

Structural appraisal – Pont y Blew Chapel

Introduction

The purpose of this appraisal is to assess whether the application building is capable of conversion without the need for extensive rebuilding.

The building consists of a small Corrugated iron 'kit' building dating from 1904 (identified by its date-stone)

Observations

The building is constructed of timber studding sitting on a brick plinth. The roof is supported on purlins (4 per side – 100 x 75 section) carried on the end gables and 3 raised tie trusses with steel rod

ties. There is a suspended timber floor which falls from front to rear by approximately 230mm. (the chapel was built with this fall to allow the pulpit to be sited at the lower end to afford clear views from the back.)

The building has remained largely unaltered...the only significant alterations being the insertion of double doors at the north west gable; and the construction of a brick external chimney along the south west wall.

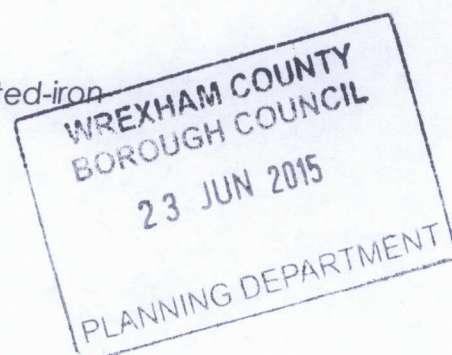
'Corrugated Iron Architecture', by Tim Nicholson, notes that;

"Most of the chapels, pavilions, mission rooms and other small prefabricated buildings that survive are constructed using a framework of 100 x 50mm (4 x 2 inch) softwood timber. Floors are usually suspended timber, with the entire building normally sitting on a masonry plinth which was built prior to the arrival of the building"

See

<http://www.buildingconservation.com/articles/corrugated-iron-architecture/corrugated-iron-architecture.htm>

Walls



The timber stud walls are faced in corrugated iron to the outside and tongued and grooved vertical boarding, to the inside. It should be noted that this building has been well-maintained over the years; it has been regularly painted; the gutters and down-pipes have been maintained and the roof has been attended to whenever needed. Accordingly it has been kept dry and free from water-ingress.

Although it has not been possible to remove the claddings to view the studwork, it is noted that the internal boarding is free from rot and insect infestation and this is a good guide as to the condition of the studwork inside. The sole plate is raised well off the ground level (by between 800mm and 300mm), so the sole plate will have been kept clear of damp and splashing.

Research has identified that usually the sole plate sat upon a slate damp course (and this is highly likely for this late specimen). Accordingly it is considered that the timber stud frame will be in reasonably good condition...this is based upon the above observations and also through observations made when other similar buildings have been restored (see "Tin tabernacles", by Liz Induni - <http://www.buildingconservation.com/articles/tin-tabernacles/tin-tabernacles.html>Tim Nicholson's paper also notes that

"Unless there has been long term neglect and water ingress, the timber frames and floors are often in excellent condition".

Roof

The corrugated iron roof is supported on 4 no. 100 x 75 purlins each side...these in turn



sit on 3 raised tie trusses with steel rod ties. The roof is lined internally with t & g boarding.

The roof sheets have been replaced over the years and are in places uneven and loose.

Meanwhile the centre truss appears to have spread and this in turn has caused the wall to push out at the eaves, particularly on the north east elevation. The south west elevation has the existing brick chimney stack which has acted as a buttress against the movement.

The outward movement can be arrested by either tightening the steel tie rod within the truss and/or inserting a new steel tie rod across the building, below the existing truss.



Floor

The floor is t & g softwood boards on timber joists, laid to fall from front to rear.

The boards are generally in good condition, however it is proposed to remove the floor structure to enable an insulated concrete floor to be laid in its place. Notwithstanding this, it should be possible to salvage sufficient boards to enable them to be re-laid on top of the concrete sub-floor.

Conclusion

The building is capable of conversion with a degree of careful restoration using traditional building techniques; and will not require extensive works of rebuilding.

In particular, good conservation techniques should be employed throughout its restoration. Following the removal of the cladding, the stud walls should be treated for worm infestation and any rotten/badly infested sections should be repaired by splicing in new sections as required.

The splayed wall to the north-east can be brought back into line through the use of a tie-rod and/or tightening the existing steel tie, as necessary. The roof sheets should be carefully stripped and set aside...those sheets which are in sound condition should be re-used and the shortfall made up in a gauge and corrugation to match the existing. New roll-cap ridge sheets should replace the existing.