

Text of a Structural Survey carried out on the former High Chapel, Ravenstonedale for Ravenstonedale Parish Council– August 2008

1.0 BRIEF

To carry out a structural inspection of the former High Chapel, Main Street, Ravenstonedale and prepare a written report on behalf of Ravenstonedale Parish Council.

The purpose of the report is to assess the existing structure and identify any structural defects, deterioration and the like of the building.

As a result of our inspection, recommendations will be made in order to ensure the structural adequacy for the buildings intended use as a Community and Heritage Centre.

2.0 DESCRIPTION OF THE PROPERTY

The High Chapel is located halfway up the main street of Ravenstonedale (Grid Reference NY722038) and was the former United Reformed Church until it closed in 2006.

High Chapel is a single and two storey Grade II Listed Building of traditional construction with solid coursed stone walls generally with a roughcast rendered finish, gable ended pitched roofs covered with natural slate and suspended timber first and ground floors. Access to the first floor is by external stone steps.

Having undergone a number of alterations throughout its life, the core of the building dates from the 18th Century.

3.0 DATES OF INSPECTIONS

Internal Inspection Friday, 18 July 2008

External Inspection Monday, 21 July 2008

4.0 INTRODUCTION

It is proposed to convert The Former High Chapel into a Community and Heritage Centre.

A room by room inspection, together with roof and wall elevations was carried out on the building and any defect, deterioration or the like were recorded.

5.0 INTERNAL OBSERVATIONS

5.1 Main Chapel

This part of the building is double height, single storey with 3No. arched windows down either side. The windows extend from around 1.15m above floor level to around 2.9m to top of arch, with splayed internal reveals and cill. Extensive damp and de-bonded plaster was evident to the window reveals, together with areas of previous repair (see Photographs 1 and 2).

The walls are plastered and painted with a scored Ashlar block effect, above vertical timber boarding to around 900mm high. Damp staining is evident throughout the walls, together with hairline crazing, de-bonded plaster and previous repairs.

There is an area of unpainted wall to the East gable where the Organ was at one time positioned. A diagonal crack measuring around 2mm in width was evident in the unpainted wall which extended from around 1.5m above floor level up to the ceiling (see Photograph 3). This cracking is considered historical and not structurally significant at this time.

The ceiling is plastered and painted with a plaster cornice and ceiling rose.

There is evidence of damp staining throughout the roof, minor damage to the cornice and lines of cracking running across the ceiling (see Photographs 4 and 5).

The suspended timber floor has a natural fall to the East gable and is considered in good overall condition.

5.2 Vestry

The walls are plastered and painted or papered, above vertical timber boarding to around 900mm high. There is some evidence of damp staining to the walls.

The ceiling is plastered and painted with minor cracking throughout.

The suspended timber floor was covered with Linoleum, and we are therefore unable to comment on the overall condition of the floor. However, severe sagging and most likely failure of the floor structure has occurred around the base of the safe (see Photograph 6). We would recommend that the safe is removed and localised repairs carried out.

5.3 Vestry Vestibule

The walls are either lined with vertical timber boards or timber partitions, and the ceiling exposed timber joists with boards above. All appeared to be in reasonable condition for the age of the building.

Again the suspended timber floors were covered and we are therefore unable to comment.

5.4 Vestry Kitchen

The walls are plastered and painted with areas of damp to the window reveals and head (see Photograph 7).

The ceiling is exposed timber joists with boards above and the floor part suspended timber and part solid.

5.5 Boiler Room

The West gable and South walls are roughly plastered and painted with extensive damp and areas of missing plaster. The West gable wall incorporates a stone fire surround and hearth, the remaining walls are timber partitions.

The ceiling is exposed timber joists with timber boards above.

Part of the suspended timber floor has been removed and the floor lowered in this area to locate the central heating boiler (see Photograph 8). Central heating pipes pass through the building structure from the Boiler Room (see Photograph 9).

5.6 First Floor Room Above Vestry

The walls are plastered and painted above vertical timber boarding to around 900mm high. Although the West and North elevations appear to have been relatively recently re-plastered there is evidence of damp staining to the West elevation wall (see Photograph 10). The South elevation has a scored Ashlar block effect finish.

The ceiling is plastered and painted with an exposed timber truss tie and valley beam ends. Some damp staining and cracking is evident particularly in the sloping ceiling adjacent to the South elevation wall (see Photograph 11).

The suspended timber floor in the kitchen area is considered slightly springy when subject to the 'drop heel' test.

5.7 Main Chapel Roof Space

Access was gained via the roof space above the Vestry.

Our inspection confirmed the roof to be of traditional construction with slate, battens and rafters supported by 4No. timber purlins each side of the roof and central ridge board, which in turn span between either a series of 5No. internal king post type trusses and the external gable stone wall.

Although the slates were back pointed with lime mortar, the mortar was degrading with age and areas of backpointing had fallen away.

The king post trusses were considered in reasonable condition for their age, however extensive decay was evident to a number of purlins at both their mid span and at their bearings into the existing gable stonewall (see Photographs 12 and 13). Further extensive decay was evident to a number of rafters (see Photographs 14 and 15), with other defective rafters having been made redundant by installing new rafters alongside the old (see Photograph 16).

The ceiling joists span between the bottom ties of the trusses and are nailed to the underside of the truss tie, the ceiling is made up of lathe and plaster. At a number of locations the ceiling joists have pulled out of the truss tie and dropped up to 15mm under the weight of the lathe and plaster. This is most likely the cause of the cracking in the ceiling observed from below (see Photograph 17).

5.8 Vestry Roof Space

Access was gained via a ceiling hatch from the first floor rooms.

The roof is again of traditional construction similar to that above the Main Chapel.

The king post trusses are of a more recent construction than those of the Main Chapel and again considered to be in good condition.

Extensive decay was evident at the purlin ends built into the Belfry gable wall (see Photographs 18 and 19) and the stonework appeared damp locally to the purlin ends. Relatively recent repairs have been carried out to the roof along the line of the wall, including new rafters and roofing felt (see Photograph 20).

The purlins are generally considered slender for their span and are visibly bowing down the slope of the roof, in addition the bottom purlin running parallel to the West elevation wall has a bolted splice connection a short distance from its connection to the valley beam (see Photograph 21) at present the splice appears to be working satisfactorily however this cannot be guaranteed for the long term.

The ceiling joists span between the bottom tie of the intermediate truss and the North and South elevations. Binders and hangers have at some time been introduced to help support the ceiling and reduce any further sagging (see Photograph 22), this however does introduce additional load to the purlins above.

We would note that bats were present in the roof space at the time of our Inspection.

6.0 EXTERNAL OBSERVATIONS

6.1 Main Chapel and Vestry - South Elevation

The elevation incorporates the doors and windows to the vestry, together with 3 No. high arched windows to the main chapel which have stone surrounds, heads and cills and is considered acceptably level and plumb with no evidence of recent movement.

The elevation is finished with a lime roughcast render which has a soft sandy appearance in places. Areas of debonded render were confirmed particularly at low level, below windows and at the East gable return (see Photograph 23), areas of crazing and hairline cracking and variation in colour were also evident. It would appear from the difference in texture and colour that recent repairs have been carried out to the external roughcast render at low level for the full length of the wall (see Photograph 24). The render has also been taken down to the ground and is therefore being affected from the effects of rising damp.

The stone surrounds to the doors and windows are cracked at a number of locations (see Photograph 25). This is not considered structurally significant, however any cracks should be sealed to prevent water ingress and further deterioration.

Air vents have been provided to this elevation for under floor ventilation which have been partly blocked by the render (see Photograph 26). Under floor ventilation is essential to ensure the long term life of the floor structure, we therefore recommend that the render is cut back to expose the full extent of the vent and allow maximum airflow to the voided floor.

The windows are single glazed and timber framed, split into 3No. main sections with internal glazing bars, the middle opening section is pivoted at the centre. The windows are in poor overall condition particularly those towards the East gable elevation with rotten and missing glazing bars, rotten frames, cracked putty and flaking paintwork. The windows require full refurbishment or replacement (see Photograph 27).

The cast iron gutter and rainwater downpipes appear in reasonable condition and supported off metal brackets driven into the wall, the rainwater downpipes discharge directly into the ground. The condition or location of any sub-surface drainage system could not be confirmed.

The roof consists of stone ridge pieces with local slate laid in diminishing courses.

The ridge and roof line is generally acceptable, however the ridge and roof line does sag over the two storey section of the building. This is consistent with the bowing purlins noted in our internal observations of the Vestry roof space.

There are a number of slate clips evident throughout the roof indicating previous slipped slates with further slipped or overhanging slates at the eaves, the overhang of the slate may well be excessive and would result in the rainwater oversailing the gutters. This should be checked in a period of heavy rain. Any water not discharging correctly into the gutters would have a deleterious effect on the fabric of the walls.

The external steps are in reasonable condition although not in accordance with current Building Regulation requirements.

6.2 Main Chapel East Gable Elevation

The elevation is finished with a lime roughcast render with a similar appearance and condition to that of the South elevation. Again it would appear that low level repairs have also been carried out to the roughcast render and taken down to the ground (see Photograph 28). High level repairs have been carried out at about eaves level, particularly adjacent to the South elevation (see Photograph 29) where a lime render has been applied without a roughcast finish. Hairline cracking is evident throughout the repair. We would recommend the repairs are removed and re-rendered to match the existing.

6.3 Main Chapel North Elevation

The elevation incorporates 3No. high arched windows with stone surrounds, heads and cill and is considered acceptably level and plumb with no evidence of recent settlement/movement.

The elevation is finished with a lime roughcast render with a similar appearance and condition to that of the South elevation. Again low level repairs appear to have been carried out to the roughcast render which has de-bonded and fallen away in areas adjacent to the Vestry wall (see Photograph 30).

The windows are the same style as those in the South elevation and again in poor overall condition with the same problems. The windows require full refurbishment or replacement.

The cast iron gutter and rainwater downpipes appear in reasonable condition and supported off metal brackets driven into the wall. There is extensive damp staining around the West end rainwater downpipe (see Photograph 31) which is most likely the result of a blocked pipe or offset joint. We would note that a bird was nesting in the gutter at the time of our inspection.

The roof consists of stone ridge pieces with local slate laid in diminishing courses.

The ridge and roof line are considered acceptably level, however, extensive moss growth was evident throughout the roof.

The external ground level rises East to West along this elevation such that it is above the internal floor level adjacent to the Vestry.

6.4 Vestry East Elevation

The elevation incorporates a single ground floor window with a substantial stone head, cill and corner quoin stones. The elevation is finished in exposed stonework with lime pointing and is considered acceptably level and plumb with no evidence of movement.

The roof consists of stone ridge pieces with local slate laid in diminishing courses.

The ridge and roof line are considered acceptably level, however, moss growth was again evident throughout the roof.

The overhanging eaves with exposed rafter ends and boards appear to be in reasonable condition but would benefit from maintenance repainting to ensure the long term life of the structure.

The external ground level is considerably higher than the internal floor level with no evidence of under floor ventilation.

6.5 Vestry North Gable Elevation

The elevation incorporates a single first floor window with a substantial stone head, cill and central mullion. The elevation is finished in exposed stonework with lime pointing and is considered acceptably level and plumb with no evidence of movement.

The overhanging verge with exposed dummy timber purlin ends again appear to be in reasonable condition, but would benefit from maintenance repainting to ensure the long term life of the structure.

Again the external ground level is considerably higher than the internal floor level, with no evidence of under floor ventilation.

6.6 Vestry West Elevation

The elevation is finished in exposed stonework with lime pointing and is considered acceptably level and plumb with no evidence of movement.

The roof consists of stone ridge pieces with local slate laid in diminishing courses.

The ridge and roof are considered acceptably level and plumb, although a number of slate clips were evident indicating previous slipped slates.

Other comments as the Vestry East Elevation.

6.7 Main Chapel West Gable Elevation

This elevation incorporates the Belfry, external chimney and ground floor and first floor window and is considered acceptably level and plumb with no evidence of movement.

The elevation is finished with a lime roughcast render which has de-bonded and spalled away throughout the elevation, but particularly at high level (see Photograph 32) and ground level (see Photograph 33).

The external ground is considerably higher than the internal boiler room floor level with the oil tank positioned close to the wall (see Photograph 34).

Although the oil tank is not having any detrimental affect on the wall at this time, we would recommend that the oil tank is repositioned such that it does not surcharge any of the walls.

6.8 Toilet Building

Access to the toilet building is from the external steps half landing.

The toilet building is constructed of either solid stone or rendered blockwork walls with 'Big Six' asbestos cement roof sheeting.

The roof is flashed into the walls with either a cement fillet or lead flashing and the rainwater discharges into a cast iron gutter and rainwater downpipe (see Photograph 35).

The overall condition of the toilet building is considered poor.

7.0 DISCUSSIONS & RECOMMENDATIONS

Old buildings have usually reached an equilibrium with their environment, and over their lives have distorted to accommodate the forces and other actions upon them.

Many old buildings have also been modified a number of times, often on a piece-meal basis. It is important to appreciate the scale of any modification and their combined effect must be considered during any further work.

All buildings are also subject to gradual decay and deterioration of the materials used, weathering and lack of regular maintenance.

Having established the condition of the existing structure, the implications of any further modifications and changes of use must be considered.

Our inspection confirmed the building to be in reasonable structural condition for its age with no signs of recent or ongoing structural movement of the walls. Any cracking that was observed is considered historical and should be filled and made good as part of any refurbishment.

The roof over the Main Chapel and Vestry is in reasonable condition for its age and will function satisfactorily if a weather tight condition is maintained and decayed timbers replaced or strengthened.

We would therefore recommend that any loose and defected back-pointing is removed and repointed.

With the effects of woodworm and decay observed we recommend that any defective purlins and rafters are strengthened or replaced and a timber preservation specialist inspect the building and any recommendations carried out.

Where the ceiling joists over the Main Chapel have pulled away from the bottom tie of the trusses, a secondary support and hanger system should be introduced to pick up the existing ceiling structure and prevent any further movement and cracking to the ceiling finishes.

Local repairs to the lathe and plaster maybe required.

Any defective pointing to the walls in the roof space should be raked out and re-pointed to ensure a weather proof condition is maintained.

A number of slate clips were observed throughout the roof. This would indicate that, either the slates have cracked at their fixings or the fixings have corroded and failed, which is most likely due to the age of the slate and fixings. This is considered a long term problem and is most likely to get worse with time.

As bats were observed in the roof space we would recommend that a survey be carried out by an Environmental Specialist.

With the initial cost of repairing the roof as discussed and increased maintenance costs over the years, consideration should be given to re-roofing the building at which time any defective timbers could be replaced and roofing felt introduced.

Internally, extensive damp staining and de-bonded plaster was observed, particularly in the Main Chapel which is most likely due to water penetration of the stone walls.

We would recommend that each wall is carefully examined to determine areas of repair and areas of damaged or de-bonded plaster are removed and re-plastered with an approved lime plaster to match the existing.

Externally areas of loose, cracked and de-bonded roughcast lime render were observed on the Main Chapel walls in particular at low level. Although our inspection was limited to low level areas of the wall, it is most likely that our findings are representative of the building as a whole. Each wall should be carefully examined to determine areas of repair.

Lime plaster is provided as an external covering because of its soft, flexible and porous make up allowing the building to move and breath, enabling absorbed moisture to evaporate from the exterior surface. Cement render due to its inherently rigid nature is unable to accommodate cyclic movement due to seasonal changes and the rigid covering will crack and allow moisture to

enter. Unable to evaporate due to its impervious make up, the trapped moisture can often lead to mould and damp. The continued freeze (expand), thaw cycle during the winter months will eventually result in large sheets of solid render de-bonding from its backing and falling off. This together with defective rainwater systems and high external ground levels is a common cause of damage to historic buildings.

We would recommend that with the lowering of ground levels, the introduction of a complete rainwater system, together with the replacement of any inappropriate and/or damaged renders the damp/mould should be eliminated, providing necessary maintenance steps are also adopted.

- 7.1 To conclude**, the building is in reasonable structural condition for its age and has performed adequately throughout its life. Providing the above recommendations are carried out, the building will perform well into the foreseeable future, provided it is well maintained on a regular basis.

8.0 DISCLAIMER

- 8.1** We have not inspected woodwork or other parts of the structure which are covered, unexposed or inaccessible and we are therefore unable to report that any such part of the property is free from defect.

- 8.2** We advise that a specialist timber condition surveyor be engaged to inspect all exposed timbers and advise on the extent of any rot or work infestation.