

THE BRITISH MUSEUM

REPAIRS TO THE PARAPET
ON
THE NORTH ELEVATION
OF
THE KING EDWARD VII BUILDING

INTRODUCTION
AND
SCOPE OF WORKS DOCUMENT

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Frank Timothy Associates Limited
Oakfields
18 Piper Road
Yate
South Gloucestershire
BS37 5SY

Introduction

These works are to repair the parapet and leadwork over the main North façade of the British Museum. This elevation incorporates the north public entrance to the Museum.

Previous investigations have been undertaken which have shown the leadwork covering to the parapet and coping to be in poor condition. The leadwork has been leaking, causing deterioration of the concrete parapet and coping below. The findings of these earlier investigations are the driver for this current project.

Both leadwork and parapet are in a delicate condition and it has been decided to carry out remaining repairs to the elevation to secure it's long term safety and the survival of original fabric.

Scope of Works

This project comprises the following elements:

1. SCAFFOLDING AND HOARDING ETC.:

- 1.1 The erection of scaffold to the North elevation, with specific requirements for support systems and particular constraints on loadings, positions of bearings and potential back propping in the basement areas (level 0) due to the existing construction of the forecourt area. It is intended that only the upper levels of the scaffold will be boarded out to enable the works to be carried out; this top level will be sheeted with a non-branded monarflex sheeting. The Museum will want to provide banner advertising at high level on the scaffold and the main contractor will need to allow for all necessary wind restraint. In addition, the scaffold ties are to remain as permanent fixtures in the stone façade, and there are particular requirements for the type and location of sockets for the ties and the cover caps which are the subject of a Listed Building Consent.
- 1.2 Provision of hoisting facilities on the west side forecourt for both personnel and goods together with stair access to the area of works at roof level (level 7). The hoist is to be founded above the parapet level to the basement area (level 2) where a loading platform will be provided approximately 2m clear above the forecourt level.
- 1.3 Provision of lifting beams at roof level for the removal of leadwork, transportation to ground level and return procedures following repairs.
- 1.4 An extra over figure is to be included in the tender for the provision of a temporary roof.
- 1.5 All necessary temporary protection to the existing fabric including the forecourt areas, parapet copings and windows at basement area level, together with protected tunnels to the entrance door(s) which will be in constant use throughout the project. The doors are the main north entrance to the Museum and the Contractor is to maintain the tunnels at all times in a safe, clean and tidy condition.
- 1.6 The potential reforming of the specialist expansion joint at basement area level if the scaffold support needs to be taken at this point.
- 1.7 Provision of storage facility on the east side of the forecourt (at forecourt level) with the provision of temporary works to allow for the spread of loads over the forecourt itself which comprises of a granolithic topping over a clinker concrete slab on encased steel beams. The forecourt slab construction includes a waterproof membrane as part of the weathering protection to the basement areas below.
- 1.8 The provision of security alarms to the scaffold under a separate and direct contract with the Employer. The main contractor is to allow access to the scaffold at specific stages for fixing security alarms during the erection and dismantling periods. The main contractor must ensure that the access is safe and that sections of the scaffold are signed off at the relevant stages.
- 1.9 The erection and maintenance of a secure hoarding to specific details to meet the Museums standard requirements, with anti-climb paint and all necessary supports and temporary lighting. The hoarding is to include lockable double gates to each compound area (i.e. hoist/loading platform at the west side and storage area at the east side).

2. ACCESS AND MESSING FACILITIES:

- 2.1 Access for Contractors personnel will be via the security desk located in the south east corner of the Museum, where day passes will be issued each day. Contractors will be obliged to return passes in order to check out at the end of each working day.
- 2.2 There is an existing site hut within the Museum which is to be used by the Contractor. The hut is located above the single storey stores to the rear of 43 Russell Square as shown on AB1/1, and is provided with water and electrical services.
- 2.3 Arrangements are being made for the contractor to use the male staff w.c.s located off the north service road as shown on AB1/1.
- 2.4 Arrangements are being made for the contractor to access the site working area (from the site hutting) via the north east gate. This is normally reserved for vehicular access into and out of the Museum but special dispensation is being arranged to minimise time lost in accessing messing facilities. The use of this gate does not negate the requirement for checking in and out at the beginning and end of each day at the security desk in the south east corner of the Museum.

3. PHASING, PROGRAMME AND PREVIOUS WORKS:

- 3.1 There has been previous investigative and repair works carried out in 2009 to the parapet and leadwork at the east end over the first window bays. This current project is a continuation of the repairs carried out to the first bay to complete the entire elevation. Repairs will be based on the previous works but by necessity have been provisionally scheduled based on previous information and an assessment of the potential levels of repairs that will be found at close quarters once the scaffold has been erected.
- 3.2 It is suggested that the works are to be phased; phase 1 being the erection of the compound hoist and loading platform to the west of the entrance together with the access scaffold over and to the east side of the entrance. Phase 2 will be the access scaffold to the west of the hoist and loading platform. This access scaffold will encroach upon the site for the World Conservation Centre operated by Mace. Concurrent access into the Mace area has been agreed for the purposes of erecting and dismantling the scaffolds and access over the site at high level to carry out the works. The contractor may suggest alternative phasing for consideration.
- 3.3 The works are to commence in late April 2012 and must be completed by February 2013. The contractor will need to co-ordinate the sequencing of removal, repairs and refixing to meet this programme constraint.

4. REPAIRS TO LEADWORK AND PARAPET:

- 4.1 The existing cast leadwork is in a relatively poor state, with defective fixing details, split and inadequate number of welts, inadequate cover laps, previous inappropriate repairs to lead detailing, and failing fixings of ornamentation. The lead has allowed water to penetrate into the clinker concrete parapet which it covers.
- 4.2 The parapet itself is formed from clinker concrete with period reinforcement. The previous works had found that the clinker concrete had disintegrated below the lead covering due to the water penetration and the reinforcement was rusting.
- 4.3 The current works are to remove the cast lead and carry out more appropriate repairs off site, including the provision of new stainless steel armatures for re-fixing, extension of existing lead to improve cover at flashing positions, formation of additional welts, and carrying out lead burned repairs in controlled conditions.
- 4.4 The lead from the rear of the parapet is to be used for repairs to minimise the impact of any colour variations between new / existing work on the main front façade; the rear parapet lead cladding will be formed with new cast lead.
- 4.5 The leadwork will be returned to site and re-fixed with new non-ferrous fixings at centres and locations, and with sheet sizes to comply with the current addition of the Lead Sheet Association Manuals (this will necessitate the provision of additional lead welts to the parapet coping sections). The new fixings will be made with plugs and screws rather than timber grounds in the parapet as exists at present. The new stainless steel armatures will be post-fixed to the newly reformed parapet, by setting into pockets and bonded with an appropriate resin.
- 4.6 The design and fixing of the armatures to the lead ornamentation will be the responsibility of the contractor, who will be required to submit proposals for comment before proceeding to manufacture. In addition, the contractor will be required to maintain accurate records of the defects found and the methods of repair for submission to the design team who will use this information to satisfy conditions attached to the Listed Building Consent.
- 4.7 The concrete parapet is to be taken down to a level below the lower timber ground as shown on the Structural Engineer's drawings. The existing retained reinforcement is to be shot blasted and treated, and new horizontal reinforcement provided as shown on the Structural Engineer's drawings. The parapet and integral coping are to be re-cast to the original profiles and the contractor is to allow for all necessary record drawings following removal of leadwork and the provision of fibreglass forms for the coping profiles. Additional/ / new expansion joints are to be included within the parapet and coping in accordance with the Structural Engineer's requirements.

5. ASSOCIATED REPAIRS AND ALTERATIONS:

- 5.1 Associated repairs are limited to the top section of the façade from the upper parapet down to the concealed gutter behind the lower parapet with the lion head embellishments and will include:
- 5.2 Indenting new stone and carrying out cramp and mortar repairs to the Portland Stone ashlar and moulded cornices; replacing failed sandstone lintels within the brickwork to the gutter area to the lower parapet; removing redundant fixings and making good to jointing and or stone / brickwork; repointing brick and stonework in isolated areas.
- 5.3 Replacing spalled brickwork.
- 5.4 Replacing failed walkways within the gutter to the lower parapet.
- 5.5 Gilding to lead ornamentation.
- 5.6 Repairs and redecoration of the rainwater goods to the upper parapet level.
- 5.7 Adaptations to the lightning conductor installation at roof level