

St. Peter's Church, Milton Bryan

ARCHITECT'S REPORT ON NEW ROOFING OPTIONS FOLLOWING FAILURE OF THE TOWER ROOF

October 2021

INTRODUCTION

Back in late 2018, the PCC instructed Michael Dales Partnership to produce a scheme incorporating: improving access to the tower, the provision of a new lead roof covering to the tower and improved internal gutters (to replace the inadequate bitumastic-covered lead roof covering and gutters). This scheme was prompted by concerns raised in the 2017 QI report regarding evidence of water ingress within the tower, and regarding the lack of safe access to the tower roof (albeit the tower roof support was not evidently failing at this time).

Due to a lack of funds the project was put on hold during the pandemic, and in May this year the parish discovered that due to further water ingress, the timber beams and their bearings were failing in two areas of the roof structure, and that temporary propping of the beams was urgently required. A birdcage scaffold has since been designed and the propping is now in place, however the PCC are now facing ongoing hire costs and liability for keeping the scaffold in place whilst a more permanent solution is considered. The options for this are discussed within this report and indicated on the accompanying drawings. Photographs of the water damage to the timbers are included below.





CONSIDERATIONS

The current tower roof is considered to be not of historic value. The timbers are evidently modern (believed to have been inserted circa 1970s), and whilst the current roof covering is lead it has had a bitumastic covering for quite some time, which has irreversibly altered its appearance and significance. Despite this, it was initially proposed in 2018 to replace the existing roof covering with lead, as this is the preferred option. However, there are significant concerns regarding the potential costs the PCC are now facing, given that sufficient funds could not be raised for the initial 2019 proposals (the lowest tender of which was £94,163.00 + VAT, factoring in no contingency). Costs for the lead roof and repair of the timbers are now estimated to be in excess of £150,000.00 + VAT. One of the factors in this cost is the weight of the replacement structural elements (Existing joists are 300 x100) Furthermore, it is not considered likely that the PCC will be able to obtain significant funding in support of repairs to the roof, given that many grant bodies have a preference for projects with a community benefit, and/or conservation of historic fabric – arguably neither would apply here. St. Peter’s has areas of historic value that would otherwise benefit from funding, were it be available.

Given these factors, and the extent of the water damage (as shown in the above photographs), a conservation-led, repair-based approach is not considered to be economic in this particular instance, nor appropriate given the age of the timbers. We are therefore asking that an alternative option be considered in that the existing 1970s roof and covering be stripped out and replaced with a modern, lighter and simpler roof construction. The three options that we have considered are detailed further below, and in the submitted drawings. All three options incorporate the proposed safer access to the tower roof from the approved 2018 scheme, and use 50 x 195mm C24 roof joists at max. 400 c/s.

SINGLE PLY (SIKA SARNAFILL) – OPTIONS 1A AND 1B

Option A proposes a single ply roof system which drains to a new external outlet with lead chute (the details of which are the same as in the approved 2018 scheme). Option B proposes the same roof system, but draining to the existing internal rainwater outlet. Whilst it is acknowledged that of the two options, option A is the preferred in terms of increased rainwater capacity and least areas of weakness (joints) due to having the overflow provided by the lead chute, option B has the benefit of likely being the most cost effective option, and due to all of the work being reversible, would also have the least impact to the tower walls.

A ventilated flashing detail has been shown on the drawings for these proposed options, to minimise the impact of using a modern roofing material adjacent to the stone walls, and to ensure the joists have a 25mm ventilation gap against the tower walls. It is also acknowledged that this is not a traditional roofing material, but in its proposed location is likely to have little impact upon the building from a visual perspective, as it will only be seen when being maintained.

ZINC – OPTION 2

It is appreciated that a metal roof is still the preferred finish for a Grade I listed building, where a roof was previously finished with lead and that after terne-coated stainless steel, zinc is an acceptable alternative (referred to in HE's *'Theft of Metal from Church Roofs: Replacement Materials'* guidance document). Given that zinc is lighter than TCSS and likely to be more cost effective than lead or TCSS, this option has also been considered and detailed.

As indicated on the submitted drawings, zinc is likely to be a more problematic option than single-ply, as well as more expensive. A single-pitched roof would be more desirable than a double-pitched or hipped roof, in terms of reducing the number of joints required, and it would only require an parapet gutter to one side of the tower rather than two or more. However, due to the recommended pitches for this type of roof (min 8 degree), the roof joists will cross the change in thickness to the tower walls (indicated on Section B), which will require an awkward detail at the abutment to ensure water tightness. This detail will need to be carefully resolved with the contractor. To maintain safe access for maintenance it will also be necessary to provide a walkway system.

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