

STRUCTURAL REPORT
St Andrews Church
Wollescote

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1.0 Introduction

The consultants were appointed by Rev. David Nichol, Rector of St Andrews Church, Wollescote on behalf of the PCC of St Andrews Church, Oakfield Road, Wollescote to carry out a report on the Church.

The report is to specifically comment on the current condition of the Church following the demolition of the Church Hall after this had suffered from significant subsidence. This Practice had previously prepared a report issued on 6th May 2019 and this records the details of the Church Hall and also the resultant cracking within the Church.

The survey and report deals with the southern section of the Nave of the main Church in the area adjacent to where the Church Hall was present. We have not inspected any area which was covered, inaccessible or unexposed and we are therefore unable to report that any such part is free from structural defect.

2.0 Survey

2.1 External

The Church Hall has been demolished and the area where this was previously present, which is to the south of the Church, (actually south-east but the references will be as per the original report), and this is shown on photograph No.1.



Photograph No.1

Starting with the western section, as shown on photograph No.2, this showed no signs of any cracking and the main work is where the previous toilet block was present. There is a minor amount of repointing where the flashing was let into the brickwork, as shown on photograph No.3.



Photograph No.2



Photograph No.3

Moving around to the southern elevation and the western part, this was in a reasonable condition with the plaster remaining to the walls and some very localised making good required to the top western corner. This also applies to the return back to the main Church, where again there was no signs of any structural distress and this can all be seen on photograph Nos.4 and 5.



Photograph No.4



Photograph No.5

The main area where the Church Hall abutted the Church can now be separated into five bays delineated by cross walls and this is shown on a general view, photograph No.6.



Photograph No.6

Bay 1

This is shown on photograph No.7, and there is a series of cracks within the plaster. However, these are not of a width which are of significant concern and are shown on photograph Nos.8 to 10 inclusive.



Photograph No.7



Photograph No.8



Photograph No.9



Photograph No.10

At the cross wall position, this is in fact not bonded into the main wall and can be taken down, as can be seen on photograph No.11.



Photograph No.11

Bay 2

A general view is shown on photograph No.12. The brickwork is in a reasonable condition with the plaster showing little cracking and there is one horizontal crack which is shown in detail on photograph No.13.



Photograph No.12

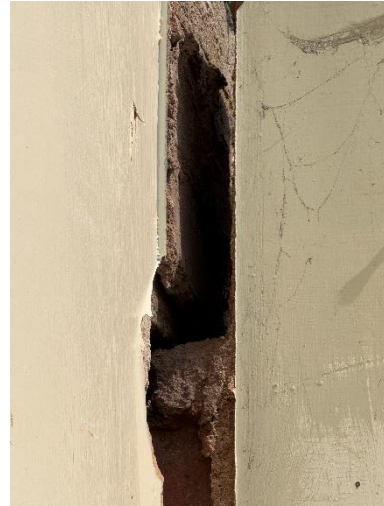


Photograph No.13

At the cross wall position this has detached completely but again, there was no indication this was bonded, as shown in general on photograph No.14 and in detail on photograph No.15.



Photograph No.14



Photograph No.15

Bay 3

A general view is shown on photograph No.16. This is in a reasonable condition with only minor hairline to 1mm cracking and again there is an open joint with the cross wall, these points being shown on photograph Nos.17 and 18.



Photograph No.16



Photograph No.17



Photograph No.18

Bay 4

A general view is shown on photograph No.19.



Photograph No.19

Mid-height there is a slight horizontal crack, as can be seen on photograph No.20.

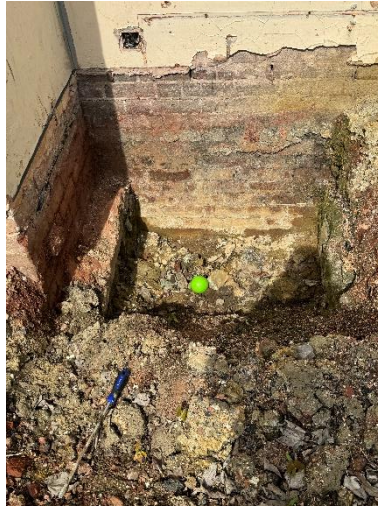


Photograph No.20

In this bay, a trial hole has been excavated and it is apparent that the foundation to the cross wall is 530mm below the damp proof course and this protrudes by 150mm, going down a further 100mm. The main foundation extends down to 920mm below ground level and protrudes by 250mm.

Although the bottom was not fully exposed, it was felt that there was an additional depth of 150mm when probed with a screwdriver.

At the time of the inspection the soil was quite desiccated and a general view of the hole can be seen on photograph No.21.



Photograph No.21

Bay 5

This is shown on photograph No.22 and this is exposed brickwork and shows no signs of any significant cracking.



Photograph No.22

The building then returns to the south, as shown on photograph No.23, then to the east and then returns back round to the north and these last two elevations are shown on photograph Nos.24 and 25. There was no cracking to these elevations and the main item to notice is that there has been ivy cut off, which should be fully removed and the vegetation at the base of the wall should be cleared.



Photograph No.23



Photograph No.24



Photograph No.25

2.2 Internal Survey

A general view of the Church looking from east to west is shown on photograph No.26.



Photograph No.26

The first section of wall is within the western entrance, is shown on photograph No.27, and this was free from structural cracking.



Photograph No.27

There is then the series of five bays, as noted externally, a general view of the southern wall being shown on photograph No.28.



Photograph No.28

Bay 1

This is shown on photograph No.29.



Photograph No.29

It is noticeable that the plaster is partially off the wall. There is a degree of cracking to the casing to the frame, as well as a slight diagonal crack where the plaster has come away, all as recorded on photograph Nos.30 and 31.



Photograph No.30



Photograph No.31

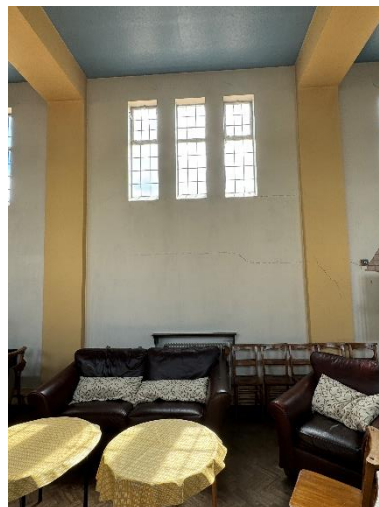
From the bottom right-hand corner of the window there is again minor cracking, as can be seen on photograph No.32.



Photograph No.32

Bay 2

This is shown on photograph No.33.

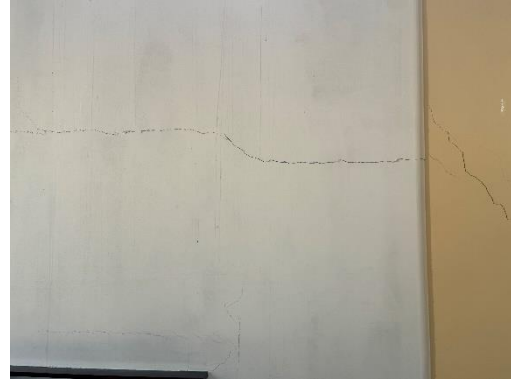


Photograph No.33

The main items to note is there is a horizontal crack from the bottom right-hand corner of the window and also one below here, all as can be seen on photograph Nos.34 and 35.



Photograph No.34



Photograph No.35

There is also minor cracking from the radiator, as shown on photograph No.36.



Photograph No.36

Bay 3

This is shown on photograph No.37.



Photograph No.37

There is a vertical crack which extends up towards the window and then a horizontal crack towards the bottom left-hand corner of the window, all as shown on photograph Nos.38 and 39.



Photograph No.38



Photograph No.39

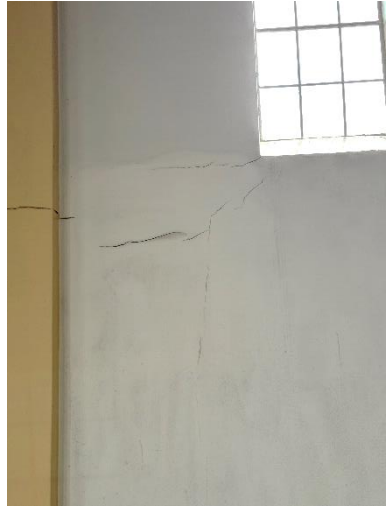
Bay 4

This is shown on photograph No.40.



Photograph No.40

There is again slight horizontal cracking from the bottom corner of the window which then extends across to the pier, and this is shown on photograph Nos.41 and 42.



Photograph No.41



Photograph No.42

Bay 5

This is shown on photograph No.43.



Photograph No.43

There is no major cracking, but there is a disturbance to the decorations where the paint is peeling slightly, as shown on photograph No.44. Where the building then returns as noted externally, this houses the organ, as shown on photograph No.45 and from what could be seen there was no indication of any significant movement.



Photograph No.44



Photograph No.45

3.0 Discussions and Recommendations

Originally, the Church Hall had moved significantly which was considered to be due to clay shrinkage accentuated by the water demands of a row of Leylandii tree immediately adjacent to the Church land, as can be appreciated on photograph Nos.46 and 47, which are from the original report.



Photograph No.46



Photograph No.47

It is clear that the trees have been removed which will be very beneficial for the Church and this can be appreciated on photograph No.48.



Photograph No.48

The cracking to the Church has not increased since the original report in 2019. When comparison is made to the photographs in the original report there has been no increase in width or severity of the cracking.

Externally, there are a series of five brick piers which originally were internal to support the upper part of the Church Hall wall where it stepped in, as can be seen on photograph No.49.



Photograph No.49

The fact that these walls are not bonded into the Church wall is indicative that they are not providing a buttress. They are on a shallow foundation and therefore there is no issue with these being removed and this will not affect the structural stability of the main Church.

The longer term works required will be to cut out and repair the cracking, which is as a result of the previous movement. The cracks internally and externally can all be cut out and repointed, and as they would appear to extend through the full thickness of the brick wall, installing helical remedial ties such as Helibar would be prudent to ensure that the bond is re-established in the brickwork prior to repointing. The plaster and decorations can then all be made good.

Externally, the trial hole should be infilled and it is thought that with the Leylandii now not being present, that the ground will begin to rehydrate. What should be noted is that there has been no further movement since the Church Hall has been demolished and therefore there is not a concern with the overall stability. It should also be noted that the worst cracking was in bay 2, but this is only 1.5mm wide and the vertical cracking at bay 3, 1mm wide, as can be appreciated on photograph Nos.50 and 51 respectively.



Photograph No.50



Photograph No.51

This width of cracking on a building of this nature and age is not of concern and therefore can be repaired as noted above.

Overall, since the trees have been removed and the Church Hall has been demolished, there has been no further movement. The original cracking was due to the pulling of the Church by the subsidence of the Church Hall and as this scenario does now not exist, there is not a concern with the long-term stability of the Church.

The recommended works are localised making good of the fractures and ensuring that the trial hole externally is infilled. The cracking can all be repaired as part of a longer term redecoration and maintenance programme.

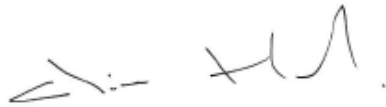
4.0 Conclusions

The Church Hall to the south of the main Church originally suffered from quite significant subsidence caused by clay shrinkage, accentuated by the water demands of a row of large Leylandii trees immediately on the southern boundary of the Church. The Church Hall has now been taken down and the trees removed which will greatly aid the long-term stability of the Church.

The only remaining walls of the Church Hall are the cross walls, however, these are not considered to contribute to the structural stability of the Church and therefore these can be removed. The cracking internally, when compared with the photographs from the 2019 report, does not show any significant increase in width or length and with the Hall and the trees not being present, these can be cut out and repointed the next time a programme of interior redecoration is carried out to the Church.

As the cracks can be seen internally and externally, when they are cut out to be repointed the introduction of Helibar to ensure that the brickwork is fully bonded would be prudent. After this work has been carried out, the plaster and decoration can all be made good. Externally, the cracks can be cut out and repointed, as well as making good items where previous flashings were present.

Overall, it is felt that the Church is now structurally stable and the detailed photographs in this report can be used as a long-term monitor. However, given the width and nature of the cracking, there is not a long-term concern and the previous works carried out have all been beneficial to the overall stability.



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