

Project Title:
Brynhyfryd Chapel, Thomas Street, Treharris

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FCE (Wales) Limited

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FOR INFORMATION

STRUCTURAL APPRAISAL

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1 Introduction

- 1.1** Austin Partnership have been appointed by FCE (Wales) Limited to undertake a structural appraisal of Brynhyfryd Chapel, Treharris to advise on its suitability to be converted into six residential apartments, over two floors.
- 1.2** The purpose of the report is to undertake a structural appraisal of the building to identify defects and advise on any remedial works required.
- 1.3** An initial site survey was conducted on Friday 23rd May 2025, by Gavin Fairclough BSc Hons CEng MStructE, with a further site visit on Friday 20th June 2025, following the clearing of the side access path and removal of some of the external vegetation. The weather during both surveys was dry and sunny.
- 1.4** This report covers the findings of the visual, non-intrusive survey undertaken from GF level, both internally and externally.
- 1.5** The report is restricted to structural matters relating to the existing building and is not intended to be used for any other purposes.
- 1.6** No testing, sampling or analysis has been undertaken as part of this survey report.
- 1.7** We have not inspected parts of the structure or site that were covered or inaccessible, such as the partial basement, foundations, drainage and roof structure and are therefore unable to report if any such parts of the structure were free from defects.
- 1.8** Copies of the original record drawings, structural calculations or prior survey information have not been provided to Austin Partnership as part of this appraisal.

2 Site Information

- 2.1 The property postcode is CF46 5LG and the grid reference is ST097309 (E309735, N196825). The location is shown on a satellite image in Figure 2.1 below. The property is situated in Treharris, a well-established residential area just north of Abercynon, off the A470.



Figure 2.1: Location of Brynhyfryd Chapel, Thomas Street, Treharris (from Google Earth ©)



Figure 2.2: The Interior of Brynhyfryd Chapel prior to its demise
Photo courtesy of <https://www.treharrisdistrict.co.uk>

- 2.2** As we understand the main chapel was constructed in the early 1880s but closed in the early 2000s and has remained empty thereafter.
- 2.3** The building is detached and set in relatively small grounds. Due to its scale in relation to the adjacent terraced residential dwellings, it is an imposing and prominent structure on Thomas Street, but the extensive vegetation growth to the front elevation currently conceals its past grandeur.
- 2.4** Please refer to photographs taken at the time of the survey in Section 3.

3 Observations

- 3.1** The main chapel building comprised of load-bearing solid Pennant Sandstone walls, approximately 600mm thick. At their highest, these were 10.1m to the eaves and nearly 13m to the ridge. The slate covered duo-pitched roof spanned between the long side elevations, with gables to both the front and rear elevations, with the rear gable being rendered. There were two attached single storey extensions to the rear. The one nearest the main chapel had a lower-level slate covered duo-pitched timber trussed roof with rendered wall coverings, and the smaller extension had a mono-pitched roof with stone walls.



Photograph 1: Front elevation of Brynhyfryd Chapel, Treharris

- 3.2** The front elevation of the former chapel was heavily covered in vegetation (Photograph 1), so a detailed structural inspection of the wall could not be undertaken. However, on our second visit, the contractor had locally removed some of the vegetation to the lower reaches, and it appeared the roots had not penetrated the mortar bed joints (Photograph 2). Whilst allowance should be made to some repointing works, based on our investigations to date, this is likely to be limited.



Photograph 2: Partial vegetation removal to the front elevation

- 3.3** Access into the building is currently via a narrow side path to the North elevation. At low level, the external wall on this side appeared to be in a reasonable structural condition, without any obvious signs of significant structural defect (Photograph 3).



Photograph 3: North side elevation of the Main Chapel building

- 3.4** A small side door provides access into the two rear extensions and the Main Chapel (Photograph 4). The North side elevation of the rear extension was heavily vegetated, and it appeared some roots had penetrated the fabric of the structure.



Photograph 4: Existing entrance door into the rear extension and Main Chapel

- 3.5** The larger single-storey rear extension, connected directly to the main chapel, was in a poor state of repair, with many missing slates and extensive vegetation to the side and gable elevations (Photographs 5 & 6). Internally, it appeared there had been a partial collapse of the ceiling and possibly some of the secondary roof structure elements (Photograph 7). Due to the amount of discarded material in this area of the building, it was not possible to inspect the floor structure, but looking at the level differences around the building, it is likely the South side elevation is partially retaining. The adjacent property owner advised us that the long South side and rear elevations were against private land, so our inspection was limited, as we were politely asked to leave. As we understand, both rear extensions are set to be demolished as part of the works, which based on their current structural condition is a sensible approach. It is likely some regrading works and possible new retaining structures will be needed to cater for the level changes, which may require Party Wall notices to be served. Separate advice should be sought in this regard.



Photograph 5: Existing rear extensions (South Elevation)

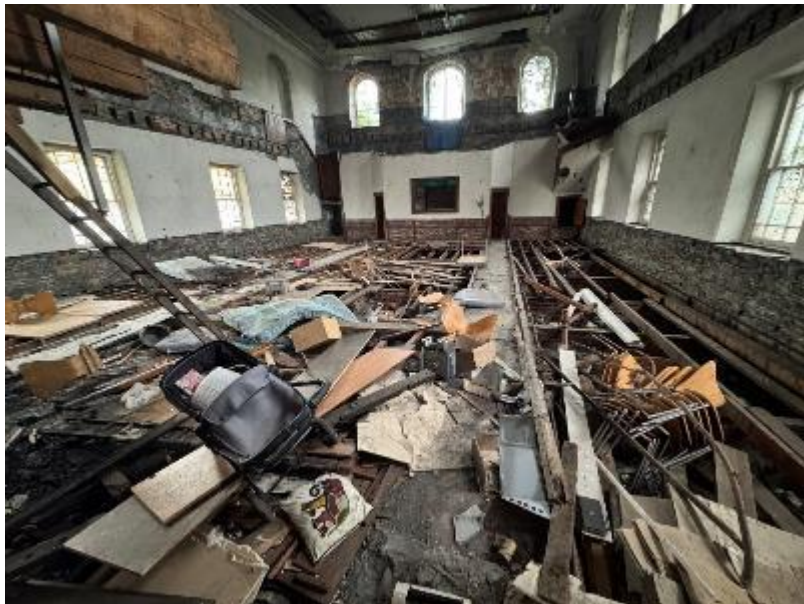


Photograph 6: Missing slates and damaged roof structure (Rear Extension)



Photograph 7: Defective ceiling / roof structure (Rear Extension)

- 3.6** Within the Main Chapel, large areas of the floor coverings had been removed and there were a lot of loose timbers and other discarded materials on the floor (Photograph 8). All the upper floor chapel seating, supporting columns, and pews had also been removed, with small pockets in the wall where the supporting timber structure used to rest (Photograph 10).



Photograph 8: Main Chapel (General View – looking West)



Photograph 9: Main Chapel (General View – looking East)



Photograph 10: Redundant wall pockets for the timber upper floor chapel seating

- 3.7** Generally, the external walls to the side and front elevations were found to be in a reasonable structural condition, but on the East gable elevation there was some localised structural distress to the masonry, where the primary upper floor chapel beams were built into the wall (Photographs 11 & 12). In addition, there was a large vertical crack in gable wall, adjacent to the South elevation (Photograph 13), which may be related to localised ground movement and rainwater run-off from the roof, as the crack extended to GF level.



Photograph 11: Structurally distressed stone to the East gable elevation



Photograph 12: Some localised cracking at the past beam end bearing locations



Photograph 13: Large vertical crack in the gable elevation wall

- 3.8** The ground floor was predominately suspended timber joists, nominally 130 x 45 @ 400ctr. of unknown grade. These were supported on approximately 400mm wide solid stone walls, with three courses of single skin brickwork to the underside of the floor joists (Photograph 14). The spacing of the sleeper walls varied between 1.6-2.2m. Given their age, the timbers appeared to be in a reasonable structural condition. There was random rubble fill between the walls, and in one area we noted potential asbestos roof sheets (Photograph 15). We noted that there were some sections of solid floor in the Main Chapel, these appeared to be the aisles between the pews and the area local to the former main entrance.



Photograph 14: Mainly suspended timber joisted floor on brick/stone sleeper walls



Photograph 15: Potential corrugated asbestos roof sheets

- 3.9** There was a partially demolished timber staircase leading up to the former upper floor seating area, which is currently in a poor condition and potentially liable to collapse (Photograph 16). This should be cordoned off to prevent unauthorised access, prior to removal.



Photograph 16: Structurally unsound redundant timber stairs

- 3.10** Beneath the former organ, there appeared to have been a small fire. Several of the timbers were noted to be charred (Photograph 17) together with the GF timber floor joists and door architrave. Whilst these elements are to be removed as part of the works, further checks on the structural integrity of the supporting masonry should be carried out following the removal of the wall coverings to confirm future load-bearing capabilities. The timber studwork over had failed but was still partially supporting several boards at ceiling level. Access to this area should be restricted to a competent demolition contractor (Photograph 18)



Photograph 17: Fire damaged structure



Photograph 18: Failed timber stud framing (Note: multiple loose boards at ceiling level)

- 3.11** Due to the existing ceiling in the Main Chapel, it was not possible to view the structural condition of the main roof structure (Photograph 19). However, we did note some water ingress damage to the lath & plaster ceiling & architectural feature cornice, adjacent to the West gable elevation (Photograph 20). When viewed externally, this is likely due to some missing slates (Photograph 21). A further high-level inspection will be necessary off suitable access equipment to establish whether the water ingress has caused any structural damage, but given the condition of the general ceiling this is likely to be minimal.



Photograph 19: Existing ceiling in the Main Chapel



**Photograph 20: Part damaged ceiling & cornice in the Main Chapel
(likely due to water ingress)**



Photograph 21: Some missing slates to Main Chapel roof (West gable elevation)

- 3.12** There was a single skin brickwork wall in the Main Chapel that separated the former seating area and the main entrance lobby. The wall showed some minor signs of structural distress, but as it will be demolished as part of the works we will not comment further on its condition.



Photograph 22: Brickwork separating wall between the Main Chapel / Entrance Lobby

- 3.13** There is a large basement below the Main Chapel that extends from the South elevation to the central area between the one of the former aisle walkways (Photograph 23). Access into the basement appears to be from an external door in the South elevation, which is on third-party land. If possible, it would be advisable to infill the basement with clean non-deleterious materials, as this will balance out the pressure on the existing retaining walls. We noted some of the brickwork walls around the basement were damaged and defective, so suitable allowance should also be made for isolated repair works (Photograph 24). It appeared that the aisle walkway spanned over the basement (Photograph 25), so some intrusive tests will be required to determine whether there is sufficient reinforcement in the slab.



Photograph 23: Partial basement beneath the Main Chapel



Photograph 24: Damaged and defective masonry local to the basement



Photograph 25: Concrete slab spanning over the basement walls

- 3.14** Whilst outside the scope of this report, above the fuse board we noted a single red light, so there is likely electrical power in the building. The contractor should be mindful of this when carrying out any demolition work.

- 3.15** There was some vegetation growth to the Main Chapel South elevation, and the rainwater downpipes did not appear to be positively connected to the below ground drainage system (Photograph 26). However, the stonework appeared to be good order with minimal required structural works.



Photograph 26: Main Chapel (South Elevation)

- 3.16** Externally, some of the windows had been infilled with a mixture of blockwork and render or covered over with corrugated metal sheeting. From a limited vantage point, the stone arch window heads appeared to be in a reasonable structural condition. However, there was one prominent diagonal crack to the rear gable elevation (Photograph 27), which will require further high-level inspection and repair following the demolition of the rear extensions.



Photograph 27: Diagonal crack in the gable elevation wall

- 3.17** The low-level boundary wall, stone piers, and metal gates and railings are in a reasonable structural condition, but the wall will require repointing and minor repair works, and the gates and railings will either need to be wire brushed cleaned and repainted or replaced with new.



Photograph 28: Low-level boundary wall to the front elevation

4 Recommendations

- 4.1** At the time of our visit, the site had no perimeter fencing to prevent members of the public from accessing the site. A minimum 2m high boundary fence should be installed to the perimeter of the site prior to the commencement of any further site works. We draw the reader's attention to HSE's *Protecting the public* document *hsg151*, which is available via the following link <http://www.hse.gov.uk/pubns/priced/hsg151.pdf>.
- 4.2** The Principal Contractor should ensure that all existing services are disconnected from the building. Gas, electricity, water and telecommunications services need to be isolated or disconnected before demolition work begins. If this is not possible, pipes and cables must be labelled clearly, to make sure they are not disturbed.
- 4.3** Following a full asbestos survey, we would recommend a site wide clearance of all loose debris, materials and rubbish.
- 4.4** The vegetation to the external elevations should be removed at the earliest opportunity, and any necessary repointing works carried out using an appropriate mortar mix specification.
- 4.5** A Party Wall surveyor should be engaged to advise on the demolition of the rear sections of the building, and the demolition contractor should be made aware of any the potential level differences with the adjacent property. It would be advisable for the demolition contractor's RAMS to be reviewed and commented upon by the engineer, at least 10 days prior to the commencement of the demolition works.
- 4.6** During the demolition works, there is a high risk of injury from falling materials. Workers and passers-by can be injured by premature and uncontrolled collapse of the structure and by flying debris. To mitigate this risk, as far as reasonably practical, a safe system of work should be used. This would include, but not be limited to, establishing exclusion zones and hard-hat areas, which are clearly marked with barriers or hoardings where necessary, and the use of long reach machines, reinforcing machine cabs so that drivers are not injured is recommended.
- 4.7** To mitigate the risk from falls from height only long reach and appropriate machinery should be used on the demolition of this property. The demolition should be undertaken in a systematic manner, from the roof structure down and deconstruction methods rather than demolition should be used where appropriate. Given the close proximity of the neighbouring properties, it would be advisable to agree temporary use of third-party land for access. The demolition contractor should note the potential presence of a suspended ground floor timber floor, particularly in relation to the type and access arrangements for the plant. At the end of each day, no free-standing walls should be left up and the site should be left as clean as reasonably practical. The site should be suitably secured at the end of each day to prevent unauthorised access.

- 4.8** All neighbouring property owners should be notified of the date(s) of demolition works and banks persons should be employed to monitor the perimeter of the site during the demolition works and assist with traffic movements.
- 4.9** The demolition works should be undertaken in strict accordance with BS6187:2011 Code of practice for full and partial demolition.
- 4.10** Due to the unrestrained height of the side elevation walls, it would be advisable to install the new timber first floor at the earliest opportunity. In any event, and prior to the commencement of the internal works, a designed and sheeted external scaffold should be constructed to reduce the lateral wind loading onto the unrestrained side elevation walls.
- 4.11** Post demolition, we would recommend a trial pit is excavated in the proximity of the vertical crack in the East gable elevation wall, and the ground inspected by the engineer for further written advice. As a minimum, and subject to the findings of the trial pit inspection, it is likely a crack stitch repair by Cintec or another approved specialist contractor will be required to restore the structural integrity of the gable end wall. In addition, the gaps in the stone wall should be infilled with masonry and any loose or embedded timber removed.
- 4.12** All fire damaged structure should be removed and the gable end stone wall inspected for any fire damage, following removal of wall coverings.
- 4.13** The holes where the former upper floor was supported should be made good and infilled with masonry,
- 4.14** The ceiling over the Main Chapel should be removed to enable a thorough inspection of main roof structure to be carried out. In addition, the roof coverings should be inspected and replaced where necessary. The missing slates at ridge level adjacent to the West gable elevation should be replaced, and the copings inspected for water ingress.
- 4.15** The internal non-load bearing single leaf masonry wall between the entrance lobby and Main Chapel, together with the redundant timber staircase can be safely demolished, as part of the demolition works.
- 4.16** Consideration should be given to masonry infilling the door leading to the basement and backfilling the area with suitable inert granular material. We recommend these works to reduce the lateral pressure on the retaining wall.

- 4.17** A small section of the floor that spans over the basement should be exposed to enable the existing reinforcement to be inspected and verified by the engineer.
- 4.18** Following the removal of the suspended timber GF joist, any loose, missing, or damaged bricks should be made good or replaced. Subject to the approval of the end user, any stakeholders and warranty providers, we would recommend the timber floor is replaced with new tanalised and treated timber joists. It would be advisable to ensure the existing vents are all clear, prior to closing-up of the floor. New galvanised steel beams will be required off the existing load-bearing walls to support the new internal timber load-bearing walls and 1F structure.
- 4.19** The external boundary wall should be made good and repointed where necessary, and the railings wire brush cleaned and painted with two coats of an approved external grade paint.

5 Conclusions

- 5.1** We have been appointed by FCE (Wales) Ltd to undertake a structural appraisal of the former Brynhyfryd Chapel, Treharris to advise on its suitability to be converted into six residential apartments, over two floors.
- 5.2** We have made several recommendations in section 4 that should be actioned in the next few months to prevent further structural distress.
- 5.3** Providing that an appropriately qualified, experienced and competent demolition contractor is engaged to undertake the demolition works and they are undertaken in safe and logical manner with due consideration of the structural concerns identified within this report then we see no reason why the existing rear sections of the structure cannot be safely demolished down to foundation level.
- 5.4** We are of the opinion that there should not be any embodied or stored energy within the structural components in the building.
- 5.5** In our opinion, based on what we have seen to date, the existing Main Chapel is suitable for conversion into residential use, provided the recommended works are carrying out in a systematic and timely manner.
- 5.6** The Structural Engineer is to be informed if any further defects are found prior during the recommended remedial works, or if any of the information in this report is found to be inaccurate.