The British Museum

Number 38 Russell Square

Notes to Tenderers

August 2018

The British Museum – Number 38 Russell Square

NOTES TO TENDERERS

1.0 Introduction

These notes have been prepared to summarise the key aspects of the proposed structural engineering works for the British Museum Number 38 Russell Square, works are to be procured via a traditional form of contract.

These notes have been prepared to accompany the main works tender information and should be read in conjunction with the drawings and specification. They are intended to draw attention to particular aspects of the works and the contractor is required to include the full cost and programme issues identified in these notes within his tender submission.

There are risks and unknowns which are either identified on the drawings and specifications or are covered via provisional sums and a contract contingency. These notes have been prepared to identify the key issues, risks and unknowns identified to date in relation to the design and construction of the structural engineering works.

These notes do not cover risks that are not related to structural engineering or where there may be some unidentified structural engineering works resulting from architectural or M&E risks and unknowns.

These notes, or omissions from them, do not relieve the contractor of his responsibility to ensure that his tender includes for carrying out all the structural engineering works shown in the drawings and specifications.

2.0 The Site

Number 38 Russell Square is a terraced house owned by the British Museum, located to the south-west of Russell Square. The house was built in the early 1800's and is Grade II listed. The British Museum currently uses the building as offices. This building will be refurbished and repaired for continued use as offices.

3.0 Existing Structure

This building is typical of a late Georgian terrace, however some alterations have been made in the past and these are discussed in further detail below. The main house is 4 stories above ground with a lower ground floor beneath, and at the rear of the building is a 2 story annexe. This building is located at the end of the terrace and there are light-wells around the building, with cellars beyond the light-well to the side of the building. There are cantilever stone balconies supported on cantilever stone beams on the front elevation at first floor.

The external and party walls and internal basement walls are loadbearing masonry. The internal walls are generally timber above the ground floor.

The floors of the main house are generally timber, apart from the third floor which was replaced in the 1980's with a concrete metal deck supported on steel beams. The ground floor to the rear comprises timber joist floors spanning between masonry walls. A steel frame has been inserted at lower ground floor level and provides intermediate support to the timber ground floor. The remaining floors generally comprise primary timber beams supporting secondary beams that in turn support joists. The primary beams span between the party and masonry flank walls. At level 1, a concrete encased steel beam has been installed below the ceiling to support the central spine timber stud wall above.

The roof of the main house consists of two pitched roofs with hipped ends onto Montague Place. The two pitches comprise timber king post trusses supported on a steel valley beam.

The floors and roof of the annexe are timber joisted spanning between masonry walls

Based on our desk study of available site investigation reports undertaken at the British Museum, the foundations are around 0.6m – 1m deep and founded in gravels.

The existing structure is summarised on drawings 1756/702/01 to 09.

4.0 The Proposed Scheme

The proposed scheme involves upgrading the services and forming openings in some walls to create open office spaces. There are known defects with these buildings which will be addressed during the works. The key items are discussed below.

5.0 Key Aspects of Structural Works

5.1 General

The contractor must refer to the Preliminary Clauses and all Materials Specifications included within the Contract Documents in addition to the requirements contained on the drawings and within these notes to tenderers. A summary of some of the key requirements of the materials specifications is included on drawing C1756/702/099.

5.2 Investigations and Surveys

The proposed structural alterations and repairs have been designed based on the limited opening up works carried out to date. To confirm the final details of the proposed works there are a number of site investigations which are needed. These are set out on drawings C1756/702/S01 to S08. The contractor is to carry these out at the start of the contract and allow for 10 working days in his programme for the design team to review and confirm the relevant proposed details, following the results of the investigations. The contractor is to allow for suitable time in his programme for installing repairs which are not currently known based on the allowances stated in the tender documents. Following the investigations the final details will be confirmed.

5.3 Repairs to Front and Side Elevations

Our appraisal of the external walls has found issues with de-lamination of the outer skin of facing brickwork. The verticality survey of the external walls shows significant bulging at the upper levels of the side elevation which indicates that the facing brick is separating from the backing brick. Drawings 1756/702/08 and 09 summarise the profile of the external walls. The extent of de-lamination is to be confirmed early in the contract using an endoscope drilled through mortar joints as set out on these drawings.

The extents of proposed repairs to the façade will be confirmed following the confirmation of de-lamination. The proposed repairs involve pinning the facing brick back to the main body of the wall where practical and where there is limited de-lamination. The walls will be tied back to the floors with straps fixed to the timber floors. The contractor will need to carefully consider his sequence of works for these repairs and submit his proposed sequence to the design team and allow for 10 working days in his programme for the design team to review and comment.

Scaffolding will be needed for these works to the front and rear elevations. Due to the issues described above, the scaffold will not be able to receive restraint by fixing directly to the facing brick. The principles for the scaffold design have been set out on drawing C1756/702/100 and 101.

5.4 Other Repairs

We have observed cracks to the stone slabs of the balcony, which will be repaired with stainless steel pins as noted on the drawings. The balcony needs to be cleaned and the stone surface exposed in order to confirm the condition and finalise the repair details. The contractor needs to consider how he will prop the balconies during the works and how the access scaffolds will deal with the balconies.

Repair details for these known defects are specified on the proposed drawings, and allowances have been made at tender for encountering further defects during the works.

6.0 Services

The services distribution strategy is to generally avoid altering the existing fabric by re-using existing services routes where this is practical. Elsewhere the integration of new services will aim to work with the grain of the existing structure by passing services between existing timber floor joists notching to existing joists is to be limited. Redundant services openings are to be made good. The proposed services integration is summarised in more detail on drawing 1756/702/096. The services routes are to be carefully coordinated by the contractor with the Architect and M&E Engineer.

The contractor is to confirm services routes and builder's work proposals early in the contract and carry out all opening up necessary to confirm proposed routes, and set these out clearly on site for the design team to review.

Refer to services engineer's drawings for services or infrastructure known to exist on site. Enquiries have not necessarily been exhaustive and the contractor shall make his own enquiries and satisfy himself as to the exact location and extent of all existing services on site. Repairs to damaged services shall remain the responsibility of the contractor.

7.0 Contractor Designed Portion (CDP)

There are a number of CDP items within the Contract. Items of CDP that affect the design of the permanent structure or where the contractor has some design input are listed below. The contractor is to allow in his programme for the design team to comment on any contractor-designed items as set out in the tender documents. The main contractor's programme must allow at least 10 working days for ABA to review and comment on CDP items listed below.

7.1 Design of all secondary steelwork, including connections back to the new primary structure *(i.e. cladding support, plant support, staircases, lift guides and lifting beams, rooflight and glazing support and elsewhere on the project where cold formed section are proposed)*

The sub-contractor is responsible for the design of all secondary steelwork as noted above. Drawings showing detailed proposals (including any connection details that need to be incorporated into the primary structure) and the loads that these elements will impart onto the primary structure are to be issued by the sub-contractor for comments, as set out in the Structural Steelwork Specification. The final construction information for the primary structure will be issued within 10 days of the completion of the commenting process.

7.2 Detailed design of balustrades, handrails, doors, screens, raised floors etc. and their fixing back to the primary structure

This is to be based on structural engineering requirements by ABA and the design intent as shown on the Architect's drawings. Drawings showing detailed proposals (including any connection details that need to be incorporated into the primary structure) and the loads that these elements will impart onto the primary structure are to be issued by the sub-contractor, so that the Engineer can review and comment on them. The sub-contractor is to take on board the comments raised. Allow at least 10 working days for this commenting period. The final construction information for the primary structure will be issued within 10 working days of the completion of the commenting process.

7.3 Support fixings for M&E pipework and installations Access walkways, ladders etc and their fixings back to the primary structure

Generally the loads that these elements will impart onto the main structure, including any connection details that must be incorporated into the main structure, must be confirmed by the contractor, so that the Engineer can confirm the final details of the main structure.

7.4 Structural glass

The loadings and general arrangement of the proposed structure is shown on the contract drawings, but any structural glass that is to be supported by the new frames are to be designed by the specialist sub-contractor

7.5 Pumps and pumping mains and non-return valves to the underground drainage

The specialist sub-contractor is to design all pumps, standby pumps and pumping mains, and non-return valves, which includes specifying the size of any pumping chamber/non-return manhole.

8.0 Temporary Works

Design, installation and maintenance of all necessary temporary works is the responsibility of the Contractor. This includes all temporary works necessary to protect existing structures and services from damage during the construction works, and to construct the new works. ABA have produced some indicative sequences showing what we have assumed in the design of the works to date, which are issued for information only. The Contractor is to develop his own proposals for which he shall remain entirely responsible. At tender stage he shall carry out his own appraisal of the sequence and temporary works required and make appropriate allowances in the tender, not just rely on the sequences issued with the tender documents. His proposals shall be submitted to the C.A. for comment prior to commencement of the work on the site.

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