Canal, users of Alan Turing Way and the residential buildings to the east of Alan Turing Way
- 7.7 Ashton Canal is a bat corridor, and as such light levels should be kept to a minimum. A new installation of exterior lighting might add to the existing light levels. The design has therefore been developed to provide a solution that does not contribute significantly to the light levels in this area.
- 7.8 Light spill on Alan Turing Way will also be controlled. The proposed lighting scheme has been designed to contribute minimum light levels to this area.



Figure 7.1: Location of Identified Receptors (Source: ME Engineers, January 2020)



Figure 7.2: Indicative CGI of Proposed Lighting Scheme (Source: Populous, 2020)

- 7.9 The residential buildings east of Alan Turing Way have a direct line of sight to the Proposed Development. External lighting to the top level of the building and digital screens on the south elevation could create high contrast with the night time sky and potentially be visible from these buildings. The contrast is proposed to be minimised with the use of a lighting control system, which allows lighting to be dimmed.
- 7.10 In summary, the Proposed Development has the potential to affect some surrounding residential properties as well as the bat corridor on Ashton Canal. This potential effect will be mitigated through careful design, lighting selection and installation of a lighting control system, which will enable the building to be lit in a manner that limits the light spill to the surrounding areas.

8 Noise and Vibration (ES Chapter 10)

What is Noise and Vibration?

- 8.1 Noise relates to the generation of noise from different activities associated with the Proposed Development, which could include construction work, traffic, music, and people visiting the arena. Vibration also relates to activity associated with the Proposed Development, in this instance any vibration would be related to construction works.

What has been assessed?

- 8.2 An assessment of the effects of noise and vibration from the Proposed Development on identified receptors has been undertaken. The assessment considers the impact during the construction and operational phases of the Proposed Development.
- 8.3 The assessment was carried out using Local Authority criteria, British Standards and guidance. The process includes a measurement of the existing noise and vibration levels at and around the Site (the 'baseline conditions'), the prediction of noise and vibration impacting upon the Proposed Development and the prediction of noise impacting on the existing area as a result of the Proposed Development. Noise predictions are based on the baseline noise surveys, existing and future traffic flows and guidance contained within relevant standards.
- 8.4 As part of the assessment, uses which are considered particularly sensitive to noise and vibration have been considered. These uses are called 'noise sensitive receptors'. Within the assessment, the noise sensitive receptors are considered to be existing residential uses in the area and any residential developments, which are under construction or which have planning permission.
- 8.5 For this application, the noise sensitive receptors are shown on Figure 8.1 and include:

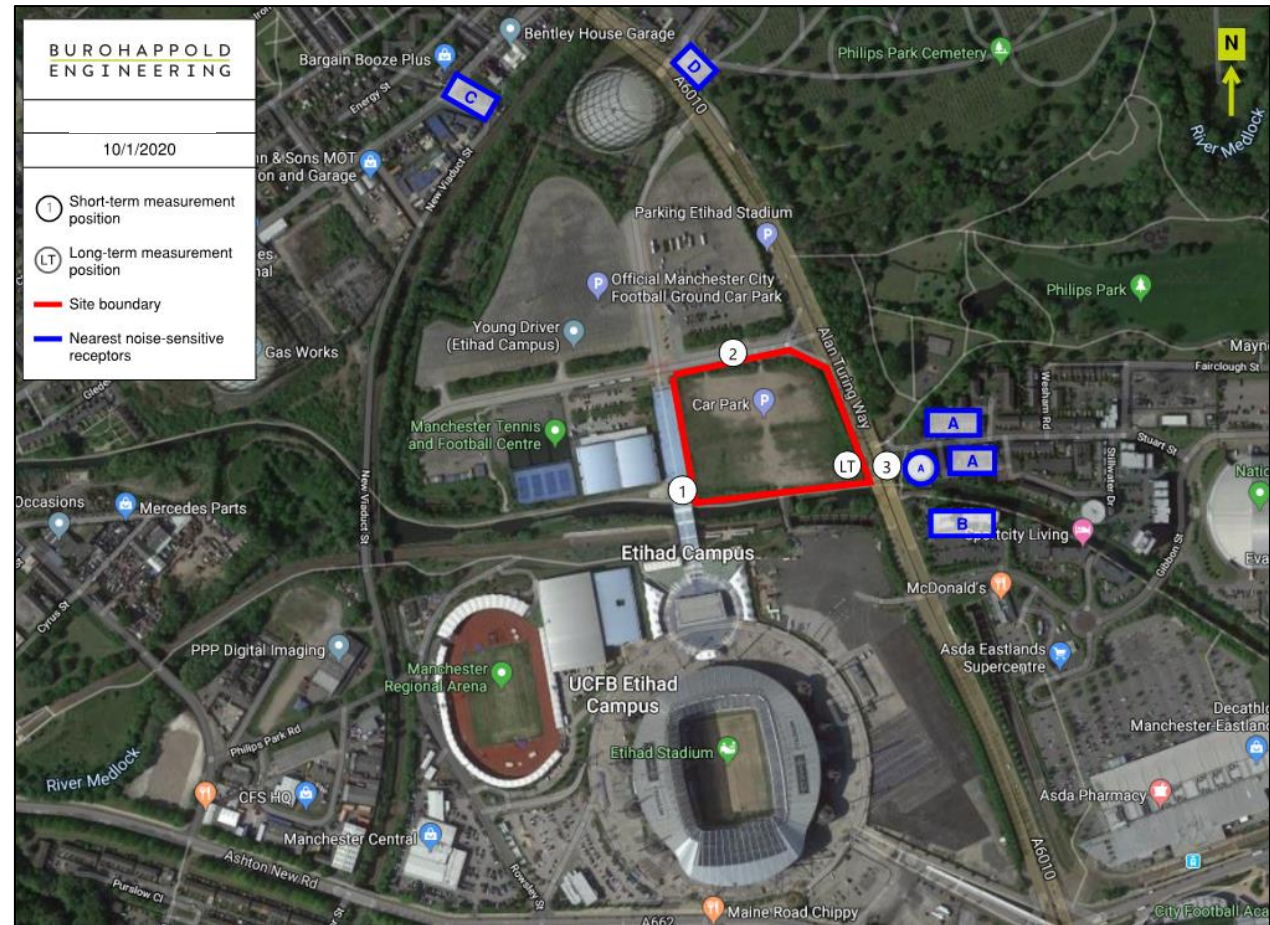


Figure 8.1: Noise monitoring positions and noise sensitive receivers (Source: BuroHappold, January 2020)

- Residential properties at Stuart Street (A)
- Residential properties at Gibbon Street (B)
- Residential properties at Broxton Street (C)
- Residential properties on Briscoe Lane (D)

8.6 Other noise sensitive receptors have not been included as they are too distant from the Site to be affected by the Proposed Development.

8.7 The assessment of noise is carried out using a measurement of a-weighted decibels (dBA), which are an expression to the relative loudness of sounds in the air as perceived by the human ear. The 'a-weighting' relates to the decibels being weighted to those which the human ear can hear, as the human ear is less sensitive to low audio frequencies.

8.8 When carrying out measurements the noise is recorded in a number of ways, including:

- LAeq,T – dBA – which is the average noise level over the time period.
- LAF,max – dBA – the maximum, a-weighted noise level measured during the time period.
- LA90,T – dBA – a measurement of the background noise (i.e. which occurred for 90% of the time period).

8.9 Special noise monitoring instruments, which were calibrated to United Kingdom Accreditation Service standards were used to measure the existing conditions at the Site and also within proximity to the identified noise sensitive receptors.

8.10 The noise surveys were undertaken between 11:00 Tuesday 18 June 2019 to 11:00 on Wednesday 20 June 2019. These dates and 24 hour time period were specifically chosen on a date where a concert was playing at the nearby Etihad Stadium, which was considered to represent a 'worst case' scenario, i.e. when the area was likely to be at its most noisy. The Etihad Stadium's primary use as a football stadium is likely to have a lower attendance (due to the pitch being in situ, rather than as a standing area) and a limited use of sound systems, and therefore less noisy than a concert.

8.11 There were three 'short term' measurements undertaken during the daytime between 07:00 and 23:00, from Joe Mercer Way, Sportcity Way and Stuart Street, and one 'long-term' measurement taken at Alan Turing Way over a 48 hour period (shown on Figure 8.1).

What is the impact of the Proposed Development on Noise and Vibration?

8.12 Construction has the potential to generate high levels of noise and vibration through activities such as material movements, earthworks, ground improvement and piling, crushing and breaking. Construction vehicle movements also have the potential to generate noise, although typically the increase in road traffic associated with construction is minor, particularly in comparison to well-trafficked roads such as those in the vicinity of the Site.

8.13 Construction work operations are usually characterised by temporary increases in noise levels, which may result in short-term disturbance to nearby noise sensitive receptors, including an increase of traffic noise levels due to construction traffic. A worst-case scenario (i.e. greatest possible number of vehicle movements) for construction traffic flows has been used to assess the impact on the noise sensitive receptors. Likewise, ground-borne vibration can lead to human disturbance and/or building damage.

8.14 Factoring in the proposed mitigation, which includes hoardings around the perimeter of the Site, during construction, the identified noise sensitive receptors are predicted to experience a negligible effect. A negligible effect on buildings due to construction vibration is predicted across all receptors. Similarly, change in traffic flows due to construction activities predicted a negligible effect.

- 8.15 The assessment of the noise impacts during operation of the Proposed Development considers entertainment noise, crowd noise, fixed plant and equipment, and operational traffic.
- 8.16 The Proposed Development is predicted to have a negligible impact on the noise sensitive receptors on the basis of the proposed mitigation, which includes a requirement for noise emissions from the fixed mechanical plant and equipment to be kept to 5 dB below the background noise level and entertainment noise to be kept at 10 dB below the background noise level in each octave band.

9 Townscape and Visual Impact (ES Chapter 11)

What is Townscape and Visual Impact?

- 9.1 Townscape is the landscape within the built-up area, including the buildings, the relationship between them, the different types of urban open spaces and the relationship between buildings and open space (as stated in Guidelines for Landscape and Visual Impact Assessment, 3rd Edition, 2013).
- 9.2 A Townscape and Visual Impact assessment considers the change in the townscape character and visual amenity as a result of the Proposed Development.
- 9.3 The Site is currently unoccupied by buildings and used as overspill surface car parking for events at the Etihad Stadium. It is fenced off on all sides, with views obstructed by self-seeded vegetation. Along Alan Turing Way, a planted row of trees defines the edge. Extensive areas of the Site are covered by self-seeded grass, shrubs and trees. The Site currently lacks permeability due to it being fenced off and lacking an active use. The Site forms a noticeable 'gap' in the urban grain, in conjunction with surface car parking to the north, at a key location within the wider city fringe.
- 9.4 The Site does not contribute positively to its immediate surroundings and it has a negative relationship with the adjacent Ashton Canal due to perimeter fencing and the steep level change. It is visually poor and does not provide enclosure or active frontage along Alan Turing Way, a key route around the city.

What has been assessed?

- 9.5 The likely townscape and visual impacts of the Proposed Development upon the Site and surrounding area are assessed by reference to change from the existing baseline conditions. The assessment is supported by a series of accurate visual images of the Proposed Development shown from a series of short, medium and longer range viewpoints.
- 9.6 A three-stage process was used. Firstly, the nature of receptors (sensitivity) has been categorised. Secondly, the nature of effects

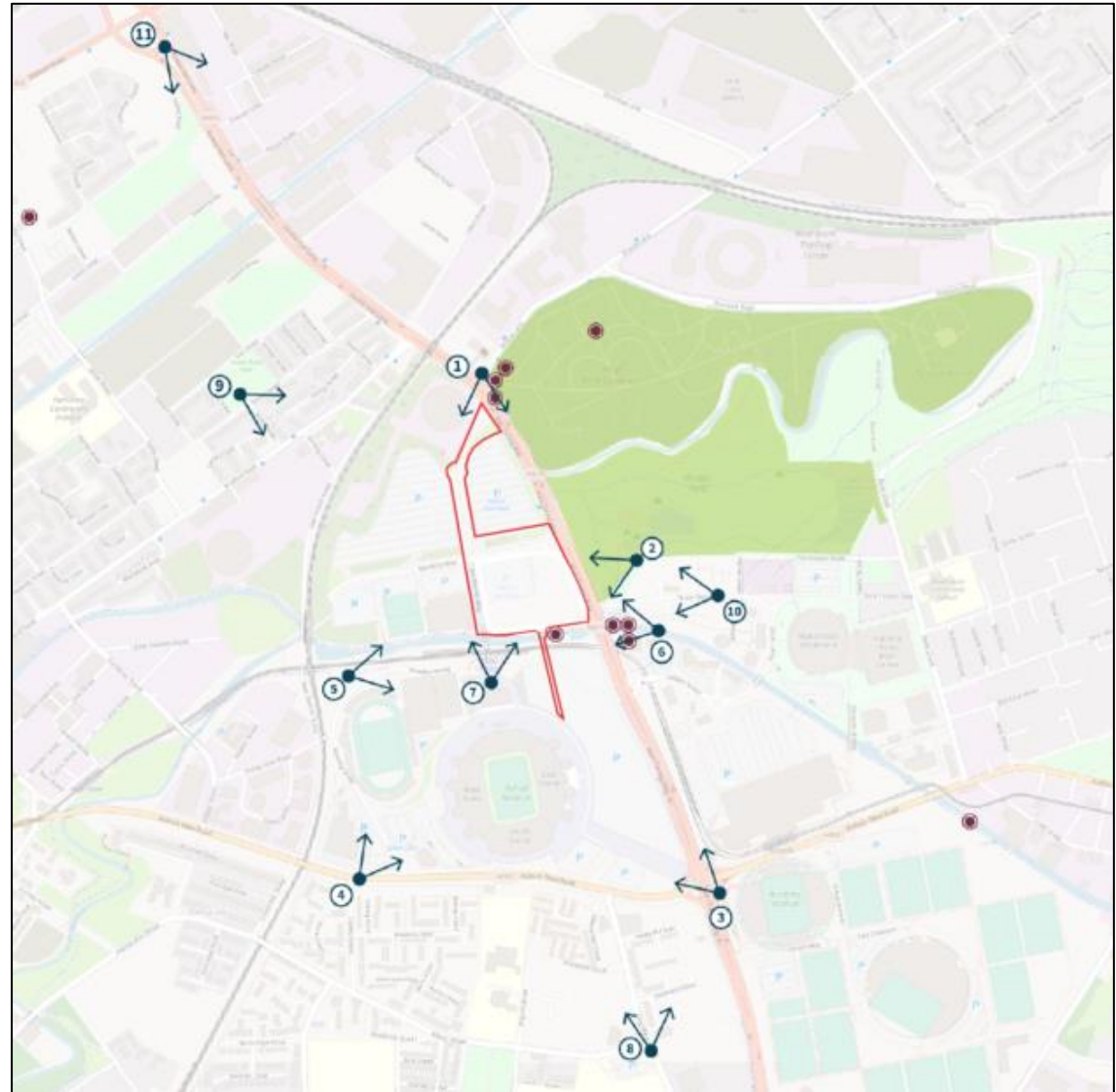


Figure 9.1 TVIA Viewpoints (Source: Planit.i.e, December 2019)

(magnitude) likely to result from the Proposed Development has been identified. Finally, the overall significance of the effects on receptors has been assessed.

9.7 Cumulative effects are impacts that result from additional changes to the townscape or visual amenity caused by the Proposed Development in conjunction with other developments (associated with or separate to it), or actions that occurred in the past, present or are likely to occur in the foreseeable future. A cumulative assessment of the Proposed Development together with six committed developments has been undertaken.

9.8 Both the viewpoints and committed development schemes were agreed through consultation with the Local Planning Authority.

What is the impact of the Proposed Development on Townscape and Visual Impact?

9.9 The design of the Proposed Development has been formulated through an iterative process incorporating environmental assessment and consultation with the aim of developing a high quality and responsive design that delivers positive impacts to the townscape. This process has allowed constraints and opportunities to directly influence the design evolution of the Proposed Development and mitigation is therefore designed in or 'embedded' to the scheme. The requirement for any further mitigation is limited and focused on management of the Site during the construction phase to ensure it is tidy and any unattractive construction activity is screened as far as possible.

9.10 There may potentially be effects on the following elements of the townscape: heritage buildings and structures; townscape character; urban grain; land use; building heights; topography and site levels; movement and linkages; environmental designations and public open space; and site character. Potential visual impacts are considered in terms of changes to the extent of visibility of the Site and changes to the identified viewpoints.

9.11 Due to the sensitivity of the views, there are predicted to be significant adverse effects during the construction phase viewpoints 1, 3 and 6. The effects are temporary by their nature.

9.12 During the operational phase, viewpoint 2 from within Philips Park is predicted to result in a 'moderately adverse' effect. This is due to the sensitivity of Philips Park, and the close proximity of the Proposed Development to the viewpoint location. The effect on this viewpoint must be considered as part of the assessment as a whole, and wider planning balance. It must also be noted that views of the Proposed Development are largely screened from within the Philips Park due to existing trees and planting, the assessed viewpoint represents 'worst case scenario'.

9.13 Viewpoints 2, 3, 5, 6, 7 and 11 are predicted to result in beneficial effects. This is primarily due to the Proposed Development consolidating the existing Etihad Campus character.

9.14 Two night-time views have been provided (from viewpoints 3 and 7), these are also predicted to result in beneficial effects. The night-time photomontages illustrate that the Proposed Development will form a cohesive character in conjunction with the Etihad Campus, and the lighting will create a dynamic, high quality new landmark destination in the area.



Figure 9.2: Viewpoint 2 (Source: Planit.i.e, 2020)



Figure 9.3: Viewpoint 3 (Source: Planit.i.e, 2020)

10 Traffic and Transport (ES Chapter 12)

What is Traffic and Transport?

- 10.1 Traffic and Transport is the assessment of the potential transport impacts of a development and what measures can be undertaken to mitigate anticipated transport impacts to promote accessibility and safety for all modes of transport. These assessments typically include qualitative and quantitative descriptions of travel characteristics of the proposals and an assessment of the movements of across all modes of transport that would be affected by a proposed development.

What has been assessed?

- 10.2 The Proposed Development has been assessed with respect to traffic and transportation and considers the effects of the Proposed Development during construction as well as when it is operational.
- 10.3 The potential transport effects relevant to the Proposed Development include severance, pedestrian/cycle delay, pedestrian/cycle amenity (which for the purposes of this assessment includes fear and intimidation), driver delay, public transport and accidents and safety.
- 10.4 In terms of public transport, the Proposed Development does not include for changes to public transport services and therefore, there are no material changes to consider as part of this assessment.

What is the effect of the Proposed Development on Traffic and Transport?

- 10.5 The assessment has demonstrated that the increase in construction traffic would result in temporary, local adverse effects of negligible significance on traffic and transportation, assuming that a Construction Logistics Plan (CLP) is implemented.
- 10.6 The CLP will seek to minimise any impact of construction on the surrounding community with suitable traffic management measures, which would manage the routing and timing of construction traffic to ensure that sensitive routes and receptors are avoided. With mitigation in place, the increase in construction traffic is unlikely to cause significant disruption or congestion on the local transport network.
- 10.7 No significant adverse effects resulting from the operational phase Proposed Development have been identified in relation to traffic and transportation.
- 10.8 In addition to the benefits realised through the design in terms of pedestrian and cycle access in and around the Etihad Campus, a Travel Plan will be implemented to further encourage the use of sustainable transport. The submission of a Travel Plan will ensure that visitors to the site are aware of their sustainable travel options, which is likely to create a beneficial effect on road users.
- 10.9 In conclusion, the results of this assessment have indicated that the potential environmental effects resulting from the increase in traffic generated by the Proposed Development are predicted to be minor or not significant, providing that the mitigation measures are implemented as part of the Proposed Development.

11 Water Quality, Drainage and Flood Risk (ES Chapter 13)

What is Water Quality, Drainage and Flood Risk?

- 11.1 Water Quality considers all aspects relating to water resources including potential impacts on drainage quantity and surface water quality, and the potential for contamination of ground water during construction and operational phases of the Proposed Development.

What has been assessed?

- 11.2 The assessment of water resources and flood risk includes the effects of flooding and potential for pollution effects to the River Medlock and Ashton Canal, on and from the Proposed Development. A Flood Risk Assessment and Drainage Strategy have been prepared, providing details on how the surface and foul water will be managed to ensure that water quality, flood risk and surface water drainage capacity are not compromised.
- 11.3 To determine the amount of water that is allowed to run off the Site, discussions have been undertaken with Manchester City Council as the Lead Local Flood Authority for the area. In discussions with Manchester City Council, historical site use has been considered. It was decided that runoff from the Site must provide a 70% betterment on existing rates of runoff.
- 11.4 Discussions held with United Utilities confirmed that foul water flows will be allowed to connect into an existing foul water sewer at the north east of the Site.

What is the effect of the Proposed Development on Water Quality, Drainage and Flood Risk?

- 11.5 Without appropriate mitigation in place, construction activities could potentially cause temporary but significant effects on the water quality of the Ashton Canal and River Medlock and the Proposed Development could potentially have a minor adverse effect on water supply infrastructure; a moderate to minor adverse effect on surface water drainage capacity; and a moderate adverse effect on flood risk to construction workers and plant users.
- 11.6 The proposed mitigation measures during the construction phase include: suppression of dust; avoidance of stockpiling soil; covering of soil stockpiles; implementation of pollution and drainage controls; and, spillage containment for fuel/waste storage areas.
- 11.7 With recommended mitigation measures in place, no significant effects are expected to arise during the construction phase.
- 11.8 Without appropriate mitigation measures in place, operational activities could potentially cause minor adverse effects on water supply infrastructure. The proposed mitigation measures during the operational phase include the following: low flow fittings; efficient water supply features (e.g. leak detection); and, the provision of water from alternative sources (e.g. rainwater harvesting).
- 11.9 With recommended mitigation measures in place, no significant effects are expected to arise in respect of water supply infrastructure.
- 11.10 All other operational effects of the Proposed Development were deemed negligible, therefore no further mitigation measures are required.

12 Wind Microclimate (ES Chapter 14)

What is Wind Microclimate?

- 12.1 The purpose of the Wind Microclimate study is to consider the impact of the Proposed Development upon local wind patterns within and around the Site, with the emphasis being on the impact of wind on the comfort and safety of pedestrians.

What has been assessed?

- 12.2 A quantitative study has been undertaken to assess likely environmental effects of the Proposed Development with respect to wind. The wind study includes a direct comparison between baseline conditions and those created by the Proposed Development for 12 wind directions. The Chapter describes the quantitative assessment of the likely wind environment, and the qualitative judgements that are made to identify areas of potential effects. This includes an assessment of the relative forms, layouts and massing of the Site and the Proposed Development, as well as landscaping and topography. Impacts of the likely wind conditions are judged based on the Computational Fluid Dynamics (CFD) modelling results and BuroHappold's experience of wind assessments.
- 12.3 In the baseline condition, the Site is largely open to the north, northeast and northwest, resulting in possible exposure to winds from these directions. To the east of the Site are two existing buildings of 9 and 10 storeys. Further to the east, are low to mid rise buildings. The Site is fairly exposed to the southeast. The mass of the Etihad Stadium offers some protection from wind from the south; however, some wind moves around it and reaches the Site. To the southwest are lower rise buildings, including the National Squash Centre and the Manchester Regional Arena. The west of the Site is also fairly open, except for the low rise Manchester Regional Tennis centre buildings. Wind is likely to move easily over the empty Site, only the existing landscape will effect the direction of the wind.
- 12.4 The initial baseline analysis suggests that pedestrian level conditions are suitable for walking for much of the year, with some smaller areas suitable for standing. Areas to the northwest, north and northeast of the Site, are quite exposed and suitable for walking. Areas at the south of the Site, along the canal towpath, are more sheltered due to the lower elevation of this area, and are suitable for sitting. Wind conditions vary from being suitable for sitting to walking in the areas to the east and west of the Site.
- 12.5 In winter, conditions across the Site are suitable for walking almost everywhere. Some areas further to the north, northeast and east of the Site are seen to be more suitable for pedestrians walking around buildings (i.e. accessing areas of a building for maintenance purposes, for example), and would therefore feel somewhat uncomfortable for pedestrians in these areas during winter.

What is the effect of the Proposed Development on Wind Microclimate?

- 12.6 During construction of the Proposed Development, localised wind acceleration is likely to result in a gradual transition to the new permanent conditions when the Proposed Development is completed. It is possible that there will be temporary, localised wind acceleration across the Site. Since the effects are short-term and local, and the normal sheltering from construction hoardings is expected, negligible impacts are expected.
- 12.7 Four separate scenarios were modelled to consider the operational effects of the Proposed Development. Mitigation measures in the form of landscaping were suggested to improve the conditions on parts of the podium area (Level 01). In addition, the existing landscape was also modelled to determine its effect on improving conditions in the areas surrounding the Proposed Development.
- 12.8 For the operational phase, with mitigation and landscaping included, the Proposed Development has a beneficial effect in several areas across the Site and the immediate surroundings. The wind conditions are suitable for diverse activities in most areas and there are no areas where the safety criteria has been exceeded within the Proposed Development and nearby areas.

13 Climate Change

What is Climate Change?

13.1 The assessment considers the nature and magnitude of greenhouse gas emissions, which are likely to arise from the Proposed Development during construction and in operation, and the impact of this contribution to climate change. The vulnerability of the Proposed Development to climate change has been considered separately in respect of each technical discipline, with key risks and conclusions summarised in the climate change chapter.

What has been assessed?

13.2 **Part A: Climate Change Mitigation** – assessment of carbon emissions resulting from the Proposed Development (construction and operational phases), and proposed measures to reduce these emissions to minimise its contribution to climate change.

13.3 **Part B: Climate Change Resilience** – focusing on the vulnerability of the Proposed Development to risks arising from a changing climate, and proposed measures to reduce these risks.

What is the effect of the Proposed Development on Climate Change?

Part A Climate Change Mitigation

- 13.4 Construction - The Proposed Development has followed best available guidance to estimate and reduce embodied carbon at the concept stage, providing a strong baseline to inform detailed design decisions to reduce embodied carbon. Initial benchmarking shows the estimated embodied carbon better than typical non-residential buildings.
- 13.5 Operational - The Proposed Development has taken best available measures to minimise its operational carbon, incorporating latest viable low carbon design (efficient building envelope and building services systems) and technology to reduce energy consumption as much as possible for day one of operation. This is evident in the estimated 59% saving in operational carbon compared to a standard Building Regulations compliant building with a gas boiler for heating.
- 13.6 With designed-in mitigation measures, greenhouse gas emissions from the Proposed Development over the 60-year study period arise from:

Table 13.1: Greenhouse Gas Emissions

Greenhouse Gas Emissions Source	Estimated GHG Emissions (tCO ₂ e)
Construction – embodied carbon associated with a building’s product and construction stages	56,761 ¹ (915 kgCO ₂ e/m ²)
Operational energy – carbon associated with the total energy consumption within a building in operation. Includes both regulated (from fixed building services systems) and unregulated (all other user equipment).	15,808 ² (32 kgCO ₂ e/m ² in 2023)

¹ – Based on preliminary estimates of material specifications and quantities translated into embodied carbon using OneClick LCA software and its database of carbon factors.

² – Based on ‘Be Green’ scenario within the Energy Statement, Green Book UK electricity grid-average consumption-based carbon factors for commercial buildings with grid decarbonisation projected to 2100 (BEIS, 2019) and gas carbon factor from UK Government GHG 2019 conversion factors for company report (BEIS, 2019)

- 13.7 The reduction of carbon emissions associated with construction and operational effects is an ongoing collaborative process. Further mitigation opportunities have been proposed for review during the detailed design stage and during the first 15 years of operation in the transition towards zero carbon by 2038, as identified in Table 13.2.
- 13.8 If the designed-in mitigation measures and the mitigation opportunities are implemented to minimise carbon emissions arising from the Proposed Development, effects on climate change should still be considered significant at the global scale (since all greenhouse gas emissions are contributing to climate change) but can be considered minor adverse at the local level since:
- Construction effects (embodied carbon) does not form part of the scope for the Manchester net zero carbon 2038 target but has still been actively measured and minimised compared to other developments, which shows industry leadership in encouraging data sharing and discussion around the emerging topic of embodied carbon. Whilst it contributes a short-term net increase in global greenhouse gas emissions, it is not an ongoing contribution that precludes Manchester from achieving net zero carbon by 2038.
 - Operational effects contribute a short/medium term net increase in greenhouse emissions but systems and commitments are in place for reductions towards net zero carbon in operation by 2038.

Table 13.2 Summary of Supplementary Mitigation Opportunities

GHG Emissions Source	Supplementary Mitigation Opportunities	Timing
Construction (Embodied carbon)	Further optimisation of material requirements and use of construction products and materials with lower embodied carbon. Reduce construction transport trips and distances. Reduce energy association with construction installation processes.	RIBA Stage 4 Detailed Design and preparation for RIBA Stage 5 construction works
Operational energy	Phase out gas with low or zero carbon retrofits Carbon off-setting	In operation, prior to 2038

Part B Climate Change Resilience

- 13.9 The potential climate risks relevant to the Proposed Development have been drawn from Policy EN 8 in the Core Strategy and the UK Climate Change Risk Assessment 2017, summarised as follows:
- Warmer, wetter winters leading to flooding.
 - Hotter, drier summers leading to drought.
 - Ability of natural habitats and species to adapt.
 - Hotter summers leading to over-heating of buildings impacting occupant health and wellbeing.

- Hotter, drier summers leading to the urban heat island effect impacting on occupant health and wellbeing.

- 13.10 The Proposed Development seeks to minimise climate risks to the physical building, public realm and soft landscaping through adaptation measures implemented during construction that are proportionate to the level of certainty associated with climate projections for the UK with regional interpretation.
- 13.11 To manage uncertainty, the Proposed Development seeks to incorporate adaptive capacity, in particular future-ready to increase cooling capacity if needed, to respond to future climate change risks as identified through ongoing risk assessments once the building opens.
- 13.12 With the designed-in adaptation measures and additional adaptive capacity, it can be concluded that the Proposed Development is future-ready with sufficient resilience to climate change effects.
- 13.13 Furthermore, it does not increase the vulnerability of surrounding developments to climate change effects, notably flooding through the 50% reduction of surface water run-off from the site compared to existing.

14 Summary of Proposed Mitigation

14.1 The proposed mitigation measures for the construction and operational phases of the Proposed Development are summarised in the tables – these are supplementary measures, beyond the designed-in mitigation. A full description of the mitigation measures can be found within the individual chapters and at Appendix 16.1 of the Environmental Statement.

Construction Phase

Discipline	Mitigation Method	Means of Implementation
Air Quality	Best practice mitigation measures for controlling dust/emissions during construction.	Implemented into construction management plan and adhered to throughout construction phase.
Ground Conditions	Implementation of appropriate health, safety and hygiene regime. Implementation of good construction practice e.g. dampening, wheel washing, site vehicle speed and route control, control of drop height for spoil. Implementation of measures to minimise infiltration, e.g. control areas of open excavation, temporary sealing/drainage measures. Avoid stockpiling contaminated soil. Any stockpile covered/placed on impermeable surface. Remove/treat gross contamination. Control of groundwater during excavation. Below ground concrete specified in foundation design informed by site investigation to meet relevant standards. Imported subsoil and topsoil materials to meet appropriate chemical, physical and biological criteria to accord with British Standards.	Use of Construction Environmental Management Plan and Method Statements. Implementation recorded in a Verification or Completion Report. Inform health and safety for works in confined spaces. Control of entry into any enclosed below ground spaces. Detailed unexploded ordnance (bomb) risk assessment to be carried out prior to any extensive earthworks. Toolbox talks, watching brief and health and safety plans as required. Design for any ground gas protection measures informed by site investigation, detailed within the Remediation Strategy. Implementation recorded in a Verification or Completion Report. Carry out Foundation Works Risk Assessment and implement the Remediation Strategy informed by a site investigation. Record in works in a Verification or Completion Report.
Socio-Economic	No significant adverse impacts – no mitigation required.	-
Lighting	No significant adverse impacts – no mitigation required.	-
Noise and Vibration	Implementation of a Construction Management Plan.	Preparation of a Construction Management Plan by the appointed contractor as agreed via an appropriate planning condition.
Townscape and Visual	No significant adverse impacts – no mitigation required.	-

Discipline	Mitigation Method	Means of Implementation
Traffic and Transport	Implementation of a Construction Logistics Plan.	Preparation of a Construction Logistics Plan by the appointed contractor as agreed via an appropriate planning condition.
Water Quality, Drainage and Flood Risk	Implementation of a Construction Management Plan	Preparation of a Construction Management Plan by the appointed contractor as agreed via an appropriate planning condition; contractor to prepare a flood emergency and contingency plan.
Wind Microclimate	No significant adverse impacts – no mitigation required	-
Climate Change	Review opportunities for material efficiency and use of construction products and materials with lower embodied carbon; review opportunities to reduce construction transport trips and distances; and, review opportunities to reduce energy association with construction installation processes.	Detailed design review and early contractor engagement; preparation of a Construction Management Plan by the appointed contractor as agreed via an appropriate planning condition.

Operational Phase

Discipline	Mitigation Method	Means of Implementation
Air Quality	No significant adverse impacts – no mitigation required	-
Ground Conditions	Remediation Strategy to be followed during construction.	Implementation of the approved Remediation Strategy to be recorded in a Verification or Completion Report.
Socio-Economic	No significant adverse impacts – no mitigation required	-
Lighting	Implementation of a Lighting Control System	Dimming of lighting during specified hours.
Noise and Vibration	No significant adverse impacts – no mitigation required	-
Townscape and Visual Impact	No significant adverse impacts – no mitigation required	-
Traffic Transport	No significant adverse impacts – no mitigation required	-
Water Quality, Drainage and Flood Risk	Implementation of water efficiency measures that will reduce potable demand and subsequent foul flows.	The use of low flow fittings: low flush toilets, spray taps and low flow showers, if necessary. Efficient water supply: leak detection, smart meters and pressure reduction.
Wind Microclimate	Introduction of barriers to potential accelerated wind.	Planters and trees on the podium, porous green wall on the east of the podium.
Climate Change	Phase out gas with low or zero carbon retrofits; carbon offsetting.	Operational maintenance, environmental and refurbishment plan – in operation prior to 2038.

15 Type 1 Cumulative Effects (ES Chapter 17)

- 15.1 The concluding chapter of the Environmental Statement sets out what is considered to be the overall effect of the Proposed Development in EIA terms.
- 15.2 It is undertaken using what each technical chapter has considered to be the final impact of the Proposed Development once any mitigation measures have been included. It then considers how these effects might interact with each other and what the outcomes are predicted to be for the construction and the operational phases of the Proposed Development. These combined effects are considered 'intra project' or Type 1 cumulative effects.
- 15.3 Negligible or neutral residual effects have been excluded from the assessment as, by their nature, they are considered to be imperceptible. Therefore, only minor, moderate or major effects have been considered as part of the Type 1 assessment.

Identification of Likely Significant Type 1 Cumulative Effects Construction Phase

- 15.4 As above, where an effect on a sensitive receptor group is considered to be negligible these have not been considered further in the Type 1 assessment. On that basis, the following sensitive receptors have been excluded from the Type 1 assessment as individual effects upon them were categorised as being negligible:
- Local Road Network.
 - Local Road Users.
 - Heritage assets, including nearby listed buildings and parks (Philips Park and Philips Park Cemetery).
 - Ecology, Flora and Fauna.
 - Water Supply.
- 15.5 Table 15.1 presents the results of the review of the potential for interactions of individual effects during the construction phase of the Proposed Development.

Table 15.1: Construction Phase Type 1 Cumulative Effects

Sensitive Receptor Group	Construction Phase Residual Effects Likely Significant Effects	Likely Type 1 Cumulative Effects
Local Residents and Human Health	Minor adverse, short-term and temporary impact on air quality nuisance from dust deposit during construction. Minor adverse, short-term and temporary noise impacts on local residents living on Stuart Street.	Minor adverse, short-term and temporary cumulative impact on local residents and human health in relation to air quality and noise during the construction phase. The effect is not considered to be significant in EIA terms.

Sensitive Receptor Group	Construction Phase Residual Effects Likely Significant Effects	Likely Type 1 Cumulative Effects
Construction Workers and Local Workforce, Human Health	Minor adverse / negligible, short-term and temporary effect from air quality in relation to dust deposition during construction. Moderate beneficial, short-term and temporary impact through the creation of new direct and indirect jobs. No other residual effects expected.	There will be combined intra-project effects on this receptor during the construction phase, some of which will be beneficial and other minor adverse to negligible, all short-term and temporary in nature. Overall, the cumulative effect is judged to be minor beneficial and therefore not considered to be significant in EIA terms.
Ashton Canal	Minor adverse, short-term and temporary impact on the water quality due to construction works. No other residual effects expected.	There are likely to be no significant intra-project effects on the Ashton Canal during the construction phase. Potential minor adverse effects in relation to water quality will be short-term and temporary in nature.
River Medlock	Minor adverse, short-term and temporary impact on the water quality due to construction works. No other residual effects expected.	There are likely to be no significant intra-project effects on the River Medlock during the construction phase. Potential minor adverse effects in relation to water quality will be short-term and temporary in nature.
Local Townscape	Minor to Moderate adverse, short-term and temporary townscape and visual impact on a select number of viewpoints during the construction phase. No other residual effects expected.	There are likely to be no significant intra-project effects on the local townscape during the construction phase.
Climate	Moderate-minor adverse effects in relation to embodied carbon emissions to atmospheric Greenhouse Gas concentrations. No other residual effects expected.	There are likely to be no significant intra-project effects in relation to the climate during the construction phase.

15.6 There is potential for intra-project effects to arise during the construction phase; however, these are not expected to be significant in EIA terms and will be temporary and short term in duration.

15.7 Individual residual effects with the potential to give rise to intra-project effects are predominantly expected to relate to the interaction between temporary adverse construction impacts, which are temporary and short term in duration.

Human Health during Construction Phase

15.8 Human health impacts are most likely to occur where the sensitive receptor group are Local Residents and Local Workforce. During the construction phase there is likely to be a minor adverse impact on human health in relation to air quality and noise. The adverse construction affects will be temporary in nature and mitigated through the implementation of a construction management plan, which will be controlled through a planning condition.

15.9 There will also be moderate beneficial effects in respect of the creation of direct and indirect employment for a temporary, short-term duration. The implementation of a Local Benefit Proposal during the construction phase will ensure training opportunities and apprenticeships are available to local residents and therefore may lead to higher incomes, which could be associated with better health outcomes and reduced mortality.

15.10 Overall, the intra-project effects in respect of human health during the construction period are considered to be not significant in EIA terms.

Operational Phase

15.11 As above, where an effect on a sensitive receptor group is considered to be negligible these have not been considered further in the Type 1 assessment. On that basis, the following sensitive receptors have been excluded as individual effects upon them were categorised as being negligible:

- Local Road Network.
- Local Road Users.
- Heritage assets, including nearby listed buildings and parks (Philips Park and Philips Park Cemetery).
- River Medlock and Ashton Canal.
- Ecology, Flora and Fauna.

15.12 Table 15.2 presents the results of the review of the potential for interactions of individual effects during the operational phase of the Proposed Development.

Table 15.2: Operation Phase Type 1 Cumulative Effects

Sensitive Receptor Group	Operational Phase Residual Effects Likely Significant Effects	Likely Type 1 Cumulative Effects
Local Residents and Human Health	Major beneficial and permanent, long-term improvements to regeneration objectives and several domains of deprivation including income and employment during the operational phase. Minor to Major beneficial effects arising out of improvements to the townscape, including townscape character, land use, movement and linkages, which will help to create an enhanced environment for local residents. No other residual effects expected.	Minor to Major beneficial, permanent and long-term impact on local residents and human health as a result of additional employment opportunities and an enhanced townscape as a result of regeneration.
Visitors to the Proposed Development and Human Health	Minor to Major beneficial effects arising out of improvements to the townscape, including townscape character, land use, movement and linkages, which will help to create an enhanced environment for local residents. No other residual effects expected.	There are likely to be no significant intra-project effects on visitors and human health during the operational phase.

Sensitive Receptor Group	Operational Phase Residual Effects Likely Significant Effects	Likely Type 1 Cumulative Effects
Local Businesses and Human Health	Moderate beneficial, permanent and long-term impact through the attraction of approximately 1 million visitors a year will generate approximately £36 million in additional local spending per annum. Major beneficial and permanent, long-term improvements to regeneration objectives and several domains of deprivation including income and employment. Minor to Major beneficial effects arising out of improvements to the townscape, including townscape character, land use, movement and linkages, which will help to create an enhanced environment for local businesses. No other residual effects expected.	Moderate to Major beneficial, permanent and long-term impact on local businesses as a result of additional footfall, business opportunities and an enhanced townscape as a result of regeneration.
Local Economy	Moderate beneficial, permanent and long-term impacts through the generation of 586 net operational jobs once complete and occupied. No other residual effects expected.	There are likely to be no significant intra-project effects on the local economy during the operational phase.
Local Townscape	Minor to Major beneficial, permanent townscape enhancements. Moderate to minor adverse to moderate beneficial, permanent visual impact on a number of views. No other residual effects expected.	Overall, the operational phase of the Proposed Development will give rise to minor to moderate effects on townscape and viewpoints. These intra-project effects are not considered to be significant in EIA terms.
Climate	Moderate-minor adverse effects in relation to embodied carbon emissions to atmospheric Greenhouse Gas concentrations. No other residual effects expected.	There are likely to be no significant intra-project effects in relation to the climate during the operational phase.

- 15.13 There is potential for intra-project effects during the operational phase of the Proposed Development in relation to Local Residents and Human Health, Local Businesses and the Local Townscape.
- 15.14 The socio-economic impacts together with the townscape and visual impacts are likely to give rise to cumulative effects on local residents, human health and local businesses. It is considered that there are likely long-term, permanent beneficial impacts arising from the interaction of effects.

Human Health during Operational Phase

- 15.15 Human Health is assessed as relevant within the technical chapters, which is considered a proportionate response for the Proposed Development. As with the construction phases, there are particular sensitive receptors that are more likely to experience a human health impact. During the operational phase these receptors are Local Residents, Visitors, and Local Businesses (in terms of their employees).
- 15.16 Post-mitigation the residual effects relating to human health factors during the operational phase are identified to be negligible in terms of Air Quality, Ground Conditions, Lighting, Noise, Traffic and Transport, Water Quality and Wind Microclimate. On this basis, it is considered that no significant effects are expected in respect to Human Health in EIA terms.
- 15.17 There are significant beneficial socio-economic and townscape impacts as a result of the Proposed Development. As with the construction phase, the Applicant is committed to working with Manchester City Council's Work and Skills Team and to enter into a Local Benefit Proposal (see Local Benefit Proposal by OVG submitted in support of the planning application). This will provide training and job opportunities that are available to local residents. This training includes those at school and career pathway guidance. This therefore has the potential to increase income and social mobility, which in turn is shown to improve health outcomes. These benefits are not just felt by those directly employed at the Proposed Development but also local businesses, who will benefit from the increase in visitors to the area and ongoing regeneration benefits.
- 15.18 In addition, the Proposed Development will lead to townscape and landscaping enhancements, including along the Ashton Canal towpath, which runs adjacent to the Site. The enhanced environment could encourage more people to use the site and canal towpath for outdoors recreation and exercise as well as a sustainable mode of transport.
- 15.19 Overall, the operational phase of the Proposed Development is considered to result in minor beneficial impacts on Human Health.

Mitigation Measures

- 15.20 Where relevant, the individual residual effects which contribute to the identified intra-project effects have been considered and mitigated where necessary and feasible. It is not considered that the intra-project effects would be significant in EIA terms and therefore no further mitigation measures have been proposed.



This report has been prepared for OVG Europe Limited and on the understanding that it will be made publically available.

All copyright and other proprietary rights in the report remain the property of Deloitte LLP, BuroHappold, Planit.i.e, and ME Engineers, and any rights not expressly granted in these terms or in the contract between Deloitte LLP and OVG Europe Limited are reserved.

No party other than OVG Europe Limited is entitled to rely on the report for any purpose whatsoever and thus Deloitte LLP and the Consultants accept no liability to any other party who is shown or gains access to this document.

The information contained within this report is provided to assist OVG Europe Limited with this Planning Application. The report makes use of a range of third party data sources. Whilst every reasonable care has been taken in compiling this report, Deloitte LLP and the Consultants cannot guarantee its accuracy.

Deloitte LLP is a limited liability partnership registered in England and Wales with registered number OC303675 and its registered office at 1 New Street Square, London, EC4A 3HQ, United Kingdom.

Deloitte LLP is the United Kingdom affiliate of Deloitte NSE LLP, a member firm of Deloitte Touche Tohmatsu Limited, a UK private company limited by guarantee ("DTTL"). DTTL and each of its member firms are legally separate and independent entities. DTTL and Deloitte NSE LLP do not provide services to clients. Please see www.deloitte.com/about to learn more about our global network of member firms. Real Estate Services regulated by RICS.

© 2020 Deloitte LLP. All rights reserved.