

For the attention of Martin Fletcher – Clerk of the Works
St Paul's Cathedral
The Chapter House
St. Paul's Churchyard
London EC4M 8AD

31st August 2010

Our ref: S3754

Dear Martin,

St. Paul's Cathedral – Dome & Gilded Cross Assembly: Accessed Survey

We confirm carrying out the accessed survey of the Dome & Gilded Cross Assembly, as an additional item during Lightning Conductor System survey, in line with your Order No: 14351 dated 7th July.

Access and survey carried out using our temporary steeplejack ladders, rigging and rope access techniques.

Report

Gilded Finial Cross & Ball Assembly

Externally appears generally secure.

Copper sheet-work(?) of gilded Cross appears satisfactory.

Copper sheet-work(?) of gilded Ball appears satisfactory. However overlaid/built up cast lead-work(?) decorations show some misalignment.

The sections appear riveted on and then gilded over, and security of fixings unknown.

This may, or may not, be a longstanding condition.

See photos. 175 to 178.

Note: Due to Cathedral time constraints the Cross & Ball were not climbed.

Minor corrosion staining evident on horizontal joint of base ring to Gilded Ball, above the gilded scrolls. One vertical bolt hole showed void.

See photos. 179 to 183.

Cast bronze(?) scrolls showed fissuring and partial detachment of vertical soldered joint on each front face.

See photos. 181 to 181b, 212 & 213, 215.

Copper sheet-work(?) to gilded cover of scrolls base-plate appears secure.
See photos. 205 to 209, 214

Internally the vertical structural ironwork shows significant corrosion, and up to 30% cross-section erosion.

This is particularly evident above and below the junctions with bronze(?) horizontal connecting rings at various levels.

There is evidence of bimetallic corrosion/activity, and previous sealant/paint protection is deteriorated or missing.

See photos. 184 to 190, 199 to 204.

Internal faces of Cast Scrolls (non-ferrous: bronze?) appear satisfactory but patinated.
See photos. 195 to 199.

Iron access ladder, secured to base ring of gilded ball, shows corrosion and eroded up to 45% of cross-section area.

See photos. 184 & 188.

Lead Roofed Dome of Cupola

Lead flashing and lead apron to circular cornice below gilded scrolls base show significant weathering damage.

The sealant to horizontal flashing joint is atrophied and fissured.

The lead sheet is eroded away and holed, exposing timber former underneath.

See photos. 205 to 209.

Misaligned horizontal joint reveals iron corrosion debris from hidden structure beneath.
See photos. 218 to 220.

Top of lead roof appears secure but with localised fissures/splits to soldered jointing details.
See photos. 221 to 224.

Lead sheets and corner hollow roll details appear secure but with localised fissures/splits to soldered jointing details.

Lead roundel details appear visually secure but fixings are unknown.
See photos. 225 to 227.

Seating onto masonry of Cupola, incorporating asphalted cornice, appears secure.

See photos. 224, 225 to 233.

Masonry Cupola

Masonry appears generally secure but with gradual weathering loss of face and details, and some eroded/void joints.

16no pinnacles appear secure (by hand).
See photos. 234 to 238.

Golden Gallery

Ironwork appears generally secure but base fixings into asphalted walkway show corrosion and erosion of cross section area.

Dome

Descents 1 to 4 carried out on NW, SW, SE & NE faces.

Lifting and tears in lead sheet were found over lower half of Dome on South faces, descents 2 & 3.

Staining appears to issue from underside of lead sheets at various locations.
See photos. 241 & 242, 248 to 252b.

Stone Gallery, Peristyle and Drum

No significant defects were encountered, masonry and associated leadwork appear secure.

There are remedial works to secure the dome lead sheets, which could be satisfactorily completed using our rigging techniques. If necessary, and subject to appropriate Method Statement, these could be scheduled to allow for unimpeded opening of the various visitor accessed galleries.

We trust your requirements have been correctly interpreted. If there are any matters you would like to discuss or clarify, then please contact us straight away.

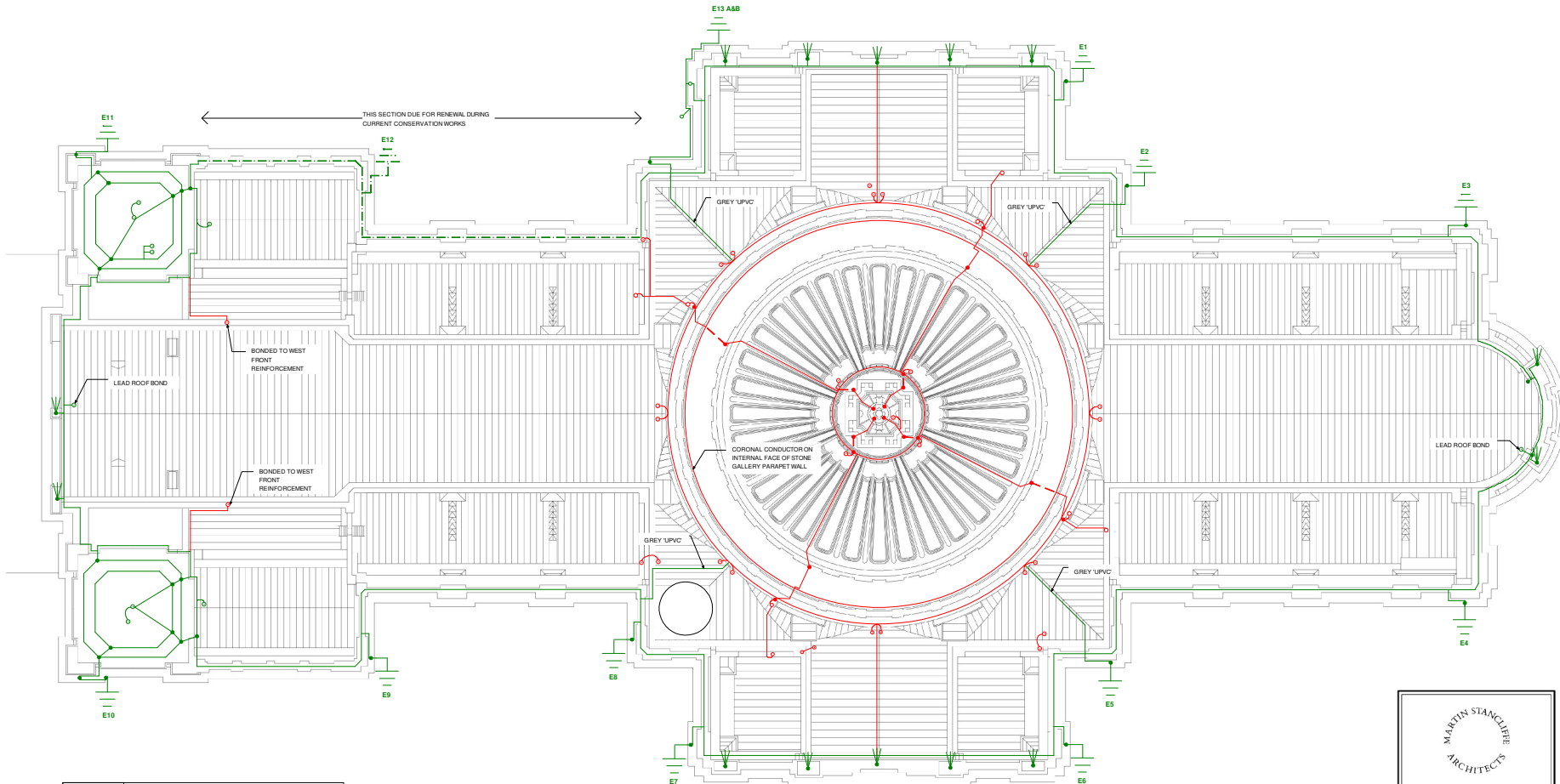
Yours sincerely,

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Mike Grace, Contract Engineer

Stone Technical Services Ltd
www.stonetechnicalgroup.co.uk

enc. Dvd-disc digital photographs & report letter

cc Martin Stancliffe, Surveyor to the Fabric



KEY	
	EXISTING LONG STANDING 1" X 1/8" CONDUCTOR TAPE
	BENEATH WALKWAY ASPHALT/DUCT
	DOWN CONDUCTOR
	INTERNAL BOND (UNKNOWN)
	METALWORK BOND (E.G. FIRE)
	TEST CLAMP AND EARTH TERMINATION
	RENEWED CONDUCTORS 8MM DIAMETER 'STONE' UPVC OR 25X3MM SOLID COPPER
	AIR TERMINAL FINAL
	METALWORK BOND
	CURRENT CONSERVATION WORKS AND RENEWAL IN PROGRESS

MARTIN STANCLIFF ARCHITECTS

29 Manlygate York, YO30 7WH (01904) 644001

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ROOF PLAN
 AMENDED FOR LIGHTNING CONDUCTOR SYSTEM
 - ACCESSED SURVEY AUGUST 2010

DATE	BY	APP'D	ISSUED
1.200	AUGUST 2010	EB	