APPENDIX A : CORROSION PROTECTION OF STRUCTURAL STEELWORK

British Museum – Number 38 Russell Square

	24.8.18	Tender	AL	LK
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Alan Baxter Ltd

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A1.00 GENERAL

A1.01 QUALITY OF WORK:

a) Operatives must be appropriately skilled and experienced in the use of the specified materials and methods of application.

b) Prepare materials and surfaces and apply coatings in accordance with manufacturers' recommendations.

A1.02 PROGRAMME: notify the Contract Administrator (C.A.) and inspecting authority (if appointed) of projected dates for start of surface preparation and coating.

A2.00 MATERIALS

A2.01 COATING MATERIALS: ensure that successive coats are compatible. NB this also applies to site coats and intumescent paints specified by the Architect.

A2.02 COATING MATERIALS:

a) Wherever possible to be from one manufacturing batch. Where more than one batch is to be used, keep separate, allocate to distinct parts or areas of the work and inform the C.A. accordingly.

b) To be delivered in sealed containers, clearly labelled with the following information:

Type of material.
Brand name.
Intended use.
Manufacturer's batch number.

c) Store in a clean, dry area protected from extreme temperatures and in accordance with manufacturers' recommendations. Use in order of delivery.

d) Confirm with manufacturers that coating thicknesses specified are compatible with the proposed method of application.

A2.03 WHITE SPIRIT: to BS 245.

A2.04 HOT-DIP GALVANIZING: to BS EN ISO 1461, minimum average coating thickness as specified. All cutting, welding and drilling must be completed beforehand. Provide all necessary vent and drain holes in agreed locations and seal after galvanising. Submit proposals for locations of vent holes and method of sealing to C.A. before galvanizing.

A2.05 GALVANIZING: protect galvanized steelwork to avoid damage. Damaged members to be rejected.

A3.00 WORKMANSHIP GENERALLY

A3.01 CODE OF PRACTICE: comply with BS EN ISO 12944.

A3.02 CONDITIONS: all surface preparation and works coats to be carried out under cover.

A3.03 PROTECTION: take adequate precautions to minimise damage to coatings, both at works and on site.

A3.04 COLOUR: each successive coat must be a different shade of colour.

A3.05 WET-FILM THICKNESS of each coat to be that stated by the manufacturer as giving the required dry-film thickness. Check the thickness of each coat in accordance with BS EN ISO 2808 during application using a wet-film-thickness comb, and keep a record of results.

A3.06 DRY-FILM THICKNESS: over any square metre of coating the average accumulated dry-film thickness must equal or exceed the specified thickness, with no reading less than 75% of the specified thickness or more than 150% of the specified thickness.

A4.00 PREPARATION OF SURFACES

A4.01 BLAST-CLEANING FOR PAINTING: Comply with BS EN ISO 12944-4.

a) Thoroughly degrease. Remove mill-scale by chipping, grinding and/or heat treatment.

b) Remove all sharp edges, burrs around holes and cut edges by rounding or chamfering.

c) Blast-clean to the specified preparation grade in accordance with BS EN ISO 8503-1 and control quality of preparation in accordance with BS EN ISO 12944-4.

d) Thoroughly clean off all dust in a clean area of the works using a vacuum head fitted with edge brushes.

e) Apply primer as soon as practicable and within 4 hours of blasting.

A4.02 GALVANIZED SURFACES: acid-pickle.

A5.00 ALTERNATIVE SEQUENCES OF WORKING

A5.01 PRE-FABRICATION PRIMING: if surface preparation after fabrication is specified, but the Contractor wishes to carry out surface preparation before fabrication, they must submit proposal at tender stage with the tender, including, if appropriate, proposed pre-fabrication primer additional to specified coatings. Costs of additional coatings must be included in tender.

A6.00 APPLICATION

A6.01 PREPARATION OF MATERIALS:

a) Do not intermix different coating materials.

b) Do not thin without permission of C.A.

c) Stir to attain an even consistency before use unless otherwise recommended by manufacturers.

A6.02 CONDITIONS: do not apply coatings:

a) To surfaces affected by condensation, damp or frost.

b) When ambient temperature is below 4°C.

c) When heat is likely to cause blistering or wrinkling.

d) Before previous coats have hardened or cured sufficiently.

A6.03 VENTILATION: ensure that spaces in which coatings are to be applied are well ventilated.

A6.04 CLEANLINESS:

a) Keep all brushes, tools and equipment, clean.

b) Brush down all surfaces immediately before coating and keep clean and free from dust during coating and drying.

A6.05 FAYING/CONTACT SURFACES of ordinary bolted joints to be painted as specified for adjacent surfaces. Shop connections to be made while final coat is still wet.

A6.06 BRUSHING: work coatings into all recesses, edges, intersections and over surfaces generally, to obtain a uniform and continuous film.

A6.07 SPRAY-PAINTING: apply with an airless spray-gun recommended by the paint manufacturers to give a uniform and continuous film covering all recesses, edges, intersections and surfaces generally.

A6.08 ROLLER-COATING: do not use for first priming coat of any system.

A6.09 PRIME manually-cleaned surfaces as soon as possible after cleaning, and in any case on the same day.

A6.10 CONCRETE-ENCASEMENT: do not paint steelwork which is to be concrete-encased.

A6.11 STRIPE COAT: Apply a supplementary primer coat to all critical areas including welds and edges to all “external steelwork”.

A6.12 PRE-FABRICATION PAINTING: step back each coat 30mm from the previous coat adjacent to joints which are to be welded after completion of painting.

A7.00 PROTECTION, HANDLING AND STORAGE OF COATED STEELWORK

A7.01 PROTECTION: adequately protect freshly applied surface coatings from damage.

A7.02 HANDLING AND STORAGE:

a) Use methods and equipment which will minimise chafing, chipping and other damage to coated components.

b) Ensure an adequate drying/curing period for each coat before handling.

A8.00 SITE WORK

A8.01 INSPECTION: immediately after erection make good coatings as noted in inspection reports or as otherwise instructed.

A8.02 BOLT COATINGS:

a) Black bolts: after erection and as part of the touch-up, degrease bolts, wire-brush and paint as specified.

b) Sherardised bolts: after erection and as part of the touch-up, paint as specified.

c) Galvanized and zinc plated bolts: after erection and only if site coatings are specified, thoroughly degrease and apply "T-Wash", paint as specified.

A8.03 DAMAGED/UNPAINTED AREAS: as specified in summary sheet at the end of this section.

A8.04 SITE PREPARATION OF GALVANIZED AND ZINC PLATED SURFACES FOR PAINTING:

a) Degrease and abrade using white spirit as a lubricant for the abrade (e.g. coarse nylon pad or similar).

b) Hose down to remove all debris and dust and allow to dry.

c) Brush-apply a "T-Wash" and leave for 15-20 minutes to allow to react.

d) Hose down to remove all excess solution. All areas successfully treated will have turned black. Re-treat all other areas as a) to c) above.

A9.00 INSPECTIONS

A9.01 INSPECTION REPORTS: arrange for an independent inspecting authority advised by the Architect to submit inspection reports to C.A. at intervals as instructed, for both shop-applied and site-applied coatings. Reports to include:

- List of members inspected.
- Standard of surface preparation.
- Dry-film thicknesses.
- Condition of paint skin as despatched from works.
- Condition of paint skin as erected at site.
- Amount of remedial work, if any, required.

A9.02 PREPARATION OF SURFACES: inform C.A. and inspecting authority of projected times when steelwork has been prepared for painting.

COATING SYSTEM: (1) INTERNAL STEEL

SUMMARY DETAILS

1) Two coats shop-applied epoxy zinc phosphate primer.

2) Site-touch-up with epoxy wet steel primer.

3) Site coats as specified by Architect, or bitumastic paint where shown on drawings.

WORKS TREATMENT

PREPARATION: abrasive blast to BS EN ISO 8503-1 and BS EN ISO 12944-4 Grade Sa 2½.

Note: fabricators who blast before fabrication should apply a suitable pre-fabrication primer in accordance with this specification.

WORKS COATINGS:

1) Epoxy zinc phosphate primer: nominal dry-film thickness: 75 microns.

2) Epoxy zinc phosphate primer: nominal dry-film thickness: 75 microns.

SITE TREATMENT

TOUCHING-UP: wire-brush damaged areas and touch-up with a minimum of two coats of wet steel primer. Nominal dry-film thickness: 150 microns.

BOLTS AND NUTS: degrease black bolts, wire-brush and paint as part of the touching-up. Treat zinc plated or galvanized bolts with "T-Wash" before painting.

SITE COATINGS

a) as specified by the Architect, or

b) where shown on the drawings, bitumen H.B. Primer: nominal dry-film thickness: 125 microns.

COATING SYSTEM: (2) EXTERNAL STEEL

SUMMARY DETAILS

1) Two coats shop-applied epoxy zinc phosphate primer followed by one coat shop-applied epoxy micaceous iron oxide.

2) Site-touch-up with epoxy wet steel primer.

3) Site coats as specified by Architect.

WORKS TREATMENT

PREPARATION: abrasive blast to BS EN ISO 8503-1 and BS EN ISO 12944-4, Grade Sa 2½.

Note: fabricators who blast before fabrication should apply a suitable pre-fabrication primer in accordance with this specification.

WORKS COATINGS:

1) Epoxy zinc phosphate primer: nominal dry-film thickness: 75 microns.

   Apply additional stripe coats as necessary.

2) Epoxy zinc phosphate primer: nominal dry-film thickness: 75 microns.

3) Epoxy micaceous iron oxide: nominal dry-film thickness: 100 microns.

SITE TREATMENT

TOUCHING-UP: wire-brush damaged areas and touch-up with a minimum of two coats of a compatible wet steel primer. Nominal dry-film thickness: 250 microns.

BOLTS AND NUTS: lightly wire-brush and paint as part of the touching-up. Treat galvanized bolts with "T-Wash" before painting.

SITE COATINGS: as specified by the Architect.

Submit details of proposed suppliers and paint references with tender. Indicate location of each paint system to be used.

COATING SYSTEM: (3) GALVANIZING

SUMMARY DETAILS

1) Hot dip galvanise.

2) Apply "T-Wash" if site coatings are specified.

3) Site coats as specified by Architect.

WORKS TREATMENT

PREPARATION: acid-pickle.

TREATMENT: hot-dip galvanize to BS EN ISO 1461. Minimum average coating thickness: 85 microns.

SITE TREATMENT

PREPARATION: (in areas which are to be painted) "T-Wash".

BOLTS AND NUTS: treat as part of the Preparation.

SITE COATINGS: as specified by the Architect.

If specified, submit detail of proposed suppliers and paint references with tender. Indicate location of each paint system to be used.