



Crown Street Phase 2, Manchester

April 2022

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Important notice: This Environmental Statement has been prepared by Deloitte Real Estate, with technical input from REC Ltd, GIA, Chris Burnett Associates, Vectos and WSP, "the Consultants". Chapter 1, Volume 1 of this Environmental Statement sets out the parties responsible for preparing each Chapter and associated figures and appendices.

Although we have read the Consultants' reports for consistency and provide our observations based on our knowledge and experience, we accept no liability or responsibility for the Consultant's Reports and will not be responsible for the technical content of Chapters 6-12, Volume 1, nor Volumes 2 – 3, nor the technical content of the associated separate Non-Technical Summary.

Preface to Addendum

0.1. This Non-Technical Summary (NTS) Environmental Statement Addendum ("the NTS ES Addendum") has been prepared on behalf of Renaker Build Ltd ('the Applicant') in respect of detailed reserved matters proposals for Phase C (education facility) of Crown Street Phase 2.

0.2. This NTS ES Addendum has been prepared to consider and re-assess, where required, any environmental impacts following the design development of Phase C and is submitted in respect of the associated Reserved Matters application.

0.3. The original Crown Street Phase 2 'Hybrid Planning Permission' was granted for in August 2020, under planning application 126668/FO/2020 ('the hybrid permission').

0.4. The hybrid permission comprises the following:

- Full Planning Permission (with no Reserved Matters) for three Phases, comprising:
 - Phase A: One residential building (building C4), a perimeter servicing and access route, public realm (including partial delivery of public park and landscaping), and private residential basement car park. (*Implemented and under construction*)
 - Phase B: One residential building (building C5), a perimeter servicing and access route, public realm (including delivery of remaining area of public park and landscaping), and private residential basement car park. (*Implemented and under construction*)
 - Phase D: A three storey, publicly accessible, basement Multi Storey Car park with vehicular access. (*Implemented and under construction*)
- Outline Planning Permission with all matters reserved for the Education Facility (Building C3), for Phase C.

0.5. Planning Permission 126668/FO/2020 has been subject to a couple of amendment applications, namely:

- 128226/NMC/2020 (approved 22 October 2020) - NMA for the variation of Condition 19 (Phase A - Noise Insulation for Residential Accommodation) and Condition 57 (Phase B - Noise Insulation for Residential Accommodation).
- 131955/NMC/2021 (approved 5 January 2022) - NMA for alterations to the layout of the Penthouse Level (Level 49 Duplex Lower and Level 50 Duplex Upper) of building C5, resulting in an increase of 2 units (0.2% increase) from 855 units to 857 units.

0.6. As required by the hybrid permission, this reserved matters application relating to Phase C provides full details of the following reserved matters:

- Access
- Appearance
- Landscaping
- Layout
- Scale

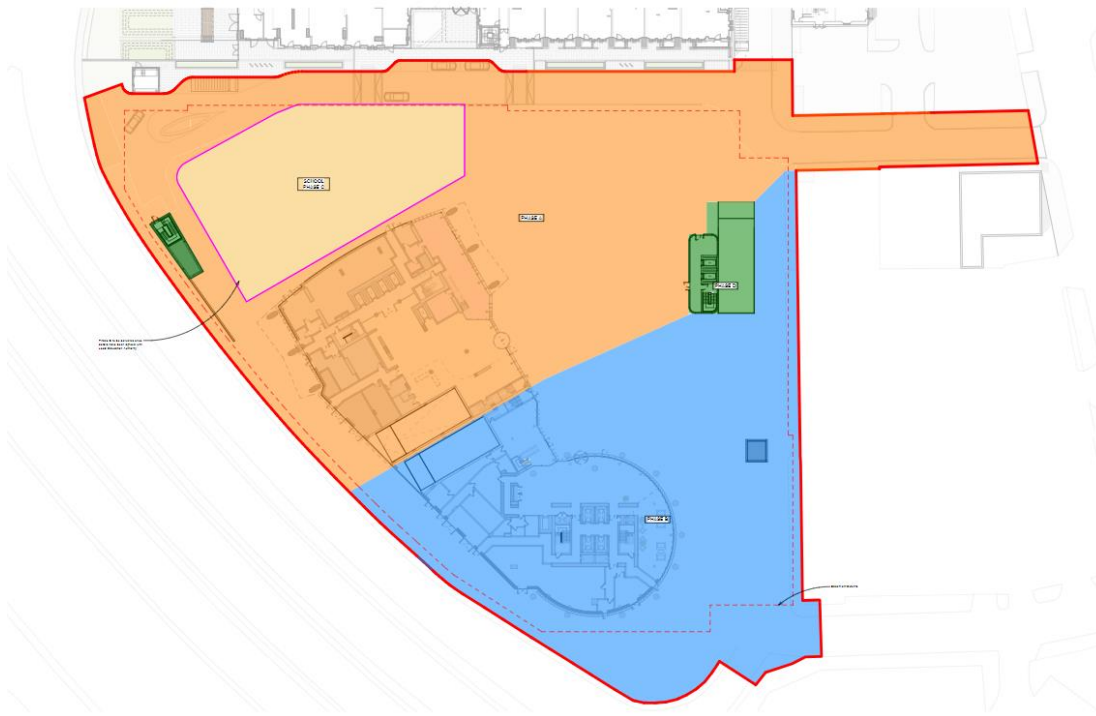
0.7. The hybrid planning permission established the principle of development, with a number of parameters for the outline phase (Phase C – School) to adhere to.

0.8. The approved Phase C outline details are identified in the following plans, which identify maximum heights and widths.

- Phasing Plan – Basement Level 1 (Drawing ref. 10292-Z1-SHP-G000-PL-B1-B5D801)
- Phasing Plan – Ground Level (Drawing ref. 10292-Z1-SHP-G000-PL-00-B5D802)

0.9. The Hybrid Application site measures approximately 1.1 ha and is bound by Silvercroft Street and Crown Street to the north, and the Mancunian Way to the south and west. This is commonly referred to as 'Crown Street Phase 2'.

Figure 1.1: Extract of Phasing Plan – Ground Level (source: SimpsonHaugh and Partners) with phases labelled.



Crown Street Phase 2 – Approved ES (April 2020)

0.10. An environmental impact assessment was prepared and submitted as part of the hybrid permission for Crown Street Phase 2. The EIA comprising Environmental Statement ('ES') Volume 1, ES Volume 2 (Appendices) and ES Volume 3 (Non-Technical Summary) was submitted and approved under planning permission 126668/FO/2020 in August 2020. The approved ES Volume 1 forms the basis of this addendum report.

Environmental Statement Addendum

ES Addendum Scope

- 0.11. The reserved matters proposals for Phase C are within the approved outline parameters and the approach has been therefore to augment the approved EIA Chapters rather than replace chapters. This has been undertaken via the preparation of additional technical assessments, as necessary, and these have been provided in the form of an EIA chapter addendum where updates are more significant and supplementary technical notes where updates are minimal or not required. In some instances where the discipline is unaffected by the reserved matters proposals neither a chapter addendum nor an EIA technical note has been provided.
- 0.12. Table 0.1 identifies the scope of the EIA submitted and approved as part of the hybrid permission ('Approved ES') against where ES Chapter Addendums and EIA Technical Notes (ES Appendix – Volume 2) have been prepared and submitted as part of the reserved matters application for Phase C of Crown Street Phase 2.

Table 0.1 Scope of Approved ES and ES Addendum

EIA Discipline	Responsibility	Approved ES	ES Addendum
Construction Management, Programme, Methodology and Phasing	Renaker Build Ltd	✓	Tracked changes (RBL)
Air Quality	Ensae (formerly Rec Ltd)	✓	EIA Technical Note (ES Volume 2 Appendix 6.3)
Noise and Vibration	Ensae (formerly Rec Ltd) – approved ES Fisher Acoustics – ES Addendum	✓	ES Chapter Addendum (Chapter 7B) and NTS Addendum Noise Report prepared by Fisher Acoustics (2022) ES Volume 2 Appendix 7.2
Solar Glare	GIA	✓	EIA Technical Note (ES Volume 2 Appendix 8.2)
Sunlight, Daylight and Overshadowing	GIA	✓	✗
Townscape and Visual Impact	Chris Burnett Associates	✓	✗
Traffic and Transport	Vectos	✓	✗
Wind Microclimate	WSP	✓	EIA Technical Note (ES Volume 2 Appendix 12.3)

ES Addendum Format

- 0.13. The NTS ES Addendum has been formatted to ensure it is fully transparent and accessible to the Local Planning Authority and third parties seeking to understand what effect the reserved matters details of Phase C (the education facility) will have on the environmental impacts arising from Crown Street Phase 2.
- 0.14. Updates have been made to ES Volume 1, Volume 2: Technical Appendices and Volume 3: Non-Technical Summary. Any additional technical report addendums have been included as additional appendices and referenced as such.
- 0.15. Where a chapter addendum (ES Volume 1) and NTS addendum (ES Volume 3) or EIA technical note (submitted as an appendix – ES Volume 2) has been prepared in support of the ES addendum for the Phase C reserved matters application this is indicated at the beginning of each chapter. Where the chapter is unaffected by the reserved matters proposals and neither a chapter addendum nor an EIA technical note has been provided this is also indicated. This is shown as follows:

1 Introduction

▲ **A1 ES Addendum Alterations**

The following changes have been made to this chapter to take into account the detailed reserved matters proposals for Phase C of Crown Street Phase C which received outline consent as part of the hybrid planning permission:

- Inclusion of information regarding the submission of a reserved matters application for Phase C, the education facility at Crown Street Phase 2.

Text added into existing paragraph and table

0.16. When text has been added to an existing paragraph it has been identified through tracked changes using underlined and red font, as follows:

<u>REC Limited</u>	<u>on Quality</u>	
<u>Ensafe (formerly known as REC Limited)</u>	Noise & Vibration <u>(Chapter 7A)</u>	BSc (Hons), AMIOA
<u>Fisher Acoustics</u>	Noise and Vibration <u>(Chapter 7B)</u>	BEng
	Davlight, Sunlight and	BSc, MSc, CIHT, CII T

New Paragraphs

0.17. When new paragraphs have been added the paragraph numbering has been updated, using strikethroughs, underlined and red font, as follows:

1.7 Renaker Build Ltd is submitting a reserved matters application for Phase C (the education facility) of the Proposed Development. This ES addendum has been prepared to support the reserved matters application. The ES addendum considers the reserved matters (detailed) design of the education facility and where required supporting statements and additional assessments have been prepared by the relevant EIA consultants.

~~1.7~~1.8 The proposed Site plan is included at Figure 1.2.

~~1.8~~1.9 This ES sets out the findings of an Environmental Impact Assessment ("EIA") carried out in respect of the Proposed Development of the Site.

New Chapter(s)

0.18. When a new chapter has been added a letter 'A' has been added to the numbering of the previous chapter (of the same EIA discipline) and the letter 'B' included to denote the new chapter. This has been done using underlined and red font, as follows:

7 (A)Noise and Vibration

Introduction

7.1 This Chapter of the ES assesses the likely significant effects of the Proposed Development with respect to Noise & Vibration. This Chapter also describes the methods used to assess the

▲ 7 (B)Noise and Vibration

Introduction

7.208 This Chapter of the ES discusses the likely significant effects of the Proposed Development with respect to noise and vibration. This Chapter also describes the methods used to assess the

1 Introduction

A1 NTS ES Addendum Alterations

The following changes have been made to this chapter to take into account the detailed reserved matters proposals for Phase C of Crown Street Phase 2 which received outline consent as part of the hybrid planning permission:

- Updated to reflect that the hybrid planning application for Crown Street Phase 2 has been submitted and approved (under planning application ref: 16668/FO/2020) and subsequent amendment applications, including most recent NMA which approved alterations to the layout of the penthouse level of building C5, increasing residential units from 855 to 857.
- Update to the description of development for Crown Street Phase 2 to ensure consistency with the decision notice (ref: 16668/FO/2020) for the hybrid permission.
- Update to proposed development to reflect increase in number of residential units being delivered – 857 units being delivered at part of Crown Street Phase 2.
- Inclusion of information regarding the submission of a reserved matters application for Phase C, the education facility at Crown Street Phase 2.
- Consultation undertaken with Local Ward Councillors and the agreement that no further public consultation required in relation to the Phase C Reserved Matters details.

- 1.1 This Environmental Statement (ES) Non-Technical Summary has been prepared in support of a planning application submitted to Manchester City Council (MCC) for a residential led, mixed-use development on land at Crown Street, Manchester. The applicant is 'Renaker Build Ltd'.
- 1.2 Renaker Build Ltd ~~is sitting submitted~~ a hybrid planning application. The Applicant is seeking Full Planning Permission for two new residential tall buildings with ground floor commercial uses, a multi-storey basement car park and a park. Outline Planning Permission ~~is sought was~~ also secured for a new educational facility with all matters reserved (the 'Proposed Development'). The (NTS) Environmental Statement Addendum therefore relates to the Reserved Matters application.
- 1.3 The CSPH2 Site measures approximately 1.1 ha and is bound by Silvercroft Street and Crown Street to the north, and the Mancunian Way to the south and west ('the Site'). This is commonly referred to as 'Crown Street Phase 2' in Manchester City Centre. The part of the Site to which the Reserved Matters relate is referred to as Phase C.
- 1.4 The Environmental Impact Assessment (EIA) has been carried out in accordance with the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 (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.
- 1.6 This NTS is designed to be read on its own. It explains the environmental implications of the Proposed Development to the public, informing them, and allowing them to decide whether they would like more detail on the Proposed Development.

- 1.7 More information and greater technical detail is available in the Environmental Statement (ES). The ES is a separate document which has been submitted as part of the planning application. Please see Section 13, Availability of Environmental Statement for details on how and where to view the ES.

What is being proposed?

- 1.8 The ES has been submitted in order to assess the Environmental Impact of the Proposed Development. The Site is located within Manchester City Centre and has been identified for residential led development through the Great Jackson Street Framework (2018).

- 1.9 The Planning Permission has the following description of development is as follows:

"Full planning permission for the erection of two 52-storey residential buildings (Use Class C3) each incorporating a podium accommodating residential amenity facilities and ground floor and first floor commercial units (Use Classes A1, A2, A3, or D1), private and public basement car parking, landscaping and a public park, servicing and access arrangements, highways improvements, and associated works (Phases A, B, and D as defined on Drawing Reference: 10292Z1SHPG000PL00 B5D802 and 10292Z1SHPG000PLB1B5D801). Outline planning permission (with all matters reserved) for an educational facility (Use Class D1) (Phase C as defined on Drawing References: 10292Z1SHPG000PL00B5D802 and 10292Z1SHPG000PLB1B5D801)."

~~"Full planning permission for the erection of two 51-storey residential buildings (Use Class C3) each incorporating a podium accommodating residential amenity facilities and ground floor and first floor commercial units (Use Classes A1, A2, A3, & D1), basement car parking, landscaping and a public park, servicing and access arrangements, highways improvements, and associated works (Phases A, B, and D as defined on Drawing Reference: 10292-Z1-SHP-G000-PL-00-B5D802 and 10292-Z1-SHP-G000-PL-B1-B5D801). Outline planning permission (with all matters reserved) for an educational facility (Use Class D1) (Phase C as defined on Drawing References: 10292-Z1-SHP-G000-PL-00-B5D802 and 10292-Z1-SHP-G000-PL-B1-B5D801)."~~

- 1.10 Planning Permission 126668/FO/2020 has been subject to a couple of amendment applications, namely:

- 128226/NMC/2020 (approved 22 October 2020) - NMA for the variation of Condition 19 (Phase A - Noise Insulation for Residential Accommodation) and Condition 57 (Phase B - Noise Insulation for Residential Accommodation).
- 131955/NMC/2021 (approved 5 January 2022) - NMA for alterations to the layout of the Penthouse Level (Level 49 Duplex Lower and Level 50 Duplex Upper) of building C5, resulting in an increase of 2 units (0.2% increase) from 855 units to 857 units.

- ~~1.10~~ **1.11** 1.11 The Proposed Development is for the redevelopment of the Site to provide a high quality scheme comprising residential uses within two tall buildings visually connected by a two storey podium, a new public park and additional public realm enhancements, public and private car parking within a multi-storey basement, and a single form entry primary school. This will include residential amenity and commercial uses at the podium level on the ground, first and second floors.

- ~~1.11~~ **1.12** 1.12 The development comprises the following buildings:

- C3 – Education Facility;
- C4 – a residential building with associated commercial and residential amenity uses at podium level and a three level, multi-storey private basement car parking; and

- C5 – a residential building with associated commercial and residential amenity uses at podium level and a three level, multi-storey private basement car parking.

1.121.13 In addition, a three level, multi-storey basement public car park will be delivered. This will be located under the park.

1.131.14 The Proposed Development forms the second phase of a wider phased delivery for Crown Street as set out within the Great Jackson Street Framework. The follows on the planning permission approved for Crown Street Phase 1 in July 2018 and will facilitate delivery of the Framework masterplan. The proposals will derive substantial public benefits by delivering a single form entry primary school and new public park.

1.141.15 The Proposed Development includes:

- 85~~75~~ residential units as a mix of 1, 2 and 3 bedroomed apartments;
- 244 residents' car parking spaces over a three level basement car park, which includes 24 accessible spaces (10%) and 24 electric charging points (10%);
- 389 public car parking spaces over a three level basement car park, which includes 19 accessible spaces (5%). The Applicant will consider incorporating will consider incorporating electric vehicle charging into the proposals and any car park operator will monitor demand for this as the technology becomes more prevalent in motor vehicles. Should demand increase then the provision can be adjusted accordingly.
- 85~~75~~ cycle spaces (Building C4 – 414 spaces, Building C5 – 441 spaces);
- Two retail units providing 490 sq. m. (NIA) of commercial space;
- Ancillary residential amenity space including a private roof terrace, gym and sauna;
- A single form entry primary school, including nursery and private day care;
- A new 0.5ha (hectare) public park; and
- Additional public realm enhancements.

1.16 The ES sets out the findings of an EIA carried out in respect of the Proposed Development.

1.151.17 Renaker Build Ltd is submitting a reserved matters application for Phase C (the education facility) of the Proposed Development. This ES addendum has been prepared to support the reserved matters application. The ES addendum considers the reserved matters (detailed) design of the education facility and where required supporting statements and additional assessments have been prepared by the relevant EIA consultants.

Where is this happening?

1.161.18 The CS Ph2 Site is located within Manchester City Centre. It is bound by Silvercroft Street and Crown Street to the north and the Mancunian Way to the south and west. North of the Site, lies the Grade II Listed former Bridgewater Canal Offices.

1.19 The CSPH2 Site is currently accessed from Silvercroft Street and Crown Street, the latter of which forms a slip road off Mancunian Way.

1.171.20 1.7. The School Site is located located to the north west of the Hybrid Application site and is bound by Crown Street Phase 1 (Elizabeth Tower) to the north, Mancunian Way to the west and Tower C4 of Crown Street Phase 2 (commonly referred to as the Blade) to the south ('the

Site'). The Phase C site is accessed from Silvercroft Street with egress provided along the western edge of buildings C3 and C4, adjacent to the Mancunian Way.

What is located on the Site at the moment?

1.181.21 The CSPH2 Site extends to approximately 1.1ha in area.

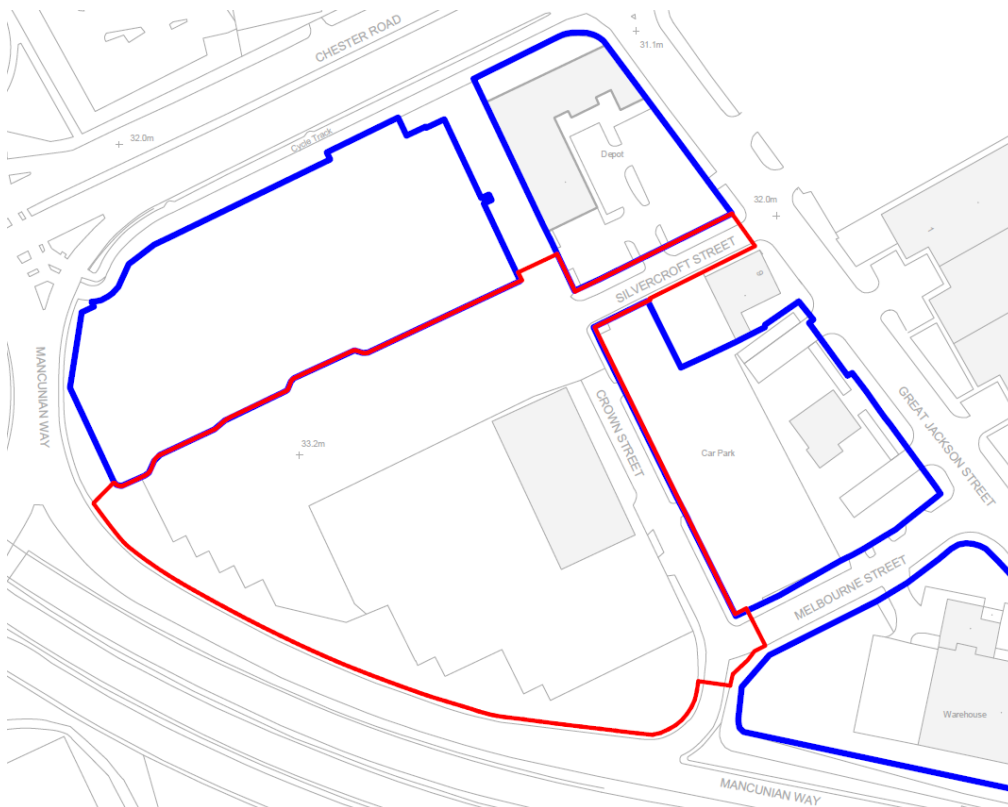
1.191.22 The Site has been historically underutilised, currently used as site compound for construction works on an adjacent development. However, previous to this, its permanent use was as a private surface level car park providing approximately 333 spaces that are understood to have been predominantly used by commuters.

1.201.23 The Site is not located within a Conservation Area and there are no Listed Buildings on site, however some heritage assets have been identified in the vicinity of the Site.

1.211.24 There are no Environmental Designations with respect to Ecology within the Site. Furthermore, there are no identified sites with ecological designations within the vicinity of the Site.

1.221.25 Figure 1.1 below shows the Site location plan.

Figure 1.1 (Crown Street Phase 2) Site location Plan (SimpsonHaugh and Partners).



Why is this development being brought forward?

1.231.26 The Site sits within the Framework area and is situated on a key gateway into Manchester City Centre. The Development Framework was originally endorsed in 2007 and was updated in 2015. Most recently, the Framework was updated to reflect the potential for further growth in this part of Manchester City Centre. Following public consultation organised by MCC, the Final

Framework was endorsed by the Executive Committee in January 2018 and forms a material consideration in the determination of planning applications within its boundary.

~~1.24~~1.27 Existing uses within the Framework area include light industrial units and commuter surface car parking, although a number of key plots are now under construction to deliver new residential-led schemes.

~~1.25~~1.28 Of particular note, under construction is Crown Street Phase 1, located directly adjacent to the Site, which will deliver two residential towers of 21 and 51 storeys. Once completed Crown Street Phase 1 will comprise of 664 residential units with a mix of 1, 2 and 3 bedroom apartments, as well as townhouses and duplex apartments. Residential amenity space is provided in each building, as well as a communal terrace and a Doctor's Surgery will also be provided.

~~1.26~~1.29 The Proposed Development forms the basis of Crown Street Phase 2, which is shown in Plot C within the Great Jackson Street Framework (2018).

~~1.27~~1.30 The Proposed Development will bring forward the regeneration of this currently under-utilised land to complement the regeneration objectives in this area of the City Centre and improve accessibility between the Castlefield, First Street, Deansgate, Hulme and the wider City Centre.

~~1.28~~1.31 The Site's urban location, transport links, brownfield nature and ability to sustainably contribute to wider strategic aims are key elements in its selection as a suitable site for development.

Who has been consulted?

~~1.29~~1.32 The Proposed Development has been developed following consultation with the project partners in consultation with Manchester City Council (MCC), Greater Manchester Police, Historic England, Greater Manchester Archaeological Advisory Service, Manchester Airport Safeguarding Team, Manchester City Council Planning, Environmental Health and Highway Officers, and Places Matter! Design Review Panel.

~~1.30~~1.33 A pre-application consultation exercise has been undertaken with local residents and businesses, in the form of a public exhibition, held on 27 November 2019 at the Deansgate Square Marketing Suite, Great Jackson Street, Manchester. A range of communication methods were used to provide information about the Proposed Development, seeking to ensure that people had the opportunity to provide feedback. These methods included:

- Prior to the public exhibition, leaflets were delivered to c. 2,500 properties in the vicinity of the Site;
- A briefing pack sent to elected Ward Members inviting them to a separate briefing session ahead of the public exhibition;
- An invite to the public exhibition was sent to the Castlefield Forum, a local interest group which are actively involved in development of the Castlefield area and the Britannia Basin Community Forum;
- A feedback form was available at the public exhibition for people to provide comments on the proposal and an e-mail address was provided for people to send in comments.
- A public exhibition to give people the opportunity to view the plans and discuss the Proposed Development with members of the project team; and
- A consultation email address made available for people to ask questions and provide their feedback.

~~1.31~~1.34 A total of 48 people attended the exhibition and 21 feedback forms were received on the day. Comments were also verbally provided to members of the design team at the event and three email comments were received after the event.

1.35 The evolution of the scheme has been influenced by the findings of public consultations. Further information on this process and the feedback gained is available in the Statement of Consultation submitted in support of the planning application.

1.36 As part of the reserved matters proposals for Phase C, Aa briefing email was sent to Councillor Johns, Councillor Jeavons and Councillor Davies. This outlined the detailed proposals and invited local Ward Councillors to a briefing session.

1.37 A briefing session subsequently took place with Councillor Jeavons on 24 February 2022 via Teams, which was attended by representatives from Arkilab, Deloitte and Renaker Build Ltd. Councillor Jeavons expressed his support for the detailed proposals being brought forward. The scope and requirement for additional public consultation was also discussed with Councillor Jeavons, whereby it was agreed that further public consultation was not required in respect of the reserved matters application for the school, particularly given that:

- The principle of the proposals for education facility is already established by the outline planning permission;
- The hybrid planning permission was subject to an extensive public consultation exercise, as referenced above; and
- The detailed proposals for the education facility are within the parameters approved as part of the hybrid planning permission

2 The Proposed EIA Development

A2 NTS ES Addendum Alterations

The following changes have been made to this chapter to take into account the detailed reserved matters proposals for Phase C of Crown Street Phase 2 which received outline consent as part of the hybrid planning permission:

- Updates to reflect that Buildings C4 and C5 are under construction.
- Inclusion of further details on what Building C3, the education facility including what it will look like, which has been developed as part of the reserved matters application.

What will the redevelopment process involve?

2.1 Broadly, the construction process Proposed Development will involve:

- Site clearance and enabling works;
- Earthworks, levelling and ground compaction;
- Laying foundations;
- Building of the new structures;
- External works and hard and soft landscaping;
- Phased completion of public realm and S.278 works;
- Phased completion of communal external space and links;
- Completion of internal finishes to communal space; and
- Internal fit out of the main structures.

2.2 Machinery used during redevelopment will consist of standard demolition and construction plant, and will include plant items such as: excavators, concrete crushing plant, mobile cranes, compacting and vibrating mechanical plant, wheel washing and road sweeping equipment.

2.3 The Site will be secured and surrounded with hoardings to ensure public safety and mitigate adverse environmental effects during construction.

How long will it take?

2.4 Subject to planning permission being granted, the construction programme for the development is expected to commence in Q3 2020 and is due to compete Q4 2028.

2.5 This programme is based on normal construction working hours in line with MCC Guidance of 7.30am to 6pm Monday to Friday and 8am to 2pm on Saturdays. No works will occur outside these hours unless agreed in advance with MCC.

2.52.6 Crown Street Phase 2 Phases A, B and D are currently under construction and will deliver two new 52 storey residential towers under planning permission Ref: 126668/FO/2020. It includes a public underground car park, primary school and a 0.5ha public park and is proposed for completion in 2024. The first tower of Crown Street Phase 2, the Blade, will provide 414 new

homes. The second tower, Three60, will provide a further 441 new homes and is also expected to be completed by the end of 2024.

What will it look like afterwards?

2-62.7 Building C4 and Building C5 are both proposed to be 51 storeys in height, connected by a two storey podium. The building has been designed to include active ground floor uses and use interesting materials to create a distinctive yet complementary landmark.

2-72.8 Building C5 is circular in plan and fronts Melbourne Road, Mancunian Way and the public park, whilst Building C4 is a slender blade shape and fronts Mancunian Way and the public park.

2-82.9 The materiality of the Proposed Development includes brick for the podium element, which has been designed to respond to the former Bridgewater Canal Offices. The tone of the brick, a light grey brick has been chosen to contrast and complement the surrounding historic warehouse buildings and the former Bridgewater Canal Offices rather than try to replicate, giving it its own clear identity.

2-92.10 The overall approach for the elevational treatment of the Phase 2 towers has been designed to complement the emerging context of the Great Jackson Street Framework area. Consideration has been given to the composition of the towers (including tower C2 of Crown Street Phase 1, currently on site). Tower C2 and C5 are darker counter points to the highly reflective and lighter appearance of the central C4 tower, which looks to reflect light in and around the park.

2-102.11 The Proposed Development includes high quality materials throughout its design.

2-112.12 The new public park provides an informal green space with areas of open lawn. Informal pathways lead users through the space where people are encouraged to stop and play within the park. Naturalistic style planting with tree groves and swathes of grasses and herbaceous planting will help to create seasonal interest within the park.

2.13 The Reserved Matters application for Phase C, the education facility (Building C3) will deliver a 3 storey + rooftop building which is within the parameters approved as part of the original hybrid planning permission for Crown Street Phase, which provides outline consent for Phase C. the design detailing and materiality of the school have been developed and carefully considered the approved materials palette at the podium level on Buildings C4 (The Blade) and C5 (Three60) of Crown Street Phase 2 and the adjacent Crown Street Phase 1 development.

2.14 The reserved matters details for education facility consists of an articulated high-quality masonry façade to create a scale that is human in perception and clearly recognisable as a neighbourhood street frontage.

2.15 The built form will consist of a brick façade, including a range of texture and colour to provide individuality whilst complementing the surrounding streetscape and wider area. The final choice of brick colour will be determined at detailed design stage.

2.16 An external play area is proposed for the primary school at the roof level (third floor) and an external early years play area is located at the ground floor level (adjacent to Building C4 – The Blade).

2.12 Building C3, the Education Facility will be delivered to shell and core and will be 2-3 storeys in height. Due to the need to coordinate a detailed design with the Education Authority, details on the appearance of Building C3, the Education Facility, will be resolved during future Reserved Matters Applications.

3 Alternative Options

A3 NTS ES Addendum Alterations

No alterations have been made to this chapter as part of the NTS ES addendum prepared in support of the reserved matters application for Phase C of Crown Street Phase 2, which received outline consent as part of the hybrid permission.

- 3.1 The ETA Regulations require the ES to identify the main alternatives that were considered during the design process.
- 3.2 The Proposed Development has been influenced by a range of factors, including location, surrounding land use and input from MCC, Statutory and Non-Statutory Consultees and other stakeholders.
- 3.3 The wider project team has also played an important part in influencing the design of the Proposed Development to ensure that likely significant environmental effects are avoided or mitigated. The resulting scheme, is described in further detail in Section 2, 'The Proposed ETA Development'.
- 3.4 The Site is currently used as a site compound for construction works on an adjacent development. However, prior to this its permanent use was as a surface level car park. The Site is currently not fully utilised in its current form and does not make a positive contribution to the streetscape, nor does it reinforce or complement the surrounding and emerging context.
- 3.5 The Site has the potential to make an important contribution to the regeneration of this area of the City Centre, improving the aesthetic and connections around the Site.
- 3.6 A number of alternatives have been considered in relation to the Site and Proposed Development. These include no action (the 'Do Nothing' scenario), alternative sites, alternative uses, and alternative layouts and designs.
- 3.7 The "do nothing" scenario has been discounted due to the established need for the regeneration of the Site and the benefits it will bring.
- 3.8 The Site is considered suitable for high-density development given its highly accessible location within the City Centre and the Great Jackson Street Framework area. The Site is considered suitable for residential use in terms of its urban location, close proximity to established neighbourhoods, transport links and connections with Manchester City Centre.
- 3.9 Within the above context, it is not considered appropriate to consider alternative sites.
- 3.10 The proposed use of the Site has been influenced by the Great Jackson Street Framework (2018) which the Site is located within, alongside the context of identified need for high quality residential accommodation, viability and deliverability. As such, the consideration of alternative uses was not considered to be appropriate.
- 3.11 Alternative layouts and designs have been considered throughout the design process and have been informed by consultation with stakeholders and the public and by the Project Team, as addressed within the Design and Access Statement.

- 3.12 Considerations around alternative layouts and designs reflected upon a number of options; however the Proposed Development is considered to represent the most appropriate design in respect of the various considerations influencing the design.

4 Environmental Impact Assessment

A4 ES Addendum Alterations

The following changes have been made to this chapter to take into account the detailed reserved matters proposals for Phase C of Crown Street Phase 2 which received outline consent as part of the hybrid planning permission:

- Inclusion of information on informally agreeing the scope of the ES addendum with the Local Planning Authority.
- Inclusion of details relating to the scope of the ES addendum.

What is an EIA?

- 4.1 The EIA process is the mechanism by which development proposals are appraised in terms of environmental criteria, in addition to socio-economic, engineering and technical considerations.
- 4.2 The purpose of the EIA is to establish the nature of development proposals, and the environment in which they are likely to take place, in order to identify likely significant effects on the environment that may arise.
- 4.3 Both the short-term and long-term effects of development, including temporary and permanent impacts, are considered. This is done by comparing the existing situation at the start of the work (baseline) with the projected situation during and after the Proposed Development.
- 4.4 EIA is required pursuant to the EIA Regulations, because the Proposed Development parameters exceed the relevant screening thresholds outlined in Schedule 2 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 (as amended in 2015 and 2017). The EIA has been carried out in accordance with the requirements of the EIA Regulations, and in line with best practice guidance.
- 4.5 This non-technical summary forms an important part of the EIA process. Please refer to Section 1 'Introduction' for more detail on the non-technical summary.

What environmental effects does the EIA consider?

- 4.6 EIA Scoping has been undertaken to identify the likely significant effects on the environment that may arise from the construction and operational phases of the Proposed Development. This was done with reference to best practice guidance.
- 4.7 The results of the scoping exercise have determined the technical subject areas of the EIA, set out in Table 4.1.

Table 4.1: Scope of EIA and scope of ES Addendum

EIA Subject Areas	Scope of ES Addendum
Air Quality	<u>EIA Technical Note (ES Volume 2 Appendix 6.3)</u>
Daylight, Sunlight and Overshadowing	<u>No updates</u>

EIA Subject Areas	Scope of ES Addendum
Solar Glare	EIA Technical Note (ES Volume 2 Appendix 8.2)
Townscape and Visual Impact	No updates
Noise and Vibration	ES Chapter Addendum (Chapter 7B) and Noise Assessment (ES Volume 2 Appendix 7.2)
Traffic and Transport	No Updates
Wind Microclimate	EIA Technical Note (ES Volume 2 Appendix 12.3)

4.8 A copy of the EIA Scoping Report is included at Appendix 2.1. Scoping responses have been received from officers and consultees confirming that the scope of the EIA proposed was appropriate.

[4.9](#) [In support of the reserved matters application for Phase C, education facility, a proposed EIA scope for the ES Addendum was informally submitted to the Local Planning Authority on 1 March 2022 and was agreed with the Case Officer at a pre-application meeting on 3 March 2022.](#)

[4.94.10](#) Table 4.2 illustrates the organisations which have been consulted during the pre-application process.

Table 4.2: List of Consultees Engaged With

Consultees
Greater Manchester Police
Greater Manchester Archaeological Advisory Service
Manchester City Council Environmental Health Officers
Manchester City Council – Local Education Authority
Manchester City Council Highways
Places Matter! Design Review Panel
Manchester Airport Safeguarding Team
Castlefield Forum
Britannia Basin Community Forum

[4.104.11](#) Table 4.3 outlines the statutory consultees which were consulted by Manchester City Council during the scoping process:

Table 4.3: List of Statutory Consultees

Consultees
Manchester City Council
Historic England
Natural England
Highways
Environment Agency
United Utilities

[4.114.12](#) The following topics were not included in the assessment, as they were identified as not likely to have significant environmental effects and have therefore been 'scoped out' of the EIA:

- Agricultural Circumstances
- Aviation
- Archaeology
- Arboriculture
- Human Health and Climate Change
- Ecology
- Water Resources
- Electronic Interference
- Ground Conditions
- Heritage
- Socio-Economic

4.124.13 In addition to the effects resulting from the Proposed Development, other developments within the wider area have been considered. This is to account for any accumulation between effects resulting from the Proposed Development and from these surrounding developments. The applicant has sought to agree nearby schemes for the cumulative assessment with MCC via the scoping process. For further details on the identified cumulative developments please refer to Appendix 2.2 the Environmental Statement.

4.134.14 In addition to the cumulative developments, the Site sits within the Great Jackson Street Framework area. The cumulative impact of the development as envisaged in the framework will be qualitatively assessed.

How will environmental effects be managed?

4.144.15 Environmental controls (or mitigation measures) will be introduced to eliminate, reduce or offset likely significant adverse environmental effects resulting from the Proposed Development. Mitigation measures are described in greater detail in the individual technical ES chapters (6 to 12), and summarised in Chapter 14 of the ES.

4.154.16 The environmental controls proposed include:

- Preparation of a Construction Management Plan (CMP) which clearly sets out the methods of managing environmental issues for all involved with the Proposed Development, including supply chain management.
- Requirement to comply with the CMP included as part of the contract conditions for each element of the work. All contractors tendering for work will be required to demonstrate that their proposals can comply with the content of the CMP and any conditions or obligations secured through the planning permission;
- In respect of necessary departures from the above, procedures for prior notification to the Council and affected parties would be established;
- Establishing a dedicated point of contact and assigning responsibility to deal with demolition and construction related issues if they arise. This would be a named representative from the construction team; and
- Regular dialogue and engagement with the Council and the local community.

4.164.17 It is anticipated that these controls would be secured by appropriate planning conditions or obligations.

Who has been involved in the EIA process?

4.174.18 The EIA process has involved communication and collaboration between the applicant, Deloitte Real Estate, MCC, the project team (shown in Table 4.3), statutory consultees and the public.

4.184.19 Table 4.5 shows the project team and their roles.

Table 4.5: Project Team

Role	Organisation
The Applicant	Renaker Build Ltd
Architects	SimpsonHaugh and Partners and Arkilab
Landscape Architects	TPM Landscape Architects
Town Planning, EIA Co-ordination	Deloitte Real Estate
Historic Environment	Stephen Levrant Heritage Architecture
Noise and Vibration	Fisher Acoustics – ES Addendum Ensafe (formerly REC Limited) – hybrid permission
Sunlight, Daylight and Overshadowing	GIA
Solar Glare	GIA
Wind	WSP
Ground Conditions	WSP
Air Quality	Ensafe (formerly REC Limited)
Ecology	ERAP
Transport	Vectos
Townscape and Visual Impact	Chris Burnett Associates

What were the results of the EIA?

4.194.20 The following sections summarise the methodology used in determining the likely significant effects of the Proposed Development and summarise the outcomes of the EIA.

4.204.21 This section is organised into technical subjects. Greater detail can be found in the relevant chapters of the Environmental Statement (6 to 10) and their technical appendices.

4.214.22 The technical topics are those elements of the environment considered likely to experience significant effects and therefore assessed in the EIA.

4.224.23 With regard to the assessment for each topic, the subsequent sections discuss:

- Methodology and scope;
- Baseline conditions;
- Likely significant effects of the Proposed Development;
- Mitigation;
- Cumulative effects with other developments; and
- Likely 'residual' effects following mitigation.

4.234.24 A summary of proposed mitigation measures and residual effects is also included in Chapter 14 of the ES Volume 1.

Significance of Effects

4.244.25 The likely effects of the Proposed Development have been classified according to their significance.

4.254.26 Significance is determined as a function of both the scale (magnitude) of change from the existing (baseline) environment and the sensitivity of environmental receptors, such as population, fauna, flora, soil, water, air, climatic factors, material assets, including the architectural and archaeological heritage, landscape and the inter-relationship between these factors. Chapter 2 of the ES Volume 1, EIA Methodology, describes this process in greater detail.

4.264.27 This serves as a useful guide for specialists to assess effect significance. Where discipline-specific methodology has been applied that differs from these generic criteria, this has been clearly explained within the relevant ES chapters Volume 1 (6 to 10).

4.274.28 Table 4.6 illustrates how most significance ratings were determined.

Table 4.6: Significance of Effect Ratings

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

4.284.29 For the purposes of the EIA, effects concluded to be 'moderate' or 'major' are considered to be significant, while 'minor' or 'negligible' are considered not significant.

4.294.30 The following sections of this NTS summarise the individual assessments conducted for each topic considered within the Environmental Statement.

5 Construction Management and Phasing

A5 NTS ES Addendum Alterations

The following changes have been made to this chapter to take into account the detailed reserved matters proposals for Phase C of Crown Street Phase 2 which received outline consent as part of the hybrid planning permission:

- Updates to reflect that construction management plan was been approved by the local planning authority.
- Updates to reflect that Buildings C4 and C5 are under construction.

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

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

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

5.4 ~~The A~~ Construction Management Plan has been submitted and approved by the Local Planning Authority, which will describes arrangements and procedures for managing these key risk areas in more detail, as well as any future risk, and also the resources, including personnel, which will be applied to the scheme and which will ensure the Health and Safety of all those working on or affected by the project works.

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

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

5.7 The Main Contractor has already entered into dialogue ~~will at the earliest possible stage of the project enter into dialogue~~ with all relevant parties, with Buildings C4 and C5 currently under

| construction. This includes dialogue with,~~including~~ neighbours to ensure there is effective coordination throughout all stages of construction.

6 Air Quality

A6 NTS ES Addendum Alterations

No alterations have been made to this chapter as part of the NTS ES addendum prepared in support of the reserved matters application for Phase C of Crown Street Phase 2, which received outline consent as part of the hybrid permission.

An EIA Technical Note, included at Appendix 6.3 (ES Volume 2) has been prepared by Ensafe (formerly REC Ltd) to consider the environmental impacts arising from the detailed reserved matters proposals for Phase C (education facility). The EIA Technical Note confirms that the conclusions of the previous assessment (below) remain valid.

Introduction

- 6.1 REC Ltd was commissioned by Renaker Build Limited to undertake an Air Quality Environmental Impact Assessment in support of a planning application for a Proposed Development located at Crown Street, Manchester.

Baseline

- 6.2 The Site is located within an area identified by Manchester City Council as experiencing elevated pollutant concentrations relating to considerable sources of road vehicle exhaust emissions in the vicinity. Subsequently, the Proposed Development may introduce future sensitive receptors to an area experiencing elevated pollutant levels. Additionally, the Proposed Development also has potential to cause air quality impacts at existing sensitive locations during the construction and operational phases. These may include fugitive dust emissions from construction process, or additional road vehicle exhaust emissions associated with development related traffic generation

Construction Phase

- 6.3 Fugitive dust emissions associated with construction phase process were assessed in accordance with the widely recognised Institute of Air Quality Management methodology. Assuming good practice dust control measures are implemented, the residual significance of potential air quality impacts from dust generated by earthworks, construction and trackout activities was predicted to be **negligible** on a temporary basis and therefore **not significant**.

Operational Phase

- 6.4 Dispersion modelling was undertaken in order to predict air quality impacts as a result of the emissions from the local highway network and additional vehicle trips associated with the Proposed Development. Overall impacts upon sensitive receptor locations within the vicinity of the Site were determined to be **negligible** on a permanent basis and therefore **not significant**, in accordance with the relevant guidance.
- 6.5 In addition, dispersion modelling was undertaken to quantify pollutant concentrations across the Site and assess potential exposure of future users. The results indicated that exceedances of the relevant Air Quality standards were exceed at ground to first floor levels of Buildings C3, C4, and C5 of the Proposed Development. In order to protect residents from poor air quality, appropriate mitigation measures have been recommended.

Summary of Likely Effects

- 6.6 Predicted impacts on annual mean nitrogen dioxide pollutant concentrations as a result of operational phase exhaust emissions were predicted to range from moderate adverse, slight

adverse and negligible at the assessed sensitive receptor locations. Predicted impacts on particulate matter concentrations were predicted to be negligible on a permanent basis at all sensitive receptor locations considered. All operational phase impacts are considered on a permanent basis.

- 6.7 The overall significance of potential impacts was determined to be **not significant**, in accordance with the Environmental Protection UK and Institute of Air Quality Management guidance.

Mitigation

- 6.8 Proposed Development will be required to incorporate mechanical ventilation systems to ground and first floor levels of Buildings C4, and C5, and to all floor levels of Buildings C3, as a result of exceedances of the air quality objectives for nitrogen dioxide, the ventilation systems will include individual Nitrogen Oxide filtration units which will effectively remove Nitrogen Oxide pollutants, reducing the concentrations to acceptable and safe levels.

Cumulative Effects

- 6.9 Cumulative effects are defined as those that occur as a result of combined past, current and future activities that may impact collectively over time. The Chapter has considered the effect of the Proposed Development in conjunction with traffic associated with the identified committed development detailed in Appendix 2, as well as cumulative construction phase impacts.

Construction Phase

- 6.10 As stated previously a review of the MCC Planning Portal indicated that there are several approved large-scale development schemes within 500m of the Site. As such, the likelihood of concurrent dust generating activity was predicted as major. It is assumed that the implementation of standard industry best practice measures detailed in Table 6.28 within Chapter 6, required for the Proposed Development as well as committed developments will ensure that concurrent Construction Phase impacts are negligible on a temporary basis and therefore not significant.

Operational Phase

- 6.11 The assessment has considered the effect of the Proposed Development in conjunction the identified committed developments with Appendix 2. Associated traffic generation from the appropriate and available applications were factored into the modelled traffic data to consider the combined risk of committed developments and the Proposed Development.

Residual Effects

Construction Phase

- 6.12 Assuming the relevant mitigation measures outline in Table 6.28 of the Air Quality Chapter are implemented, the residual effect from all dust generation activities is predicted to be **negligible** on a temporary basis and therefore **not significant**.

Operational Phase

- 6.13 Following the implementation of offsetting measures detailed in Section 6.157 within the Air Quality Chapter, residual effects resulting from road vehicle exhaust emissions associated with traffic generated by the Proposed Development are predicted to be **negligible** on a permanent basis and therefore **not significant**.

7 (A)Noise and Vibration

A7 NTS ES Addendum Alterations

No alterations have been made to this chapter (7A) as part of the ES addendum. However, an ES chapter addendum has been prepared by Fisher Acoustics (Chapter 7B) which considers the environmental impacts of the detailed reserved matters proposals for Phase C of Crown Street Phase 2 which received outline consent as part of the hybrid permission.

For details please refer to Chapter 7B of this Statement.

Introduction

- 7.1 This Report assesses the impact of the Proposed Development on Noise and Vibration. In particular, it considers the potential effects of construction noise and vibration and changes in road traffic noise levels on existing receptors as well as existing and proposed sources of noise upon the proposed and existing receptors.
- 7.2 The Report describes the methods used to assess the impacts, the baseline conditions currently existing at the Site and surroundings, the potential direct and indirect impacts of the development arising from the proposed commercial development and changes in road traffic levels, the mitigation measures required to prevent, reduce, or offset the impacts and the residual impacts.

Baseline

- 7.3 The current noise climate at the Site is dominated by vehicle movements on the Mancunian Way and surrounding road network. Additionally, during the time of the assessment there was construction works taking place for Crown Street Phase 1 and along Chester Road to the north.
- 7.4 In order to establish the existing baseline noise environment for the Site the following noise surveys have been undertaken:
- Road Traffic Noise Survey for Mancunian Way to the south west of the; and
 - Background Sound Measurements.

Methodology

- 7.5 The following have been accounted for within the assessment:

Site Preparation, Earthworks and Construction Phase

- Construction noise at existing local sensitive receptors;
- Increase in noise at existing local noise-sensitive receptors; and,
- Ground-borne vibration levels at existing local sensitive receptors.

Operational Phase

- Construction noise at existing local sensitive receptors; and,
- Increase in noise at existing local noise-sensitive receptors.

- 7.6 Based on previous consultation with Manchester City Council, REC will seek to meet the following criteria:

- 7.7 The external noise level within any external amenity areas from road traffic noise shall not exceed 55dB $L_{Aeq,16hr}$, where practicable;
- 7.8 The internal noise levels within habitable rooms (bedrooms and living rooms) shall not exceed the BS8233 internal target noise levels, which are:
- 7.9 For bedrooms: 30dB $L_{Aeq,8hr}$
45dB $L_{Amax,fast}$
For living rooms: 40dB $L_{Aeq,16hr}$
- 7.10 With an exceedance of up to 3dB being acceptable in certain circumstances given the locality or desirability of the Site; and
- 7.11 The noise rating level generated by any fixed Mechanical and Electrical (M&E) plant shall be more than 5dB below the lowest measured background noise level at the closest residential receptor ($L_{A,r} = L_{A90,t} - 5dB$).

Summary of Likely Effects

Site Preparation, Earthworks and Construction Phase

- Construction noise at existing local sensitive receptors;
- Increase in noise at existing local noise-sensitive receptors; and,
- Ground-borne vibration levels at existing local sensitive receptors.

Operational Phase

- Construction noise at existing local sensitive receptors; and,
- Increase in noise at existing local noise-sensitive receptors.

- 7.12 The significance of noise and vibration impacts has been assessed against the magnitude of change and sensitivity of the receptor according to the impact matrix presented in the below Table. The significance of the impact is dependent on the context and nature of the noise and will be approached individually for each assessment/source.

Table 7.1 Matrix for Determining the Significance of Impact

Sensitivity of Receptor					
		High	Medium	Low	Negligible
Magnitude of Impact	Major	Major	Major to Moderate	Moderate	Negligible
	Moderate	Moderate	Moderate	Minor	Negligible
	Minor	Minor	Minor	Negligible	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

Key:

	Significant Effect
	Non-Significant Effect

Mitigation

Demolition and Construction

7.13 This Section details the mitigation measures required in order to reduce the significance of impacts predicted in the previous section.

Mitigation from Earthworks and Construction Noise Effects

7.14 Accepted safeguards exist to minimise the effects of construction noise, these include:

- The various EC Directives and UK Statutory Instruments that limit noise emissions from a variety of construction plant;
- Guidance set out in BS5228-1 which covers noise control on construction sites; and,
- The powers that exist for local authorities under Sections 60 and 61 of the Control of Pollution Act 1974 to control noise from construction application sites.

7.15 The adoption of Best Practicable Means, as defined in Section 72 of the Control of Pollution Act 1974 is usually the most effective means of controlling noise from construction sites. Such measures where appropriate may include the following:

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

7.16 It is recommended that the above measures be included in any Construction Environmental Management Plan (CEMP) that may be issued to and agreed with the contractor(s) conducting the works.

7.17 Experience from other sites has shown that by implementing the above measures, typical noise levels from construction works can be reduced by approximately 5dB to 10dB. Therefore, any impact from construction activities is not considered significant.

Construction

7.18 In light of the predicted significance of effects it is recommended that a vibration monitoring programme be put in place in the event that activities are conducted at distances at which effects of major adverse significance may occur. Where vibration levels exceed 10mm/s PPV, works within such areas should cease and alternative methods / working practices should be considered.

7.19 It is possible to employ a number of physical and operational measures in order to reduce the potential effects resulting from construction generated vibration. These may include:

- Adoption of low vibration working methods. Consideration should be given to use of the most suitable plant;
- Where processes could potentially give rise to significant levels of vibration, on - site vibration levels should be monitored regularly by a suitably qualified person;
- Where piling is to take place, any obstructions should first be removed;
- The provision of cut-off trenches in order to interrupt the direct transmission path of vibrations;
- Reduction of energy input per blow (applicable to piling); and,
- Application of piling techniques aimed at reducing resistance to penetration e.g. pre-boring for driven piles and adding water to the hole for impact bored piles.

7.20 It is expected that mitigation measures and operational considerations such as these would be incorporated within the development of the Site construction methodologies in order that the effects of groundborne construction vibration can be controlled wherever practically possible. Therefore, any impact from construction activities is not considered significant

Construction Generated Road Traffic Noise

7.21 As there is unlikely to be any significant increase in noise levels on the local road network as a result of construction generated traffic, the implementation of mitigation measures is not required.

7.22 Summarise mitigation measures identified within the assessment.

Cumulative Effects

Construction

7.23 Should the construction phase programmes of any other proposed or committed developments as set out in Appendix 2.2 in the vicinity of the Proposed Development overlap then there is the potential for significant cumulative noise and vibration impacts at sensitive locations (as detailed in Table 7.16). However, implementation of suitable mitigation options, as outlined within this chapter, and employed at the other development sites will ensure that there is no significant cumulative effect. The Great Jackson Street Framework has also been qualitatively assessed.

Completed Development

Road Traffic Sound – Proposed Residential

Glazing Requirements

7.24 The previous section has indicated that habitable rooms in certain apartments with line of sight to the Mancunian Way will exceed the internal target noise criteria with standard thermal double glazing, as detailed in Tables A1 and A2. Table 7.24 details the required specification of upgraded glazing in order to achieve the performance. As the glazing units are associated with living rooms and bedrooms, the highest exceedance has been used to determine the required performance.

7.25 The following Living rooms will require upgraded glazing:

- Building C4 – Block 1 – 2nd to 5th Floors - South East facing facades;
- Building C5 – SW Block – 2nd to 7th Floors – South West facing facades; and
- Building C5 – SE Block - Ground to 9th Floors – South East facing facades.

Table 7.24 Higher Specification Glazing Requirements – Residential

Plot	Floors	Orientation	Exceedence +/- (dB)	Minimum Required Glazing Performance, R _w + C _{tr} (dB)
Building C4 Block 1	2 nd to 5 th Floors	South East	+1	31
Building C5 – SW Block	2 nd to 7 th Floors	South West	+1	31
Building C5 – SE Block	Ground, 6 th to 9 th Floors	South East	+1	31
	1 st to 5 th Floors		+2	32

Alternative Ventilation

- 7.26 The previous Section determined that, with a partially open window, the internal noise levels for the all habitable rooms will exceed the internal target criteria.
- 7.27 Accordingly, it is recommended that an alternative ventilation system is installed to provide background ventilation and fresh air flow.
- 7.28 It is understood that Renaker are to install a Mechanical Ventilation with Heat Recovery (MVHR) system within all apartments. Purge venting will be provided by opening purge vents within the unitised façade. This system will provide a constant supply of fresh filtered air whilst also maintaining thermal comfort and is more than sufficient. As no vents are required within the habitable rooms to provide the background ventilation and fresh air flow, i.e. trickle vents, the acoustic performance of the façade are not compromised.

Road Traffic Sound – School Building

External Play Area

- 7.29 The assessments determined that the noise level within the proposed play area will range from 61dB to 68dB without any mitigation and as such are not considered the lowest practicable noise levels.
- 7.30 Accordingly, an additional noise model has been run with a 2.5m high barrier around the proposed play area overlooking the roads on the south western area. With barrier in place, noise levels reduce to 55dB in the central area up to 58dB in the worst affected areas. Accordingly, 2.5m high barriers are considered acceptable and the vast majority of the roof area in order to achieve the BB93 criteria.
- 7.31 The grid noise map can be seen in Figure 7.4 of Appendix 7.
- 7.32 The barriers proposed for the Site can be of wooden fence or brick wall construction and should be of close boarded construction, be free from holes, sealed at the base and have a minimum mass of 10kg/m².
- 7.33 With mitigation in place, the No Observed Adverse Effect Level (NOAEL) which would be Noticeable and not intrusive would be achieved, resulting in:

"Noise can be heard but does not cause any change in behaviour or attitude. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life."

Internal

- 7.34 The previous section determined that any classrooms located on the NW, SW & SE will require higher specification glazing above and beyond the minimum 30dB $R_w + C_{tr}$. Accordingly, Table 7.24 below details the rooms and façade orientations and minimum performance required.

Table 7.24 Higher Specification Glazing Requirements – School Building

Plot	Floors	Orientation	Exceedence +/- (dB)	Minimum Required Glazing Performance, $R_w + C_{tr}$ (dB)
School Building	Classroom	North West	+5	35
		South East	+8	38
		South West	+1	31

- 7.35 The assessments determined that with a partially open window, the internal noise levels for majority of the room uses will exceed the internal target criteria due to road traffic sound. Accordingly, it is necessary to consider an alternative ventilation scheme which does not require the opening of windows to provide fresh air flow and background ventilation. Windows should remain openable for purge ventilation. The exact system used is dependent on the developer, and must also address other considerations such as Air Quality and ventilation requirements.

Proposed Commercial Sound

- 7.36 This Chapter has set plant noise emission limits for any proposed fixed plant items associated with the proposed commercial premises in order to protect the amenity of proposed and existing receptors.
- 7.37 As the exact uses for the commercial units are unknown, mitigation measures may be required for certain areas due to certain activities associated with the proposed commercial and will need to be assessed individually at the detailed planning stage.
- 7.38 It is worth considering appropriate Site design for the commercial premises to lessen any potential impact at the receptors. Such as:
- Siting plant items away from receptors, i.e. on the shadow side of the commercial;
 - Any service areas should be suitably screened from the receptors; and
 - Where night time workings are required, these should be located within the commercial area and shielded by other premises that may only operate during the daytime.

Residual Effects

- 7.39 The residual impacts assume that the mitigation and recommendations described above have been implemented in order to achieve the criteria or the lowest practicable levels.
- 7.40 Therefore, impacts should be described as, e.g. minor beneficial in the long term at the local level.

Construction Phase

Construction Noise

- 7.41 If a CEMP is followed and adhered to and best practicable means are followed there should be a short term **minor adverse** impact at local level during the duration of the construction phase at existing and any proposed receptors. The impacts are not considered significant.

Construction Vibration

- 7.42 It is assumed that best practicable means are followed which should result in a short term minor adverse impact at local level during the duration of the construction phase at existing and any proposed receptors. The impacts are not considered significant.

Construction Generated Traffic

- 7.43 There is predicted to be a **short-term negligible** impact at all receptors at the local level. Furthermore it should be noted that any increase in noise levels associated with construction generated road traffic is expected to be limited to the daytime hours only.

Operational Phase

Change in Road Traffic Noise Levels

- 7.44 Comparing the changes, as a whole, in road traffic noise levels as a result of the Proposed Development with the guidance contained in the DMRB, it can be shown that the magnitude of impact is categorised as short term **negligible** at the local level.

Existing Road Traffic Noise Impact

- 7.45 Within internal habitable rooms, a **negligible long term** permanent impact at the local level can be achieved through the use of higher specification glazing and alternative ventilation, where required.

Proposed Commercial Sound

- 7.46 At this stage, any residual impacts are unknown as the exact use of the units is not known. However, as long as the BS4142:2014 and MCC's criteria are achieved at the detailed planning stage, there should be a negligible to minor adverse long term impact at any existing or proposed receptors at the local level.

Summary

- 7.47 If a Construction Environment Management Plan (CEMP) is followed and adhered to and best practicable means are followed there should be a short term minor adverse impact at local level during the duration of the construction phase at existing and any proposed receptors due to construction noise and vibration. The impacts are not considered significant. Additionally, there is predicted to be a short term negligible impact at all receptors at the local level due to construction generated traffic.
- 7.48 Comparing the changes, as a whole, in road traffic noise levels as a result of the Proposed Development with the guidance contained in the Design Method for Roads and Bridges (DMRB), it can be shown that the magnitude of impact is categorised as long term negligible at the local level.
- 7.49 The Noise Impact Assessment has identified that the key sources of noise that have the potential to impact upon the proposed residential receptors and School are road traffic using Chester Road and the Mancunian Way and noise associated with the proposed commercial units, such as fixed mechanical and electrical plant items.

- 7.50 Subject to the incorporation of the identified mitigation measures and compliance with the specified plant noise emission limits, it is anticipated that a commensurate level of protection can be provided against development-generated noise for the closest residential receptors.
- 7.51 With regard to the internal areas of the school, mitigation measures in the form of upgraded glazing may be required depending on the location of the classrooms within the school building. Therefore, it is advised that classrooms are not located on south western faced in order to negate the need for high specification glazing and less sensitive uses such as offices or kitchens are located within the south western area of the building.

7 (B) Noise and Vibration

Introduction

7.52 This Environmental Statement Chapter has been prepared by Fisher Acoustics. The potential significant effects of the Proposed Development with respect to Noise and Vibration have been determined and assessed. This Chapter supplements and refers to the Noise and Vibration Chapter of the Environmental Statement submitted and approved as part of the hybrid permission for Crown Street Phase 2 (planning reference 126668/FO/2020) ('the approved Noise and Vibration Chapter'). The approved Noise and Vibration Chapter forms Chapter 7A of this Environmental Statement Addendum Volume and Chapter 7A of this Statement (Non-Technical Summary, ES Volume 3).

7.53 The Chapter describes the assessment methodology, the existing baseline conditions at and around the Site; and the recommended mitigation measures to avoid or minimise any significant adverse effects. The potential residual effects following the implementation of the recommended mitigation measures are described.

Baseline

7.54 The long-term noise climate at and around the site is principally determined by road traffic on the Mancunian Way (A57(M)). Baseline noise levels at the site and at the nearby sensitive premises have been determined by reference to noise survey data gathered at and around the site.

Methodology

7.55 The approved Noise and Vibration Chapter provides the appropriate assessment of noise impact relating to construction noise and vibration and should be referred to accordingly.

7.56 The impact of the prevailing levels of road noise on the Proposed Development has been determined. The minimum recommended sound insulation performance requirements of the external façade element of the school building have been established such that applicable internal noise criteria can be achieved.

7.57 Environmental noise limits relating to the operation of building services place at the Proposed Development have been determined such that residential amenity can be maintained.

7.58 Environmental noise limits relating to potential activity noise egress from the proposed School Hall have been determined such that residential amenity can be maintained.

7.59 An assessment of noise propagation and the potential noise impact of the external playground areas has been carried out.

Summary of Likely Effects

7.60 The approved Noise and Vibration Chapter (Chapter 7A of the Environmental Statement Volume 1) identifies and evaluates the likely significant effects due to the construction of the Proposed Development and should be referred to accordingly.

7.61 There are potential operation noise effects due to activity noise egress from the School Hall and noise propagation from the external play areas of the School and radiation of noise from building services plant at the School.

Mitigation

7.62 Reference should be made to the approved Noise and Vibration NTS Chapter (Chapter 7A of this Statement) and the approved Noise and Vibration ES Chapter (Chapter 7A of the Environmental Statement Volume 1) for details of the proposed mitigation measures in relation to construction noise.

7.63 The principal long-term potential environmental noise source due to the operation of the Proposed Development is building services plant. Building services plant noise emissions from the Proposed Development will be controlled through careful design and specification of building services plant and by provision of acoustic screens and attenuators where required, to meet the noise emissions criteria at each noise sensitive receptor at and around the Site. As such, negligible impact is expected, such that no further mitigation would be required.

7.64 Compliance with the external noise criteria for activity noise egress from the proposed School Hall would lead to negligible noise effects at sensitive receptors, such that no mitigation would be required.

7.65 The assessment of noise propagation from the rooftop playground and other external areas of the School indicates that no mitigation would be required to control noise ingress to the residential dwellings around the Site.

Cumulative Effects

Construction

7.66 There is expected to be an overlap of construction works at the Site and at other buildings within the Great Jackson Street Strategic Development Framework area. However, the other developments sites are at a greater distance from many of the closest buildings to the Site and are expected to be at a difference stage in their build programmes such that the noisier construction activities including demolition, excavation, piling and frame construction is expected to have ceased at the time that these activities commence at the Site. It is therefore expected that the cumulative construction noise levels at the nearby noise-sensitive buildings will be principally determined by the construction activities at the proposed Site. With reference to the approved Noise and Vibration Chapter, there is expected to be no significant cumulative effect due to construction noise.

Operation

7.67 Operational noise due to the Proposed Development and the committed developments in the surrounding area would include mechanical services noise, noise egress due to leisure activities and changes in road traffic noise levels due to changes in traffic flows.

7.68 The cumulative impact of noise due to changes in road traffic flows is expected to be negligible. This result takes into account the predicted changes in traffic flow relating to the committed developments in the surrounding area. Traffic and Transport was scoped in to the Environmental Impact Assessment submitted and approved as part of the hybrid planning permission (please refer to Chapter 11 of this Statement), alongside this a Transport Statement was included at Appendix 11.1 (Environmental Statement Volume 2).

7.69 Operational noise limits due to mechanical services at the Proposed Development have been derived using the methodology and assessment criteria given in BS4142: 2014. Operational noise limits for any mechanical services systems at the buildings of the committed developments in the surrounding area would also be derived using the methodology and assessment criteria given in BS4142: 2014. The Planning Conditions for the committed developments in the surrounding area include a requirement for the building and any externally mounted ancillary equipment to be acoustically insulated in accordance with a scheme submitted to and approved in writing by the City Council in order to secure a reduction in the level of noise emanating from the equipment. The applicable noise limits will tend to be governed by the need to minimise noise levels at the buildings within the Proposed Development, as

these are the closest sensitive receptors in the majority of cases. Therefore, given the relative distances of the sensitive receptors applicable to each development, cumulative impact of building services noise will be **negligible**.

Residual Effects

7.70 Table 7.1A summarises the post-mitigation residual effects

Table 7.1A – Summary of Receptors, Likely Significant Effects, Mitigation Measures, and Residual Effects

<u>Likely Significant Effect</u>	<u>Receptor(s)</u>	<u>Mitigation Measure</u>	<u>Residual Effect</u>
<u>Construction Phase</u>			
<u>Minor to Moderate adverse construction noise</u>	<u>Local residents</u>	<u>Refer to approved Noise and Vibration Chapter (Chapter 7A of this Statement).</u>	<u>Minor Adverse construction noise effects (non-significant)</u>
<u>Operational Phase</u>			
<u>Negligible building services plant noise effects</u>	<u>Residential properties</u>	<u>Appendix 7.2: Adherence to environmental noise limits for plant</u>	<u>Negligible building services plant noise effects (non-significant)</u>
<u>Negligible activity noise effects from school hall</u>	<u>Residential properties</u>	<u>Appendix 7.2: Adherence to environmental noise limits for amenity spaces</u>	<u>Negligible activity noise effects from amenity spaces (non-significant)</u>
<u>Negligible activity noise effects from rooftop playground and other external areas</u>	<u>Residential properties</u>	<u>Appendix 7.2: Adherence to environmental noise limits for amenity spaces</u>	<u>Negligible activity noise effects from amenity spaces (non-significant)</u>
<u>Moderate adverse noise effects from road traffic</u>	<u>Internal school areas</u>	<u>Appendix 7.2: Adherence to recommended sound insulation performance of façade elements</u>	<u>Negligible adverse noise effects from road traffic (non-significant)</u>

8 Solar Glare

8 NTS ES Addendum Alterations

No alterations have been made to this chapter as part of the NTS ES addendum prepared in support of the reserved matters application for Phase C of Crown Street Phase 2, which received outline consent as part of the hybrid permission.

An EIA Technical Note, included at Appendix 8.2 (ES Volume 2) has been prepared by GIA to consider the environmental impacts arising from the detailed reserved matters proposals for Phase C (education facility). The EIA Technical Note confirms that the conclusions of the previous assessment (below) remain valid.

Introduction

- 8.1 Solar glare assessments are considered necessary when a Proposed Development has sections of glazed façade that may reflect sunlight and obstruct the vision of road users

Baseline

- 8.2 Solar glare is not comparative assessment, therefore there is no baseline conditions. However, it should be noted that the Proposed Development will be located on a Site where its existing state is a car park. Therefore, there is limited opportunity for sunlight to be reflected by the existing Site conditions.

- 8.3 The assessment has been undertaken from the sensitive road junctions surrounding the Site where the Proposed Development is visible. The following junctions or sections of road have been assessed for solar glare effects:

- Chester Road Eastbound junction with Deansgate Interchange;
- Chester Road Eastbound pedestrian crossing between Lower Moss Lane and Angela Street;
- Chester Road Eastbound pedestrian crossing between Manson Avenue and Cleworth Street;
- Chorlton Road Northbound pedestrian crossing following the Jackson Road junction;
- Chorlton Road Northbound junction with Royce Road;
- Chester Road Westbound junction with Deansgate;
- Dawson Street Southbound junction with Deansgate Interchange;
- Dawson Street Southbound divides from Ring Road; and
- Deansgate Interchange Southbound junction with Chester Road;
- Mancunian Way Northbound; and
- Mancunian Way Southbound.

Methodology

- 8.4 The assessment is conducted using a 3D computer model of the area created using photogrammetry and architectural models as a reference. Viewpoints are then chosen surrounding the development in order to give a realistic representation of potential instances of solar reflections. Viewpoints are located at a focal point such as traffic signal, pedestrian crossing or incoming traffic.
- 8.5 The assessment results show the time period and months in which potential solar reflections can occur. Where solar reflections occur close to the centre of vision when viewing traffic light, supplementary studies have been undertaken that establish the intensity of the reflections and whether these could impair visibility of drivers approaching the focal point.
- 8.6 The assessment shows a worst-case scenario, as a clear sky is necessary for solar reflections to occur, which in the UK is often not the case.

Summary of Likely Effects

- 8.7 In terms of solar glare, potential significant effects have been identified at several of the locations assessed. All road junctions are considered high sensitivity.
- 8.8 Overall, 30 viewpoints at 14 locations were assessed.
- 8.9 Two of the 14 locations are considered to be of Negligible and not significant as no instances of solar glare are evident from any of the viewpoints within 30° of the driver's line of sight. 10 locations of the 14 are considered to be of Minor Adverse and not significant due to potential instances of solar reflections occurring within 30° of the driver's line of sight however these would not impair visibility of signals.
- 8.10 Two locations would be significant, one would be considered Minor to Moderate Adverse and significant. The second location has one Moderate Adverse and one Major Adverse viewpoint however the overall effect in terms of solar glare to driver's approaching this junction would be considered Moderate Adverse and significant.

Mitigation

- 8.11 The design has evolved with solar glare effects in mind through the inclusion of shading on the southern façade of the C4 tower and the non-reflective panels in the facade to help break up potential reflections. As such, potential effects have been mitigated by design and there are no further planned mitigation measures for solar glare from the Proposed Development.

Cumulative Effects

- 8.12 Cumulative schemes are not assessed as the solar glare assessment is a worst-case scenario. Additional developments could obscure the view of the Proposed Development from certain viewpoints and therefore reduce instances of solar reflections.

Residual Effects

- 8.13 The residual effects to road users surrounding the Site would be permanent, Negligible to Moderate Adverse and significant.

9 Daylight, Sunlight and Overshadowing

A9 NTS ES Addendum Alterations

No alterations have been made to this chapter as part of the NTS ES addendum prepared in support of the reserved matters application for Phase C of Crown Street Phase 2, which received outline consent as part of the hybrid permission.

No EIA Technical Note nor Chapter Addendum has been prepared in relation to Daylight, Sunlight and Overshadowing. GIA have confirmed that the conclusions of the approved Daylight, Sunlight and Overshadowing ES chapter (below) remain valid and are unchanged by the detailed design development for Phase C, the education facility which have been progressed as part of this reserved matters application.

Introduction

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

Methodology

- 9.2 Technical analysis have been based on the methodologies set out within the Building Research Establishment Guidelines entitled 'Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice (2011)', (the "BRE Guide").
- 9.3 To assess the surrounding existing properties, the BRE Guidelines provide two main methods for assessing daylight: 'Vertical Sky Component' (VSC) and 'No Sky Line' (NSL). The VSC method measures the amount of light available on a vertical wall or window following the introduction of barriers such as buildings. The NSL method is a measure of the distribution of daylight at the 'working plane' within a room (i.e. a horizontal 'desktop' plane of 0.85 metres (m) in height). The NSL divides those areas of working plane in a room which receive direct sky light through the windows from those areas of the working plane which cannot. Where all of the windows meet the VSC and all of the rooms meet the NSL criteria within a property the effect is considered to be negligible.
- 9.4 For the assessment of sunlight, the approach considers the 'Annual Probable Sunlight Hours' (APSH) for a reference point on a window (i.e. if a window point can receive at least 25% APSH, then the room should still receive enough sunlight). Windows are checked to see if they are facing 90° due south, with the emphasis on main living rooms and other rooms such as the kitchen and bedrooms being of less importance.

Baseline

- 9.5 A total of 2235 windows serving 1015 rooms within five surrounding properties have been assessed for daylight and 550 rooms have been assessed for sunlight within five residential properties.
- 9.6 In the Baseline Scenario, out of the 2235 windows assessed for daylight, 1267 (57%) meet the BRE guidelines for VSC. 925 (91%) of the 1015 rooms assessed meet the BRE criteria. For sunlight, 506 (92%) out of the 550 rooms assessed meet the BRE criteria for both Winter and Annual PSH.

- 9.7 Following demolition of the existing buildings, daylight and sunlight levels at the Site and the immediate surrounds are likely to steadily increase in magnitude as the superstructure is built. As the construction works continue the levels of daylight, sunlight and overshadowing received by neighbours for the Site would trend towards those of the completed Development which are set out below.

Summary of Likely Effects

- 9.8 In the Proposed Scenario, in regard to daylight, out of the total 2235 windows assessed 1454 (65%) meet the BRE criteria for VSC, whereas 859 (85%) out of the 1015 rooms assessed meet the BRE criteria for NSL. The effects identified are **negligible to minor adverse** in nature and therefore are not considered to be significant. Given the context of the Site, no further mitigation is considered necessary.
- 9.9 For sunlight, out of the total 550 windows assessed (within five residential properties), 536 (98%) meet the BRE criteria for both Winter and Annual PSH. The effects identified are negligible in nature and therefore are not considered to be significant.

Mitigation

- 9.10 The design for the Project has evolved through a series of massing studies to mitigate the effects on the surrounding properties and limit the effect on the surrounding daylight and sunlight receptors.
- 9.11 The assessment identifies that no significant effects will arise as a result of the Project on daylight and sunlight during the construction and operational phases. Consequently, no further mitigation measures have been identified as being necessary.

Residual Effects

Summary of Residual Effects

Table 9.1 Daylight, Sunlight and Overshadowing Likely Significant Effect, Receptor, Mitigation and Residual Effect

Likely Significant Effect	Receptor	Mitigation	Residual Effect
Construction Phase			
Daylight	Surrounding Residential Properties	None required	As per completed development
Sunlight	Surrounding Residential Properties	None required	As per completed development
Operational Phase			
Daylight	Surrounding Residential Properties	None required	Negligible to Minor Adverse (Non-Significant Effect)
Sunlight	Surrounding Residential Properties	None required	Negligible (Non-Significant Effect)

Summary

- 9.12 Overall, the impact on daylight impacts to the surrounding properties is considered **negligible to minor adverse** and the impact on sunlight is also considered **negligible adverse** to all properties. Overall, this is considered to result in **non-significant** effects. Given the small scale of these effects and the context of the Site, no further mitigation is considered necessary.

10 Townscape and Visual Impact Assessment

A10 NTS ES Addendum Alterations

No alterations have been made to this chapter as part of the NTS ES addendum prepared in support of the reserved matters application for Phase C of Crown Street Phase 2, which received outline consent as part of the hybrid permission.

No EIA Technical Note nor Chapter Addendum has been prepared in relation to Townscape and Visual Impact Assessment. Chris Burnett Associates have confirmed that the conclusions of the approved Townscape and Visual Impact Assessment ES chapter (below) remain valid and are unchanged by the detailed design development for Phase C, the education facility which have been progressed as part of this reserved matters application.

Introduction

- 10.1 This Townscape and Visual Impact Assessment (TVIA) of the ES has been prepared by Chris Burnett Associates to assess the likely significant effects of the Proposed Development with respect to Townscape and Visual Amenity. The assessment is based on a worst case scenario involving the completed development of two 50 storey towers and a 2 storey educational facility.

Baseline

- 10.2 The Site lies in the Great Jackson Street Residential Neighbourhood Zone in central Manchester. Situated between Oxford Road and Chester Road, this area has been and is the focus of considerable regeneration in recent years. Notably, tall buildings have become key components of the townscape character of this zone and include Deansgate Square, Crown Street Phase 1 and River Street. It is bounded by the inner ring road, the Mancunian Way, to the south and the river Medlock to the north.

Methodology

- 10.3 The methodology follows the 'Guidelines for Townscape and Visual Impact Assessment' (GLVIA) Third Edition' (2013) – produced by the Landscape Institute (LI). The objective of the assessment process is to identify and evaluate the likely significant effects arising from the Proposed Development for both Townscape and Visual Receptors. The assessment of the effects of the Proposed Development on the townscape deals with the predicted effect the Proposed Development will have on the baseline townscape character, not only of the immediate locality but also the surrounding area. In terms of visual effects these are gauged by assessing, and confirming, a Zone of Theoretical Visibility and selecting a number of Representative Viewpoints for assessment. The locations of these are shown in Appendix 10.1 Maps. In both cases, for townscape and visual effects, the sensitivity of the receptors in each case is assessed against the degree of change in order to determine the likely significance of effect. A judgement is then made as to whether the effect is of major to negligible significance using the Effect Significance Matrix and then a judgement made as to whether the effect is significant or not significant in EIA regulation terms. For the purposes of this Townscape and Visual Impact Assessment, effects of Moderate Significance and above are considered to be Significant. Those values of Minor and below are therefore deemed to be Not Significant. A professional judgement is then also made as to whether the effect is of an adverse or beneficial nature.

- 10.4 Accurate Visual Representations (AVRs) Views were produced for all Representative Viewpoints to facilitate the assessment process. These are shown in Appendix 10.2 TVIA Photos.

Summary of Likely Effects

- 10.5 Although it is not possible to provide one single summary value that the impact the Proposed Development will have on Manchester City Centre and its surrounding neighbourhoods, it is possible to summarise the effects in general terms. In this regard Table 10.1 below records that in most cases, the Proposed Development has a negligible or minor significance of effect which is not significant in EIA regulation terms. Only in a few cases, largely those viewpoints which are in close proximity to the Proposed Development, does the value rise to moderate.
- 10.6 The principal reason for this lies with the fact that the Proposed Development sits amongst a cluster of tall buildings, some of which such as Crown Street Phase 1, are in close proximity. The fit with the baseline townscape character and most views is complementary and visual interest is increased as a result.

Table 10.1 Operational townscape and visual effects

(Note. Where townscape (T) and visual receptor (VR) significance of effect values are the same, one shared value is provided. Where they are different, a value is provided for both categories.)

Location	Development Only (included Residual Impact)	EIA significance
1 Whitworth Street West		
Sensitivity (VR)	No impact	Not significant
Sensitivity (T)		
Magnitude (VR)		
Magnitude (T)		
Significance of effect		
2 Stretford Road		
Sensitivity (VR)	Medium	
Sensitivity (T)	Low	
Magnitude (VR)	Minor beneficial	
Magnitude (T)	Minor beneficial	
Significance of effect (VR)	Minor beneficial	Not significant
Significance of effect (T)	Negligible beneficial	
3 The Sanctuary		
Sensitivity (VR)	Medium	
Sensitivity (T)	High	Not significant
Magnitude (VR)	Negligible	
Magnitude (T)	Negligible	
Significance of effect	Minor Beneficial	
4 Hulme Park		
Sensitivity (VR)	Medium	Not significant
Sensitivity (T)	Medium	
Magnitude (VR)	Minor beneficial	
Magnitude (T)	Minor beneficial	
Significance of effect	Minor beneficial	

Location	Development Only (included Residual Impact)	EIA significance
5 Mancunian Way		
Sensitivity (VR)	Low	Not significant
Sensitivity (T)	Low	
Magnitude (VR)	Minor Beneficial	
Magnitude (T)	Mod Beneficial	
Significance of effect	Minor Beneficial	
6 St Wilfred’s Park		
Sensitivity (VR)	High	Significant
Sensitivity (T)	Low	
Magnitude (VR)	Minor beneficial	
Magnitude (T)	Minor beneficial	
Significance of effect (VR)	Moderate beneficial	
Significance of effect (T)	Negligible beneficial	
7 Chorlton Road		
Sensitivity (VR)	Medium	Not significant
Sensitivity (T)	Low	
Magnitude (VR)	Minor Beneficial	
Magnitude (T)	Minor Beneficial	
Significance of effect (VR)	Minor Beneficial	
Significance of effect (T)	Negligible Beneficial	
8 St George’s Park		
Sensitivity (VR)	High	Not significant
Sensitivity (T)	Medium	
Magnitude (VR)	Minor Beneficial	
Magnitude (T)	Minor Beneficial	
Significance of effect (VR)	Moderate Beneficial	
Significance of effect (T)	Minor Beneficial	
9 Chester Road		
Sensitivity (VR)	Medium	Not significant
Sensitivity (T)	Medium	
Magnitude (VR)	Minor beneficial	
Magnitude (T)	Minor beneficial	
Significance of effect	Minor beneficial	
10 Chester Road		
Sensitivity (VR)	Medium	Not significant
Sensitivity (T)	Medium	
Magnitude (VR)	Minor Beneficial	
Magnitude (T)	Minor Beneficial	
Significance of effect	Minor Beneficial	

Location	Development Only (included Residual Impact)	EIA significance
11 Deansgate		
Sensitivity (VR)	Low	
Sensitivity (T)	Medium	
Magnitude (VR)	Moderate Beneficial	
Magnitude (T)	Moderate Beneficial	Not
Significance of effect (VR)	Minor Beneficial	Significant
Significance of effect (T)	Moderate Beneficial	Significant
12 Albert Square		
Sensitivity (VR)		
Sensitivity (T)	No impact	Not significant
Magnitude (VR)		
Magnitude (T)		
Significance of effect		
13 St Peter's Square		
Sensitivity (VR)	Medium	
Sensitivity (T)	High	
Magnitude (VR)	Minor Beneficial	Not significant
Magnitude (T)	Minor Beneficial	
Significance of effect	Minor beneficial	
14 Lower Moseley St		
Sensitivity (VR)		
Sensitivity (T)		Not significant
Magnitude (VR)	No impact	
Magnitude (T)		
Significance of effect		
15 Whitworth St West		
Sensitivity (VR)	Low	
Sensitivity (T)	Low	
Magnitude (VR)	Negligible	Not significant
Magnitude (T)	Negligible	
Significance of effect	Negligible Beneficial	
16 Deansgate Station		
Sensitivity (VR)	Low	Not significant
Sensitivity (T)	Medium	
Magnitude (VR)	Minor Beneficial	
Magnitude (T)	Minor Beneficial	
Significance of effect	Negligible Beneficial	
17 Deansgate		
Sensitivity (VR)	Medium	
Sensitivity (T)	Medium	Not significant
Magnitude (VR)	Minor Beneficial	
Magnitude (T)	Minor Beneficial	
Significance of effect	Minor Beneficial	

Location	Development Only (included Residual Impact)	EIA significance
18 Castlefield Basin		
Sensitivity (VR)	Medium	Not significant
Sensitivity (T)	Medium	
Magnitude (VR)	Minor beneficial	
Magnitude (T)	Minor beneficial	
Significance of effect	Minor beneficial	
19 Egerton Street		
Sensitivity (V)	Low	Not significant
Sensitivity (T)	Low	
Magnitude (VR)	Minor beneficial	
Magnitude (T)	Minor beneficial	
Significance of effect	Negligible beneficial	
20 A57 Regent Road		
Sensitivity (VR)	Low	Not significant
Sensitivity (T)	Medium low	
Magnitude (VR)	Minor beneficial	
Magnitude (T)	Minor beneficial	
Significance of effect	Negligible beneficial	
21 Trinity Way		
Sensitivity (VR)	Medium	Not significant
Sensitivity (T)	Low	
Magnitude (VR)	Negligible	
Magnitude (T)	Negligible	
Significance of effect	Negligible Beneficial	
22 Museum of Science & Industry		
Sensitivity (VR)	High	Not significant
Sensitivity (T)	High	
Magnitude (VR)	Negligible	
Magnitude (T)	Negligible beneficial	
Significance of effect		
Viewpoint A		
Sensitivity (VR)	Medium	Not significant
Sensitivity (T)	Medium	
Magnitude (VR)	Minor beneficial	
Magnitude (T)	Minor beneficial	
Significance of effect	Minor beneficial	
Viewpoint B		
Sensitivity (VR)	Medium	Significant
Sensitivity (T)	Medium	
Magnitude (VR)	Moderate beneficial	
Magnitude (T)	Moderate beneficial	
Significance of effect	Moderate beneficial	

Location	Development Only (included Residual Impact)	EIA significance
Viewpoint C		
Sensitivity (VR)	Medium	Not significant
Sensitivity (T)	Medium	
Magnitude (VR)	Minor beneficial	
Magnitude (T)	Minor beneficial	
Significance of effect	Minor beneficial	
Viewpoint D		
Sensitivity (VR)	High	Not significant
Sensitivity (T)	Medium	
Magnitude (VR)	Minor beneficial	
Magnitude (T)	Minor beneficial	
Significance of effect	Minor beneficial	

Mitigation

- 10.7 Mitigation in terms of visual and townscape effects has been incorporated into the Proposed Development as part of the design process by the scheme's architect SimpsonHaugh and Partners and has evolved through consultation with the Local Planning Authority and others.

Cumulative Effects

- 10.8 In terms of cumulative effects, the effects of the Proposed Development are expected to be reduced further as more tall buildings, in close proximity, such as Whitworth Street West or De Trafford Transition come forward and are constructed. In a few cases they obscure views of the Proposed Development altogether

Residual Effects

- 10.9 The Residual Effects assume that all mitigation measures that are an integral part of the design have been incorporated into the completed development and so the values remain the same as those for the operational effects and are recorded in 10.1 above.

11 Traffic and Transport

A11 NTS ES Addendum Alterations

No alterations have been made to this chapter as part of the NTS ES addendum prepared in support of the reserved matters application for Phase C of Crown Street Phase 2, which received outline consent as part of the hybrid permission.

No EIA Technical Note nor Chapter Addendum has been prepared in relation to Traffic and Transport. Vectos have confirmed that the conclusions of the approved Traffic and Transport ES chapter (below) remain valid and are unchanged by the detailed design development for Phase C, the education facility which have been progressed as part of this reserved matters application.

Introduction

- 11.1 Vectos (North) Ltd have prepared this chapter of the ES and assessed the likely significant effects of the Proposed Development on the environment with respect to Transport. This Chapter also describes the methods used to assess the effects; the baseline conditions currently existing at the Site and surrounding area; the mitigation measures required to prevent, reduce or offset any significant negative effects; and the likely residual effects after these measures have been adopted.
- 11.2 This Transport Chapter is supported by a Transport Assessment (TA) and a Travel Plan (TP). The environmental impacts of road traffic have been identified by the Institute of Environmental Assessment (IEA) Guidelines for the Environmental Assessment of Road Traffic (1993) and include;
- Noise;
 - Vibration;
 - Visual Impact;
 - **Severance;**
 - **Driver Delay;**
 - **Pedestrian Amenity;**
 - **Accidents and Safety;**
 - **Hazardous Loads;**
 - Air Pollution;
 - **Dust and Dirt;**
 - Ecological Impact;
 - Heritage and Conservation Areas.
- 11.3 The environmental implications in bold shown above are addressed as part of this section whilst those arising from Noise/Vibration, Visual Impact, Air Quality, Ecology and Heritage matters are dealt with in other sections of this document.
- 11.4 As will be described, the environmental impacts from Road Traffic only become evident when there is a material change in traffic flows. In this assessment that arises on the streets that are immediately providing access to the Site such as Silvercroft Street, Melbourne Street or on Great Jackson Street between those two access points. Elsewhere the change in traffic flow is not sufficient to be perceptible.
- 11.5 The assessment has considered implications during the operational phase but also during the short term construction phase. The traffic flows from the Operational Phase are forecast in

the TA and the potential effects of this traffic on sensitive receptors in the vicinity have been considered. The traffic during the Construction Phase is less predictable but it is possible to state that construction traffic flows will be of a relatively low level and last for a relatively short period of time limiting the implications.

Methodology

11.6 The assessment firstly considered the potential environmental receptors that could be considered sensitive and they are:

- Local residents namely those who will be occupying apartments as part of the Great Jackson Street Framework area and those to the east off City Road.
- Pedestrians using local roads and those accessing Gaddum House
- Cyclists using local roads and those accessing Gaddum House

11.7 The assessment has considered;

- The magnitude of the impact;
- The duration involved;
- The reversibility of the effect; and
- The number and sensitivity of receptors.

11.8 The assessment uses the IEA Guidelines which proposes 'two broad rules of thumb which can be used in the screening process to delimit the scale and extent of environmental impact. Those Rules are:

Rule 1 Include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%)

Rule 2 Include any other specifically sensitive areas where traffic flows have increased by 10% or more.

11.9 The assessment also considers potential cumulative effects whereby one environmental factor combines with others.

11.10 The traffic implications covers both the Construction and operational Phases of development.

Baseline Assessment

11.11 The Site is a brownfield site that was previously occupied by commercial buildings and was cleared to create a public car park primarily used for commuter parking. To give context for the Baseline Conditions, the Site previously operated as a 333 space public car park which increased to 401 spaces when it was surveyed in 2015. This survey showed that the Site generated 1012 arrivals and 916 departures in a 12-hour period with a two-way flow of 306/307 vehicles in the respective peak hours.

11.12 For the Transport Assessment, the 2022 baseline traffic flows for the Crown Street Phase 1 development were growthed to the 2028 year of opening incorporating the committed development trips that have been forecast for the area. For clarity, the Noise and Air Quality Assessments depend on daily traffic flows that come from a different data source, the TfGM traffic model for the area and this uses a different future year assessment of 2025. The difference in future year assessments is not significant as traffic growth in the city has been stable or in fact falling over time.

Identification and Evaluation of Significant Effects

Construction Traffic

- 11.13 There has not been a forecast in Construction Traffic flows as these are variable depending on the nature of type of activity at the time. In general vehicle movements are timed to programme deliveries. Typically there might be 2-6 articulated HGV deliveries per day, between 16-30 Rigid HGVs per day increasing to up to 100 movements per day during concrete pours or around 50 per day with cladding work. On the busiest hours we might see around 10 HGV movements per hour. There would then be construction workers cars and light goods vehicles arriving on Site which may bring around 30-50 Light vehicle movements per day.
- 11.14 The environmental impact during is just for a temporary period. Apart from the immediate Site accesses, the level of traffic will be insignificant when considered in the context of base traffic flows on the study area network and will not result in a 30% change in flows on any link. This is particularly the case when examined in the context of the baseline network flows and the existing use of the Site as a commuter car park.
- 11.15 The expected environmental implications of construction traffic would be just temporary and in practice these flows are equivalent to the current levels of construction traffic that are currently experienced for the Crown Street Phase 1 development.

Operational Traffic

- 11.16 The residential development trips were forecast using the same Trip Rate Information Computer System (TRICS) forecasts used in the Crown Street Phase 1 assessment. Onto this we have added the school trips. The public car park trips are based on the survey data for the existing car park of 401 spaces factored to the new provision of 389 spaces, a small reduction in trips.
- 11.17 The nett increase in two-way traffic flow in the Operational Phase with development, as compared to the baseline traffic flows has been calculated and presented in Table 11.1 below.

Table 11.1 Traffic Flow Changes with Development

Link	Name	2028 Base	AM		PM		% Change	
			2028 Base + Dev	2028 Base	2028 Base + Dev	2028 Base	AM	PM
A	A56 Chester Rd West of Gt Jackson	2557	2613	2490	2563		2%	3%
B	A56 Chester Rd East of Gt Jackson	2101	2103	1974	1975		0%	0%
C	Gt Jackson St North of Silvercroft	281	338	319	394		20%	24%
D	Silvercroft St	63	360	101	424		471%	320%
E	Gt Jackson St South of Silvercroft	306	652	378	518		113%	37%
F	Melbourne St	25	291	3	105		1064%	3400%
G	Gt Jackson St South of Melbourne	275	317	378	421		15%	11%

Link	Name	AM		PM		% Change	
		2028 Base	2028 Base + Dev	2028 Base	2028 Base + Dev	AM	PM
H	City Road East	283	332	230	270	17%	17%
I	Medlock St North of City Road East	1719	1723	1692	1696	0%	0%
J	Medlock St South of City Road East	1717	1762	1570	1605	3%	2%

Summary of Likely Effects

Construction Phase

- 11.18 During Construction there will be additional traffic movements for a temporary period notably by HGVs accessing the Site. Construction movements are usually limited to regular, but low-level traffic volumes over a course of a working day and are comprised of contractor cars, light goods vans and larger vehicle movements. Construction activity typically occurs prior to the morning peak period and is complete prior to the evening peak period. The level of traffic will be insignificant when considered in the context of base traffic flows on the study area network and will not result in a 30% change in flows on any link. This is particularly the case when examined in the context of the baseline network flows and the existing use of the Site as a commuter car park.
- 11.19 Despite the low level of construction traffic, the associated increase in large goods vehicles and the potential requirement to reduce footway widths to accommodate hoardings and other potential effects on vulnerable road users means that the magnitude of effect is considered moderate.

Operational Phase

- 11.20 In considering the percentage change in traffic flow in the Operational Phase, it can be seen in Table 11.1 that the percentage change in traffic flows with development are notable on Silvercroft Street. Melbourne Street and the section of Great Jackson Street between Silvercroft Street and Melbourne Street.
- 11.21 Those particular sections of highway experience large percentage increases in flow due to development traffic on top on low background traffic flows. To the general road user these changes in flow will be noticeable compared to current conditions. The highway operation with development has been tested in the Transport Assessment at both the junctions of Silvercroft Street and Melbourne Street with Great Jackson Street. The results of this assessment show that the highway is forecast to operate well within capacity with little queues or delays While the junctions show a large percentage increase the actual flows passing through the network is typical of normal urban junctions.
- 11.22 Further away from the immediate vicinity of the Site the change in traffic flows is much more modest. Great Jackson Street north of Silvercroft Street sees a 24% increase in traffic flow in the PM peak and south of Melbourne Street Great Jackson Street sees a 15% change. City Road East sees a 17% change in traffic flow. The main road links of Medlock Street and Chester Road see only a small change in traffic volume of 2-3%.

- 11.23 From this analysis and with comparison with the IEA guidelines the potentially sensitive environmental receptors that are away from the immediate vicinity of the Site will only experience a minor adverse effects from traffic.
- 11.24 Those receptors are considered moderately tolerant of changes in road traffic as they are all currently are present in an urban environment and experience road traffic.

Construction Phase

Mitigation

- 11.25 The Contractor will employ a number of mitigation measures to offset the potential temporary environmental impacts arising from Construction traffic. A Construction Management Plan would be conditioned and employed mitigate the environmental impacts of construction including the traffic movements.
- 11.26 The CMP would ensure drivers and the logistics companies employ best practice for HGV drivers on Road Safety to protect vulnerable road users. The potential dust and dirt arising from construction traffic will be mitigated by wheel washing facilities and road sweeping. As the development is part of a wider area development there are economies of scale that reduce vehicle movements such as a concrete batching plant located off Melbourne Street which minimises traffic movements thereby reducing traffic on the wider network.

Residual Effects

- 11.27 The Assessment of the residual impacts after mitigations are given in Table 11.2 below.

Table 11.2 – Residual Impact Table (construction)

Receptor	Effect Description	Post-Mitigation (Residual) Significance
Local Residents	Pedestrian Amenity Severance	Minor Adverse not significant effect on new residents of Crown Street Phase 1 of off Great Jackson Street opposite site.
Pedestrians	Pedestrian Amenity Severance Road Safety	Minor Adverse not significant effect on pedestrians on Silvercroft St/Melbourne St and their immediate junctions with Gartside St.
Cyclists	Severance Road Safety	Minor Adverse not significant effect on cycle users on Silvercroft St/Melbourne St and their immediate junctions with Gartside St.

Operational Phase

Mitigation

- 11.28 A package of measures is incorporated in the scheme to ensure that the development is sustainable and mitigate the effects of traffic movements. The main mitigation measures are the limits on parking for the Great Jackson Street Framework area compared to the pre-development scenario when much of the area was used as commuter parking space. The Site location is very sustainable for occupiers so they can access the local amenities, employment and leisure opportunities of the area and the City Centre without the need for a car. In

addition, the co-location of the Primary School will provide education facilities for families of the local area.

- 11.29 Further mitigation measures to promote sustainable modes of transport for every day use includes the high levels of cycle parking, electric vehicle charging points a share car club and the promotion of sustainable travel behaviours with a Travel Plan. There is also a quality pedestrian and cycling environment with the public realm and landscape improvements on the Site and the immediate vicinity.

Residual Effects

- 11.30 Following mitigation, the remaining impact on receptors has been assessed. The issues relating to noise/vibration and Air Quality are considered in other chapters of this report. The initial impact for the sensitive receptors was originally assessed as a Minor Adverse impact, primarily due to the reduction in parking for the area providing a physical limit on the traffic generation potential in the area. The location and the sustainable transport measures will help occupiers to live without the need to use a car and while these help in mitigation they are only expected have a limited effect, so the Minor Adverse impact of development is assumed to remain during the Operational Phase. The assessment of the residual implications during the Operational Phase of development are indicated in Table 11.3.

Table 11.3 – Residual Impact Table (operational)

Receptor	Effect Description	Post-Mitigation (Residual) Significance
Local Residents	Pedestrian Amenity Severance	Minor Adverse not significant effect on new residents of Crown Street Phase 1 or off Great Jackson Street opposite site.
Pedestrians	Pedestrian Amenity Severance Road Safety	Minor Adverse not significant effect on pedestrians on Silvercroft St/Melbourne St and their immediate junctions with Gartside St.
Cyclists	Severance Road Safety	Minor Adverse not significant effect on cycle users on Silvercroft St/Melbourne St and their immediate junctions with Gartside St.

Summary

- 11.31 The Traffic and Transport implications of the Proposed Development has been assessed according the environmental factors as set out by the Institute of Environmental Assessment (IEA) and described above.
- 11.32 The Assessment methodology considers the traffic implications on the environment firstly due to Construction Traffic and then due to its Operational Phase. It is considered that the Environmental implications of development with mitigation is no worse than a Minor Adverse impact and that this would be an acceptable development in environmental terms.

12 Wind Microclimate

A12 NTS ES Addendum Alterations

No alterations have been made to this chapter as part of the NTS ES addendum prepared in support of the reserved matters application for Phase C of Crown Street Phase 2, which received outline consent as part of the hybrid permission.

An **EIA Technical Note**, included at **Appendix 12.3 (ES Volume 2)** has been prepared by Ensafe (formerly REC Ltd) to consider the environmental impacts arising from the detailed reserved matters proposals for Phase C (education facility). The EIA Technical Note confirms that the conclusions of the previous assessment (below) remain valid.

Introduction

- 12.1 This document is the non-technical summary (NTS) of the Environmental Statement (ES) Chapter 12: Wind Micro-climate, which has been submitted as part of an application for full planning permission for the Proposed Development Phase 2 at Crown Street, Manchester.
- 12.2 Its purpose is to summarise the content and main findings of the ES Chapter 12: Wind Micro-climate in a clear and concise manner to assist the public in understanding what the environmental effects of the Proposed Development are likely to be. The full ES provides a more detailed description of the Proposed Development and the findings of the Environmental Impact Assessment (EIA) process.

Wind Assessment Methodology and Significance Criteria

Scope of the Assessment

- 12.3 The Chapter 12 of the ES reports the outcome of the assessment of likely significant effects arising from the Proposed Development on the local wind environment in the context of the Proposed Development Site and its surroundings.
- 12.4 The wind environment for the purpose of this assessment is defined as the wind flow experienced by pedestrians and the subsequent influence it has on their activities. It is concerned primarily with wind characteristics at pedestrian level. Other likely wind effects such as wind pressure loading on building facades and natural ventilation are unrelated to the pedestrian wind environment and do not fall within the scope of this assessment.

Extent of the Study Area

- 12.5 A 3d model of the Proposed Development and surroundings within a radius of approximately 500 m around the Proposed Development Site has been constructed for the assessment. The flow around these buildings and terrain is explicitly modelled within this radius using a CFD method, whilst outside this region obstructions are accounted for using mathematical models which assign a 'roughness' depending on the terrain type.

Assessment Methodology

- 12.6 A quantified assessment of the Baseline, Proposed and Cumulative Scenarios wind environments was carried out to analyse the likely significant effects of the Proposed Development on the local wind environment. The effects have been considered significant if the magnitude of effect is identified to be moderate or above.

- 12.7 The methodology adopted for the assessment combines predicted air flow patterns and wind velocities around the Proposed Development Site, the use of wind data from Manchester Airport meteorological station and the recommended best practice comfort and safety standards (the Lawson Criteria). The Lawson Criteria provide wind speed and frequency ranges for pedestrian comfort and safety. It stipulates that for the comfort and safety assessment of wind effects, it is not only the velocity of wind that is considered but also the frequency of occurrence of these velocities.

Mitigation

- 12.8 The design of the Proposed Development has been subject to numerous preliminary studies which have been used to inform the design as it developed into its current form. Specifically, design features to assist with the wind environment include:
- Proposed Landscaping (at the ground floor as well as at the terraces of Blocks C4 and C5)
 - A 50% porous screen near the south part of the passage between Blocks C3 and C4; three 50% porous screens on the north side of the School; and two 75% porous screens located in the passage between Blocks C3 and C4

Summary of Environmental Effects on Wind Micro-Climate

- 12.9 The results of the assessment, including the wind mitigation features incorporated in the design, indicated that the Proposed Development is likely to modify the local wind environment and create both improvements and some localised wind acceleration. However, no significant negative effects in terms of both pedestrian comfort and safety, have been highlighted.
- 12.10 The results indicate that, following construction of the Blocks C3 & C4, the wind environment at the Site and its surroundings, including the surrounding landscape, is considered to be safe and suitable for the intended and existing uses. The addition of Block C5, providing additional shelter from prevailing southerly winds, results in generally calmer wind environment, especially to the north and east of the Proposed Development Site.
- 12.11 The inclusion of future surrounding buildings results in slightly windier conditions to the north of Elizabeth Tower and calmer wind conditions around Deansgate Square with an overall negligible impact on wind conditions within the Site and its surroundings.
- 12.12 The mitigation measures incorporated in the design successfully mitigate adverse wind conditions within and in the surrounding areas of the Proposed Development Site, and therefore, no additional secondary mitigation measures have been considered.
- 12.13 In conclusion, all locations assessed, throughout all considered configurations, were either found to be safe for the general public and suitable for their intended and existing uses or remain unchanged or improved when compared to the Baseline conditions with neutral or negligible effects. Therefore, subject to the implementation of mitigation measures, there are no significant adverse impacts in relation to wind and micro-climate.

13 Availability of Environmental Statement

A13 NTS ES Addendum

The following changes have been made to this chapter:

- Update to Deloitte address.

Statement

- 13.1 The ES is available for public viewing online via MCC's Public Access website, and during normal office hours at the following address:

Planning Department
Manchester City Council
Town Hall
Manchester
M2 5DB

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

- Non-Technical Summary (NTS) - £15
- Volume 1: ES Main Text & Figures - £150
- Volume 2: ES Appendices - £150
- Volume 3: Heritage, Townscape and Visual Impact Assessment - £150
- Volume 4: Transport Assessment - £150
- Full copy (Volumes 1, 2, 3 and 4 with NTS) of the ES on CD - £15

- 13.3 For copies of any of the above please contact the Environmental Advisory Team at Deloitte Real Estate:

Crown Street Phase 2 Project Team – Planning and EIA
Deloitte Real Estate
The Hanover Building
Corporation Street
Manchester
M4 4AH
~~Hardman Street~~
~~Manchester~~
~~M3 3HF~~



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