

Viadux

Crane option study

February 2021



Prepared for:

**Manchester City Council
(MCC)**

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1. INTRODUCTION

- i) The following report has been prepared by Domis, Renaissance and Heritage Architecture Ltd. to support the extant Planning Application for the redevelopment of the Former Bauer Millett Site, Manchester (henceforth referred to as the 'the Site' or the 'Viadux Development').
- ii) The Site comprises the former railway viaduct which passes over Great Bridgewater Street in Manchester City centre, originally connecting the train line to the former Central Station (now Manchester Central Convention Centre), along with a large area of brick arches forming an undercroft to the south of the viaduct. The viaduct structure and undercroft are listed at grade-II.
- iii) The proposals to redevelop the Site broadly consist of a new 40-storey residential tower and 14-storey office building. The scheme was granted Planning Permission and Listed Building Consent on 27 July 2017 (MCC Planning references: Ref. 115871/FO/2017 and 115872/FO/2017). Following on from the 2017 consent, a **Section 73 application (ref 126868/JO/2020)** for a Minor Material Amendment to the approval was made in May 2020.
- iv) In order to implement the proposals, a tower crane is required on-site which will stand 145 metres from the base and be tied into the new concrete frame at set location agreed within the design, there will be no physical contact between the tower crane and the arches at any point throughout the scheme. Temporary steel needles and a ring beam frame will be installed to resist arch thrust forces and minimise any potential movement to the listed structure. The existing masonry is to be carefully removed, with the original bricks being cleaned and stored. Following the completion of the tower crane works, crane, brick arch to be rebuilt.
- v) The tower crane will form the logistical hub to the scheme being used for over 90% of the activities at one point or another throughout the construction phase of the scheme. It is deemed absolutely essential to the logistical challenges of this scheme, the location being prime for efficiencies and deemed the best location for minimal disruption to activities beyond the site boundary i.e. Manchester Central & the general public. Following initial investigation works, it is understood that the most viable option is for the Tower Crane to be placed to the western side of the viaduct at upper deck level. The preferred option (4 in Table 4 / Appendix I of this Note) seeks to create a temporary opening through the listed arch (circa 3.25m square opening) which would be reinstated and made good upon completion of the works. The method statement for these works is to be provided by **Bullen Conservation Ltd.** This document is to be read in conjunction with the structural intervention design information which provides full details of forming the openings and the method statement and precedent image information for the reinstatement works to be completed when the crane is dismantled.
- vi) The purpose of the following document, therefore, is to demonstrate the various options which have been considered for the placement of the Tower Crane, whilst ensuring the **least harmful solution** for the listed structure. **Section 7 of the Planning (Listed Buildings and Conservation Area) Act 1990**

states that “any works for the demolition of a listed building or for its alteration or extension in any manner which would affect its character as a building of special architectural or historic interest” requires authorisation in the form of Listed Building Consent (LBC).

- vii) The fundamental Planning requirement outlined in the 1990 Act and the National Planning Policy Framework (NPPF) states that development affecting listed buildings should result in demonstrably positive ‘heritage benefits’, by avoiding or minimising ‘harm’ to the: fabric, character, and experience of the designated heritage asset. The NPPF and Manchester City Council’s Planning Policy require that development options which would result in ‘*substantial harm*’ to a listed building should be refused. The essential ‘heritage impact’ requirement of the Planning process is, therefore, that the development should retain the architectural and historic interest of the listed building. The options for the Tower Crane should be considered in this context, which is explored further in the following section.

2. HISTORIC ENGLAND GUIDANCE

- i) In 2015 Historic England released three Good Practice Advice notes supporting the implementation of national policy and the related guidance in the PPG. The advice notes do not constitute a statement of Government policy itself, nor do they seek to prescribe a single methodology or particular data sources. **Good Practice in Planning Advice Note 2 (Managing Significance in Decision-Taking in the Historic Environment, 2015)** and **Good Practice Advice Note 2 (Making Changes to Heritage Assets, 2016)** were both utilised as part of this assessment in order to gain a full understanding of the relevant issues, alongside the NPPF and PPG (Planning Practice Guidance).
- ii) Historic England’s approach to reconstruction sits within a range of other guidance documentation. The recommended approach sets out a series of issues which need to be worked through in coming to an informed decision about whether to reconstruct. Historic England recommends that any reconstruction proposal needs to be based on a thorough understanding of the heritage values of the site or place, and the impact of the proposal on these values.
- iii) It will be clear that even when a wealth of information is available, reconstruction will not always be appropriate. This includes, but is not limited to:
- when there is insufficient knowledge of, and evidence for, the history of the asset for a credible reconstruction;
 - when any elements of the significance of the asset may be unnecessarily damaged or lost;
 - when the fact of loss or damage is of high significance;
 - and when (a) key stakeholder(s) do not support reconstruction.

- iv) In order to comply with the above, a full significance appraisal and structural survey of the Grade II listed viaduct has been undertaken in preparation of the options appraisal (including both brick and mortar testing). It will be clear that the preferred Option (4) seeks to reinstate the original fabric, utilising previous surveys to understand the structural integrity of the arches and minimise both temporary and operational risks.
- v) The following section utilises recognised criteria to define ‘significance’ in heritage terms and provides clear definitions as to what is meant by ‘heritage impact’. It is necessary to determine the magnitude of heritage impact potentially afforded by the proposals, based on an understanding of how, and to what extent, the proposed reconstruction of the viaduct would impact the significance of the identified heritage asset, both temporarily and permanently.

3. ASSESSING HERITAGE SIGNIFICANCE AND IMPACT

- i) **Paragraph 189** of the NPPF states: *“In determining applications, local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets’ importance and no more than is sufficient to understand the potential impact of the proposal on their significance.*
- ii) ‘Significance’ (for heritage policy) is defined in the NPPF (Annex 2) as: *“the value of a heritage asset to this and future generations because of its heritage interest. That interest may be archaeological, architectural, artistic or historic. Significance derives not only from a heritage asset’s physical presence, but also from its setting.* This understanding of heritage significance is reaffirmed by Historic England’s Good Practice Advice in Planning Note 2: *Managing Significance in Decision-Taking in the Historic Environment* (2015).
- iii) Criteria have been established to appraise a heritage asset’s significance. Statutory criteria, as set out in the ‘*Principles of Selection for Listing Buildings*’, DCMS, 2018, provides a list of principles of assessing significance based on architectural and historic interest, age and rarity, aesthetic merits, selectivity and national interest. Historic England’s criteria outlined in ‘*Conservation Principles, Policies and Guidance*,’ are also considered in this assessment. When referring to ‘significance’ in heritage terms, the term ‘value/sensitivity’ has been adopted in order to avoid confusion with the term “significance” as used in conventional EIA sense. The value/sensitivity of built heritage assets (receptors) is assessed against the criteria contained in **Table 1 (below)**.

Table 1: Value of built heritage receptors

Value / sensitivity	Description
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High	Grade I and Grade II* listed buildings. Other buildings that can be shown to have exceptional qualities in their fabric or historical associations not adequately reflected in the listing grade. Conservation Areas containing very important buildings.
Medium	Grade II listed buildings. Historic buildings that can be shown to have exceptional qualities in their fabric or historical associations. Conservation areas containing buildings that contribute significantly to its historic character.
Low	Locally listed buildings. Historic buildings of modest quality in their fabric or historical association.

- iv) Impact of the Proposed Development upon the heritage asset's heritage significance may be described as **beneficial, neutral** or **adverse**. If the Proposed Development will enhance heritage values or the ability to appreciate them, as expressed in the first stage of the assessment, then the impact on heritage significance will be deemed to be beneficial; however, if they fail to sustain heritage values or impair their appreciation then the impact will be deemed to be adverse. The potential impacts are assessed and described qualitatively in this report and are informed by the criteria contained in **Table 2, below**.

Table 2: Magnitude of Impact on built heritage receptors

Magnitude of Impact	Description
Major Beneficial	The development considerably enhances the heritage values of the heritage assets, or the ability to appreciate those values.
Moderate Beneficial	The development enhances to a clearly discernible extent the heritage values of the heritage assets, or the ability to appreciate those values.
Minor Beneficial	The development enhances to a minor extent the heritage values of the heritage assets, or the ability to appreciate those values.
Negligible beneficial	The resultant difference will be imperceptible but have a positive impact on the understanding or appreciation of the heritage asset.
Negligible	The development does not affect the heritage values of the heritage assets in the view, or the ability to appreciate those values.

Negligible adverse	The resultant difference would not diminish the value of the heritage assets' significant physical fabric, their settings or significance to any appreciable degree.
Minor adverse	The development erodes to a minor extent the heritage values of the heritage assets, or the ability to appreciate those values.
Moderate adverse	The development erodes to a clearly discernible extent the heritage values of the heritage assets, or the ability to appreciate those values.
Major adverse	The development severely erodes the heritage values of the heritage assets, or the ability to appreciate those values.

3.1 SIGNIFICANCE OF EFFECT

- i) Combining the sensitivity of the receptor with the magnitude of impact for each asset provides an indication of the likely significant effects. Table 3 (below) provides a matrix to arrive at an assessment of the likely significance of effect. The matrix is not intended to 'mechanise' judgment of the significance of effect but to act as a supporting material to the narrative and qualitative assessment within this report, and to check to ensure that judgments regarding value, magnitude of impact and significance of effect are reasonable and balanced.
- ii) Similarly, justification for the direction of effects (beneficial, adverse or neutral/negligible) is discussed within the qualitative assessment text.

Sensitivity	Magnitude of Impact			
	Major	Moderate	Minor	Negligible
High	Major	Moderate	Moderate/Minor	Negligible
Medium	Major/Moderate	Moderate/Minor	Minor	Negligible
Low	Moderate/Minor	Minor	Minor/Negligible	Negligible

Table 3: Likely Significance of Effect on built heritage receptors

3.2 IDENTIFICATION & THE EVALUATION OF LIKELY SIGNIFICANT EFFECTS

- i) Heritage assets are susceptible to numerous forms of development and non development impacts both during the construction process and as a consequence of the operational life of the Development. For the purpose of this exercise, the potential effects in relation to the options appraisal relate to the fabric and integrity of the Grade II listed viaduct only.
- ii) The below has been produced to provide the reasoning and factors behind the selected location of the Tower Crane for the Viadux residential development. The project and the Tower Crane location decision has been made with many factors in mind, being;
 - Sensitivity to the Grade II listed Castlefield Viaduct (including brick undercroft / arches)
 - Safety for loadings on the arches and any potential detrimental effects on the same
 - Buildability and logistics issues to ensure the crane can be positioned to service the project and operate in safe manner for the users of the Manchester Central service yard and others such as the general public. The location, we feel is prime for efficiencies of deliveries & to minimise multiple lifts, this will in turn reduce the risk associated with the tower crane lifts, which is already very low.
 - Other constraints on locations, for examples Electricity North West main sub-station location, land in the area subject to development.
- iii) Table 4, below details each position considered and the reasons for not considering these further and an explanation of the suitability of the final selected location and these are marked on plans (see Appendix I). **Table 4**, below, provides an indication of the likely significant effect each option would instigate during both the temporary works phase and during the operational (completed) phase. The preferred option is Option 4, as set out below.

Table 4				
Option	Considerations		Impact	
Options 1 – 4	Physical Impact on Grade II Viaduct	Other constraints	Perceived Heritage Impact (Temporary)	Perceived Heritage Impact (Operational)
Option 1 – Crane positioned on top of podium structure on the West elevation	Yes – loadings from the crane onto the podium have significant impact on the structure and frame.	Substantial structural constraints on the podium structure, causing structural risk on the arches which would be inadvisable. This point also blocks access routes for Manchester Central	Major / moderate adverse	Major / moderate adverse
Option 2 – Crane positioned within the last arch adjacent to the ENW sub-station	Yes – opening within arches and potentially more significant temporary works than preferred location, hence more intervention and more remedial works	Major electrical supplies for the city sit beneath the ground in this area, which would prevent the necessary groundworks needed for the crane.	Minor adverse	Minor / Negligible adverse
Option 3 – Crane positioned within the land adjacent to the site (Hilton slot site)	No	Option not able to be used as land is for a development site and the reglazing of the Hilton hotel. The crane would also be positioned on the wrong side of the building and the reach would be much greater than required.	Neutral	Neutral
Option 4 West elevation through the mid span of the arch	Yes – through centre of arch, so structural intervention can be completed without any effect on the arches, making good works	None	Moderate adverse	Negligible adverse

Table 4				
Option	Considerations		Impact	
	set out in design and method statement with specialist on board.			
Option 5 Placement through section of bridge that is to be removed as part of the scheme. Crane positioned on Great Bridgewater street below	No	The crane would be positioned on Great Bridgewater street which would mean significant works in that area, and a full road closure for over 3 years. This would also not work from a logistical perspective as the bridge is not being removed until later in the scheme.	Neutral	Neutral
Option 6 At lower street level within contractor compound area	No	The distance from site would not work for a size of crane available. In addition, the proximity to the tramlines would be prohibitive.	Neutral	Neutral
Option 7 Access ramp servicing Manchester Central service yard and construction site.	Minor	This would cut all access to the Manchester Central venue service yard which would not be agreeable and the construction site above podium. This location would also be too great a distance from the site itself to be feasible	Minor adverse	Negligible adverse

4. CONCLUSION

The proposals for the Viadux Site have been consented (MCC Planning references: Ref. 115871/FO/2017 and 115872/FO/2017) and works on site are underway. This document reflects the need to apply for additional Listed Building Consent in order to complete the works, by installing a tower crane on site. The options appraisal (Table 4 above) has provided a complete analysis of the preferred options for the placement of the tower crane which would have minimal impact on the Grade II listed viaduct, be feasible with regards to additional constraints (such as shared ownership) and avoid the need to close busy city centre roads for long periods of time.

As has been demonstrated, the preferred option is to install the tower crane to the west elevation through the mid span of the arch. A method statement will be submitted as part of the application. Once the works have been carried out, temporary support will be required whilst the arch is made good. This will be explained within the aforementioned Bullen Conservation Method Statement which will be submitted as part of the application.

It will be clear that the temporary works will have a moderate adverse impact upon the listed structure, this impact will however, be significantly reduced during the operational phase, by which time the arch will have been reinstated. The overall heritage impact of the preferred option (4) is thus considered to be **negligible adverse**. As per the definition outlined in table 3 (above), this does not equate to no visual or physical change, but rather the resultant difference would not diminish the value of the heritage assets' significant physical fabric, their settings or significance to any appreciable degree.

It is considered that the proposals would therefore comply with the necessary tests outlined in the NPPF (2019) paras. 189 and 193.

APPENDIX I

