

Neutral Citation Number: [2022] ECC Gui 1

**IN THE CONSISTORY COURT OF  
THE DIOCESE OF GUILDFORD**

Date: 2 February 2022

**IN THE PARISH OF ALL SAINTS, WOODHAM  
THE CHURCH OF ALL SAINTS**

**JUDGMENT**

1. The Church of All Saints Woodham is listed Grade II. It was designed by a local architect, W.F. Unsworth, and the Nave was built by Norris & Sons. It was only partially completed in 1894, built in Bargate stone. Pevsner describes it as being in the Old Surrey style. In 1906, following further fundraising, the Chancel, Tower, Lady Chapel and Choir Vestry were built and the Nave was extended. The work was completed by J. Harris & Son of Woking. The Church is regarded as heavily influenced by the Arts and Crafts movement. It is a good-looking Surrey Church set in a village landscape.
2. The need for an adequate heating system is uncontroversial. The most efficient option is to use an underfloor heating system supplied by Jupiter Underfloor Heating to replace a broken and inefficient hot-air system. This means relaying the floor in the nave and Lady Chapel. That in the nave is constructed of wooden floorboards, that in the Chapel is block-flooring.
3. The issue raised in the petition is whether, as the petitioners wish, a tiled floor is to replace the floorboards in the nave and a stone floor to replace the block flooring in the Chapel or whether the existing floor should be reinstated where possible and, where not, a new wooden floor inserted to replicate the old.
4. The Statement of Significance and Needs records  
“There would be a visual impact by changing the flooring material from wood to tile. This impact would be mitigated by having a tile design in keeping with the rest of the church and echoing our Arts & Crafts heritage.”
5. A more detailed passage justifying the use of tiles is found in the Project Report made available to the congregation:  
“5. What about our beloved wood floor?  
Unfortunately, wooden floors don’t work well with underfloor heating. Every church we have spoken to who have had underfloor heating installed, faced

unhappiness from some members of the congregation who did not want their current floor surface changed. However, they all reported that when the same members re-entered the building to see the new floor in place, all said how surprised and delighted they were with the result. We have worked hard with our architect to come up with a Nave floor tiling design which is in keeping with our Arts and Crafts heritage. The Nave will be in handmade tiles from Aldershaw Tiles: in Sussex Red with Sussex Dark for the border design. The Sussex Red will be in a herringbone design for the centre aisle, to echo the red herringbone pattern tiles we already have in the Chancel. The Lady Chapel will be Hanover Griage Honed Limestone from Natural Stone Consulting, to echo the rest of the stonework in the Lady Chapel.”

6. The Victorian Society express reservations about the use of a tiled and limestone floor in preference to the reinstatement of wooden flooring:

“Firstly, the existing woodblock floor is characteristic of the Arts and Crafts nature of the church and contributes to the well-preserved interior of the building. [...] the replacement of woodblock for tile will have a discernible effect on the acoustics of the building and this should be carefully considered. In light of these concerns, the Society recommends that the option of installing woodblock floor over underfloor heating is explored. This has been done successfully at St Barnabas Oxford, St Thomas Telford Park (where it was used with the Jupiter system proposed here), and in the quire aisles at Manchester Cathedral. While the installation is slightly more difficult, as it requires the blocks to be very dry before installation, it does have a superiority over tile as the thermal qualities of wood mean that, once warm, heat is retained for longer. If the existing woodblocks could be reused this would also reduce the cost as well as improving the ecological impact of the proposals. The Society believes this option would preserve the church’s character while also delivering the parish’s needs.”

7. The parish has responded:

“In relation to the acoustics, we consulted our Quinquennial Inspecting architect (Mandy Lorenz) and our Director of Music (Rick Erickson) when plans were at an early stage, and both were the opinion that a tiled or stone floor would be more likely to sharpen and improve the acoustics, than be to their detriment. In relation to the suggestion of retaining the wood flooring on top of an underfloor heating system, the Lady Chapel floor is currently wood block (on concrete), whereas the Nave is longer strips of wood (on concrete) and it is not known whether these will be easily removable without damage, and therefore if we were to have a wood block floor on top of the underfloor heating, it may necessitate purchase of new wood blocks. In relation to whether it would be suitable from a heating perspective, I have consulted Jupiter who have explained that the thermal properties are such that if a wood block

flooring were used, the underfloor heating system would be insufficient and radiators or other supplementary heating would be necessary, which would increase the cost considerably. I provided the Victorian Society comments to Jupiter and received the following email reply from Patrick Letch, Senior Project Consultant at Jupiter on 6 September:

“There are several components to unpick when comparing wood and tile as floor finishes within the context of this project:

- Retention of warmth,
- Thermal resistance,
- Suitability over underfloor heating.

#### **Retention of warmth:**

A material's ability to retain thermal energy is a product of its specific heat capacity and its density, the term 'thermal mass' is often used to describe this. European Oak has a relatively high specific heat capacity at ~2400J/kgK and has a density in the region of 720kg/m<sup>3</sup>. 2 • An 'average' porcelain or ceramic tile is 10-12mm thick and has a specific heat capacity of ~850-1070J/kgK and a density in the region of 2300-2400kg/m<sup>3</sup>. This means that to raise the temperature of 1m<sup>2</sup> of a 20mm thick oak floor would require 34.56kJ of energy. To achieve the same with a tile that is say 11mm thick with an average specific heat capacity and density would require 24.82kJ/m<sup>2</sup>-a shade under 30% less energy. This means that 30% more energy would have to be supplied to a timber floor finish to raise its temperature to that desired of the underfloor heating system to heat the space. This might [not] sound significant but the reality is that this retention of energy will only come into play when floor heating systems are switched on and off. When using a heat pump the heating is kept at a steady state to maximise efficiency, this method of operation also keeps the heavy building fabric warm and dry.

#### **Thermal resistance:**

The greater the thermal resistance of a floor covering material the more energy that needs to be supplied for the floor surface temperature to be increased. The thermal resistance of a 20mm thick timber is typically 0.12m<sup>2</sup>K/W where a tiled finish is normally considered at 0.025m<sup>2</sup>K/W-four to five times lower! The reduction in thermal resistance will allow the heat pump to be operated at a significantly lower flow temperature whilst offering the required heat output. This lower flow temperature allows the heat pump to operate at a greater coefficient of performance, reducing the electricity required for the long-term. Over many decades of operation this will amount to a significant difference.

### **Suitability over underfloor heating:**

Timber flooring over underfloor heating can work successfully provided that strict control over its surface temperature is maintained. Timber expands and contracts tangentially to the direction of its grain in response primarily to changing humidity. Relative humidity is of course linked to temperature. The most commonplace advice is to keep the temperature of the surface of the timber floor below 27°C to mitigate the risk of its failure - this dramatically reduces the heat output available to a conservative maximum of 50W/m<sup>2</sup> with flooring typically installed in a domestic context. 50W/m<sup>2</sup> is simply insufficient to reliably warm the heavy building fabric and air present in historic church buildings and would necessitate the costly and aesthetically detrimental installation of a supplementary heat source such as fan convectors. If this were a space with comparatively low heat losses then this would not present a problem at all. Timber flooring is not necessarily more difficult and it does not need to be exceptionally dry prior to installation, it simply needs to be acclimatised to a 'mid-point' of the conditions it is likely to see in service. If the wood were very dry prior to installation and the heating system were then shut off (for some maintenance purpose for example) then the timber would likely expand rather than shrink in response. If the original timber flooring has been re-laid on bitumen then processing it so that it can be re-laid beautifully is a seriously labour and time-intensive process that I would wager will be significantly more expensive than tiling the floor. As an aside, our system has not been installed at St Thomas in Telford Park. I trust this is helpful but please let me know if there is anything else you need." For the reasons stated above, a tiled flooring is preferable in terms of both heat output and cost, and we continue to propose it."

8. As importantly, the Victorian Society opposed the tiling design:

"The tiled design, while generically 'Victorian', is characteristic of a different style and period of church design. Secondly, while the application states that the new floor references the existing chancel, the proposed design is more complex and would invertedly emphasise the importance of the nave to the diminishment of the chancel, incorporating grey tiles which are not found elsewhere in the building."

9. The parish responded to the Victorian Society's comments:

"The tiling design was produced after several drafts by our architect (Sarah Khan) until we arrived at the final version submitted. Nevertheless, as a member of the Victorian Society, I take seriously their comments and expertise. If the DAC wishes, I would be happy to engage with the Society to ask whether there were specific amendments that they would propose to the tiling design.

If the DAC, and All Saints, were in favour of such amendments I could engage with our appointed architect to produce a revised plan accordingly - at additional expense to All Saints.”

10. The CBC had not then been consulted and I considered that it would be helpful to have their views on the petition as a whole, but particularly against the background of the comments of the Victorian Society and the petitioners’ response to them.
11. The Victorian Society had not expressed outright opposition to the proposal to install a tiled and granite floor. Rather, it had raised with the petitioners the need to consider and to justify the replacement of the wooden flooring. From the material that I have set out above it is clear that the petitioners fully explored that option and, on the basis of a comprehensive consideration of the material factors, concluded that wooden flooring was not the preferable option. I am satisfied that the reservations expressed by the Victorian Society are proper and thoughtful aesthetic reservations but its view cannot counter the detailed comments which formed the basis of the petitioners’ conclusion. Furthermore, I am satisfied that the petitioners have fully considered the aesthetic loss that will be occasioned by their proposal and, indeed, have also taken into account the reluctance shown by some members of the congregation.
12. The design of the proposed tiling was, however, a matter upon which there was both time and advantage in having the advice of the Victorian Society as to the form of the most suitable design. I stated in a Memorandum to those concerned that the DAC or members of it should be invited to contribute. I therefore delayed the grant of the faculty until the CBC has been consulted and the petitioners and their advisers had had the opportunity of meeting with the Victorian Society to discuss the final design of the tiling.
13. On 18 January 2022, Mr Vincent, the petitioners’ heating project co-ordinator described the result of the further consultation that had taken place on 3 January 2022 with the DAC, the Church Buildings Council and the Victorian Society. This resulted in two options being put forward for consideration as to the design of the flooring.
14. The DAC responded on 12 January 2022 indicating that the members of the DAC, having looked at both floor plans, unanimously felt that the second one with the horizontal tiling was preferable.
15. On 14 January 2022, Mr Hughes, the Senior Conservation Adviser of the Victorian Society, welcoming the opportunity of providing further advice, stated that both options would be acceptable to the Society but, like the DAC,

expressed a preference for the simpler horizontal laid tiles over the herringbone, so that the nave floor might be more clearly differentiated from that in the chancel, which is itself laid in a herringbone pattern.

16. On 17 January 2022, Ms Tracy Manning, Church Buildings Officer (Conservation) of the Church Buildings Council replied that the Council was content with the justification for tiling instead of wooden flooring in this context and was content to defer to the DAC's preference for the quieter arrangement for the nave floor, with the simple horizontal tiling. The Council commended the parish for its collaborative approach, as I do.
17. For these reasons, I now grant a faculty for the installation of the underfloor heating system to be installed below a tiled floor in both nave and side chapel in accordance with the design that has now been agreed as the most suitable.
18. £118,000 funding is still being sought. The project cannot succeed unless it is in place or, at the very least, a substantial part of it. In consequence, I make it a condition of the grant that no contract for the works is to be entered into unless 90% of the contract price is either to hand or pledged.
19. The Bishop of Guildford authorised my continuance in office as Chancellor until 30 November 2021 at which point I was already seised of this petition. Pursuant to section 3(9) of the Ecclesiastical Jurisdiction and Care of Churches Measure 2018 the period of continuance has and will continue until the conclusion of these proceedings.

ANDREW JORDAN  
CHANCELLOR  
(pursuant to s.3(9) of the 2018 Measure)