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Statement of Need supporting document
St Stephen's Church, Shepherd Bush
Follow-up report in relation to condition of slate covered roofs

11 December 2019
6093.02

The description of the church and the roofs and their general condition are referred to in the quinquennial inspection reports both from 2013 and 2018. This report is intended to form an update to the QI reports, the more detailed inspection in 2015 and the further deterioration to roof coverings generally.

South Aisle

Further to my inspection in December 2015, I arranged for sections of the roof covering to be opened-up to enable the cause of repeated roof covering failures to be investigated in closer detail. I also arranged for an inspection of the roof structures by a conservation accredited structural engineer, Alan Baxter Limited, as it was clear from my last three visits that the aisle structures in particular were suffering outward movement (or rotation) and that while the original displacement of timbers may have historic origins, something is still actively causing ongoing movement. A copy of the engineer's report is appended.

A section of scaffold was erected at the east end of the north aisle with a bridging section spanning the chapel mono-pitch roof and abutting the northwest eaves of the chancel roof. Sections of slate coverings were lifted on both roofs – see photographs of typical conditions.

North Aisle

The slates are mostly Welsh but with large scale and many small-scale replacements from numerous other slate sources, including Spanish. The original slates are 22"x11" (560mmx280mm) and of good thickness with little delamination but several had the holes punched very close to the edges (10mm typically) making them prone to failure. The later replacement slates are generally of much inferior quality with delamination already apparent.

The pitch of the roofs and the gauge and laps of the slating were all acceptable.

EDWARDS WILSON
THE GALLERY
ST MARGARET PATTENS CHURCH
LONDON EC3M 1HS

INFO@E-W.LONDON
WWW.E-W.LONDON
020 7583 7799

REGISTERED ADDRESS
5 TECHNOLOGY PARK
COLINDEEP LANE
COLINDALE
LONDON NW9 6BX

VAT NUMBER: 282502710
COMPANY NUMBER: 10850246

RIBA RICS

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The fixings of the slates comprise both copper and steel shank nails 32mm long. There was no discernible pattern to where the copper and steel nails were used but all of the steel nails found were severely corroded – see photograph. It seems highly likely that there will be extensive nail corrosion across these roofs and that this is a primary cause of the failures noted.

The slating is fixed to timber battens of typical section 50x18mm laid over counter-battens (44x6mm) laid direct on the rafters. Typical residual moisture content at that time (2015) of 19% and 14% respectively were recorded. The timbers were slightly spongy and it was noticeable that the slates were easily removable and that subsequent re-fixing was difficult due to the softness of the timber.

Brief inspections of the remaining church roofs were carried out using ladder access and it is believed that similar conditions are likely to both faces of the nave, both faces of the chancel, the north aisle, the north porch, the chapel mono-pitch roof and the double pitched vestry roofs on the south side of the chancel. It is interesting to note that the south aisle, which was in a noticeably better condition, has in fact been re-covered in second-hand slate laid on 19x38mm battens over a type 1F felt underlay and counter-battens. Defects to this latter roof are generally limited to impact damage from falls of slate from the nave roof above it although the condition of the flashings is now worse than at my last inspection.

The rainwater goods are mostly of cast iron but also some uPVC. Whilst of adequate capacity, they are in poor condition throughout with extensive corrosion evident to iron sections. Many sections will need to be renewed but when each section is dismantled, I suggest that the individual components be examined to see whether it is feasible to have them shot-blasted and refurbished rather than renewed. Alternatively, it may be possible to seek permission for the installation to be changed to powder-coated aluminium.

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In summary, the Church have done well keeping the coverings broadly intact but for a number of years but I strongly recommend that all the slate roof coverings be stripped and re-covered within the next 12 months if possible but certainly during following year at the latest if the risk of significant ingress and potential consequential damage is to be minimised.

The re-covering will necessitate new battens, counter-battens, lead flashings, soakers and valley linings and consideration should also be given to improving the thermal insulation to these areas. The proportion of possible re-use of slate is estimated to be no greater than 30% and possibly rather less.

The further structural investigation and repair of the aisle roofs will need to be carried out in conjunction with the re-roofing work and the above-ground rainwater installations should also be renewed or refurbished throughout. It is not yet clear whether any salvage of rainwater installations will be realistic but at this stage I would assume not.

Bob Wilson
MSc FRICS DipBldgCons DipProjMan FRSA MIOD
Chartered Surveyor | Director