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An assessment of timber condition and damp at

THE CHURCH OF ST NICHOLAS, LOWER FYFIELD.

INTRODUCTION

Following instructions from Antia Dona Vazquez of the Churches Conservation Trust, I visited the above church on 16.02.23.

The report is in the form of a schedule of photo observations, referenced to layout diagrams of the church on page 8.

The observations are considered collectively in the discussion section – page 8.



TOWER

1

Localised and current water ingress and low level decay to edge of sarking above verge masonry. Unable to get onto roof at this time, although it seems probable there is a problem with the flashing or roof covering.



2

Comment as 1.



3

Possible current wood borer activity in elm bell wheel rim. This is not unusual – would always have been a maintenance item, and requires no action.



4

Historic damage to top of bell frame – not progressive.








5

Historic loss of 50% section of bell frame foundation beam in wall.

The bells are not being swung, so it is probable the remaining section is sufficient to support the frame – engineer to confirm.



<p>6 The edge plate for the bell frame is decayed in the wall – note screwdriver.</p> <p>This is historic decay. The frame seems to be picked up by the masonry ledge, so no remedial work required.</p>		<p>7 Comment as 6.</p>	
<p>8 There is historic loss of sapwood margin in the bearings of bell chamber floor joists. However sufficient section remains for the floor to function.</p>			
NAVE			
<p>9 Cornice boards conceal the wall head.</p> <p>All timber at wall head found to be sound and dry.</p>		<p>10 Superficial and historic wood borer damage to arriase of tie beam.</p>	

CHANCEL

11

Relatively recent oak rebuild. Some very localised water staining. But now sound and dry.



12

Comment as 11



N AISLE

13

Signs of wetting of the W wall. The bearing of the purlin was micro drilled and found to be sound.



14

Ends of rafter plate and cornice decayed historically and locally – note screwdriver.

The arrangement is stable, so intervention not necessary.



15

The back lower edge of the cornice plate is historically damaged by wood borer.

The arrangement is stable, so intervention not necessary.



GROUND FLOOR LEVEL

General

There are problems with high external ground levels around much of the church. This has resulted in damp/wet wall bases internally, which, unsurprisingly have transferred their moisture to any timber in contact with them, namely pews and pew platform decks.

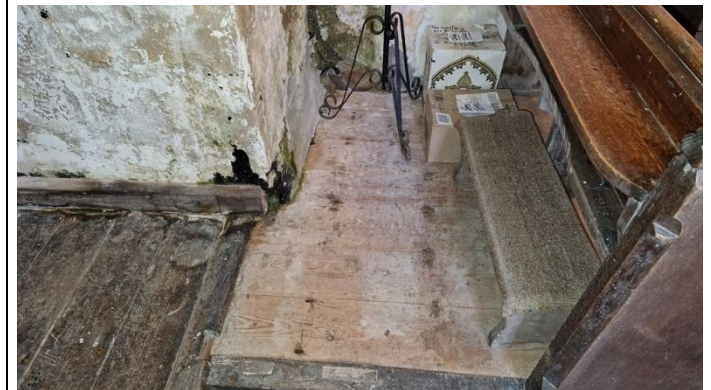
The walls of the nave seem to be plastered in hard cementitious (probably waterproofed) plaster in many places.

16
Approx. 2 – 3m² decayed
pew platform.

Moss growth indicating
masonry is very wet at
this point.



17
Again moss growth
indicating wet conditions
and replacement
boarding showing
previous repair.



18
The floor is sagging and the bench ends in contact
with the external wall have been damaged
historically (and possibly currently) by wood borer
and low level fungal decay.

The floor structure has almost certainly been
decayed, which has caused the sagging.

See discussion.



19

Area very wet. A board was lifted showing oak joists on sleeper walls

The softwood boards are decaying at their edges, together with wedges previously used to stabilise them.

The sub floor is wet.



EXTERNAL

20

The wettest areas internally correspond to the positions of the downpipes externally.



21

High external ground levels around the W end of the church.



22

Although external ground levels reduce around the SE quadrant of the church, a rainwater gulley – arrowed – was found to be blocked – possibly representative of the system as a whole. See discussion.



DISCUSSION

The condition of the timber above ground level is good. There are a few areas of historic and localised damage, but the building material – generally oak, was good quality, durable and therefore able to withstand periodic wetting though leaks etc.

The problem, as with many churches of this type, is rising external ground levels wetting up the wall floor junctions. The only way to address this is to remove the wet ground from against the external wall. Dry well areas have been tried unsuccessfully in this case (obs 20 – 22). They can be successful if the channel surface is able to efficiently collect and discharge any water entering it – which in this case it can't.

French drains are not recommended - <https://www.floydconsult.co.uk/french-drains-help-or-hindrance/>.

The preferred system is already in place – albeit not very well executed. The drains are probably blocked. In this case the existing system should be over hauled to work as initially intended. This will require formation of a lined channel base and confirmation of all sub surface water pathways and drainage points.

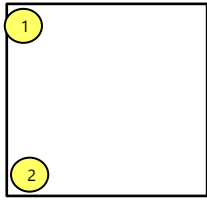
Even after this is achieved, the wall bases will take some considerable time to dry out – possibly never fully drying. As such, measures will be required internally. Timber moisture contents <17% can be considered dry, 17-25% as damp, with those >25% considered wet and at risk of decay. Oak is able to withstand the higher mcs. At present much of the internal structure at ground floor level is oak – which will be able to withstand conditions without succumbing to rapid decay – unlike softwoods. Hard cementitious wall coverings are not recommended – especially where they seem to have been carried out around the pew ends on the N wall.

Eventually use of a lime-based plaster would be recommended, to allow the walls to dry at their bases. However, the wall response to any external works is unpredictable. As a minimum, the floors should be stabilised – especially on the N elevation (obs 18/19), with all decayed material replaced in oak.

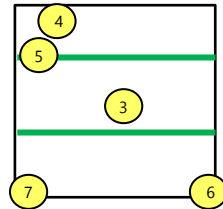
The plaster could be made good in places, although the final scheme cannot be specified, until it is known whether or not the wall will respond positively to any external remedial works.

Tim Floyd – March 2023

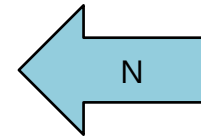
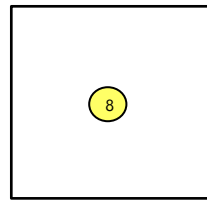
Tower roof



Bell frame/foundation



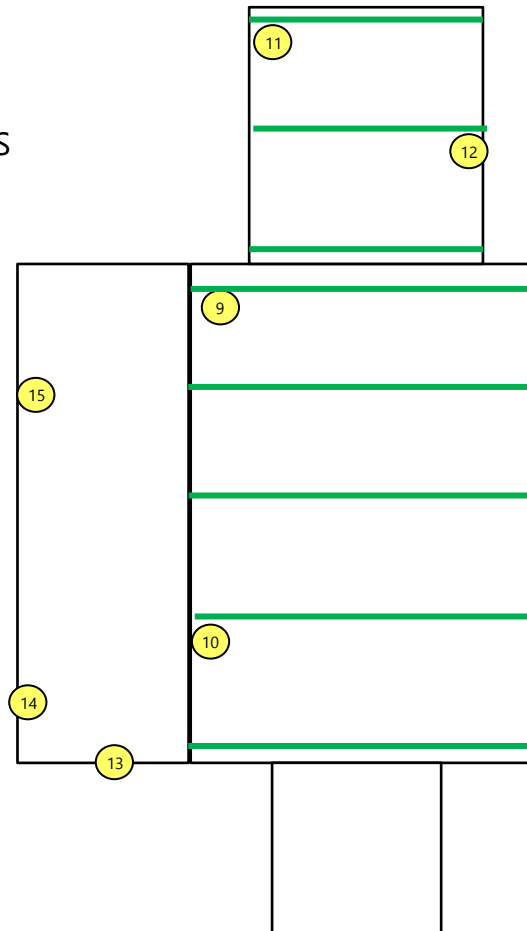
Chamber floor



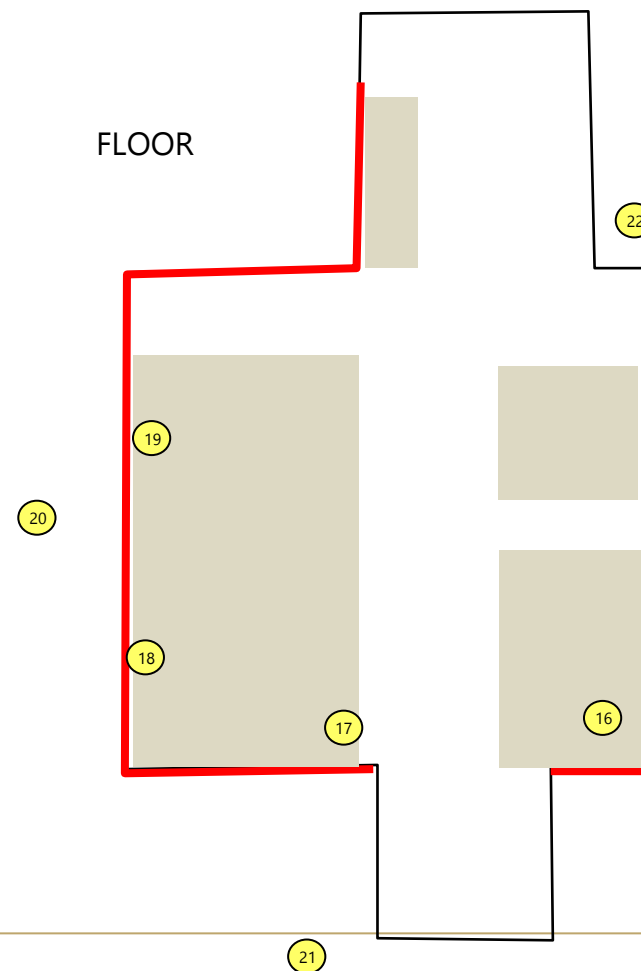
Numbers refer to observations in the text

Red lines indicate timber in contact with low level masonry – with timber moisture contents 20 – 35 % variable

ROOFS



FLOOR



21