

PROPOSED
RENOVATION WORKS
AT
BRIDGE END FARM
WOODHOUSE LANE
SLAIDBURN

STRUCTURAL APPRAISAL



29/03/23

General Description

The property comprises of a detached three storey (and basement) dwelling under a dual pitched roof built on a sloping landscape east-west, with a lower level attached stone built barn with dual pitched roof to the west elevation.

Dwelling

Walls

Constructed out of regular coursed sandstone within stout quoins and dressed sandstone masonry opening surrounds. To the front (south) elevation the rainwater goods are seated on feature sandstone rests.

The front elevation entrance door has an open plan door built out of sandstone under a mono pitch sandstone slab.

The rear (north) elevation door is enclosed with a sand-stone built storm porch with cement, based profile roof cover.

Roof

The roof is covered with grey slate to the rear (north) elevation and blue slate to the front (south) elevation, capped with dressed sandstone ridge pieces. Verges have raised sandstone cover slabs.

Chimney Stacks

Both gables have rough dressed sandstone chimney stacks.

Rainwater Goods

Front (south) elevation plastic gutter resting on feature sandstone blocks. The gutter wraps round the east gable into the rear (north) plastic gutter with 2 no cement based down spouts.



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Internal

The layout principle is formed by a 'dog-leg', staircase with half landings, enclosed by solid stone enclosure walls providing access to the basement, first and second floors reception rooms.

Floors

First and second floors are suspended timber out of principle binders, joists and close boarded floor covering.

Ground Floor is solid except the pantry which is timber suspended with a stone flag cover.

Condition

Walls

Both east and west gable walls have in past times been rendered (as a preventative measure against damp penetration). The east gable in particular (facing open fields render has separated from the stone exposing approximately 50% of the gable area.

There are significant signs of past damp ingress to the wall surfaces, in particular the lower east gable where ground levels are significantly above ground floor level.

There is a longitudinal masonry open joint (15mm) at the junction of the rear and internal separating walls in line with the vertical line of dressed sandstone jamb to the long window within the staircase enclosure. The two walls do not appear to be bonded (keyed) together, and can be deemed a structural fault. Having said the above there is no evidence of wall bulging or open joints viewing the wall externally.

In summary and excluding the above the masonry shell to the dwelling is in good condition.

Roof

The original roof structure has been replaced approximately 50 years ago with robust stout purlins and rafters. It would appear during the renovation work the best of the grey slate has been used on the rear (north) elevation plane, with reclaimed blue slate to the front (south) elevation.

The grey slate ridge pieces are weather beaten with open joints.

The roof structure is generally in good condition, albeit differing roof materials to the two roof planes.



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Chimney Stacks

The chimney stacks are original, mortar joints have exploded (frost damage) in places. The west gable has had past remedial works in the form of an additional slate capping with ad-hog repairs and asbestos base chimney pot. Lead flashings and soakers have perished due to age.

Internal

Ground Floor

The floor is original out of sandstone flags on an earth sub-strata bed. In recent times approximately (45-50 years) ago the sandstone flags were broken up and an asphalt surface applied.

The small section of floor to the pantry has the original stone flags on a suspended timber floor. The floor is generally in a state of collapse.

First and Second Floors

Binders and joists are original, generally in sound condition there are small lengths of joists adjacent the gables showing signs of worm infestation.

The floors are original out of close boarded timber planks with local areas of worm infestation.

Remedial Works

Principle Walls

Local ground level shall be reduced to allow a finish surface level at least 200 mm below ground floor level.

An injection damp course membrane shall be incorporated to all walls in accordance with specialist company specification.


A flexible cavity tray shall be incorporated into all masonry opening heads.

Dressed sandstones masonry surrounds shall be built into window openings (Ref 18) east gable first floor level.

Stability shall be incorporated to the internal vertical crack at the junction of the rear and staircase enclosure walls with galvanized steel straps to suit site conditions.

Render to both gable walls shall be completely removed, and joints raked out in preparation of new joint procedure.

Stone joints to front and rear elevation shall be fully raked out, front rear and gable elevations shall be repointed with a designed sand-lime-cement mortar. Flush pointed.

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The rear ad-hoc storm porch (north) shall be demolished the entrance door opening rebuilt as a continuous elevation with new window opening to the kitchen as a trade and vast visible impact improvement.

Internal gable walls shall be lined with timber studs, insulation and dry line system against a damp membrane sheet.

The roof cover shall be carefully stripped selected grey-slate stored for reuse. Blue slate removed from site.

Exposed rafters replaced as necessary.

Purlins and rafters treated against decay.

Conservation roof lights fitted in-accordance with manufacturer instructions.

Recover the roof with 'Tyvek' roofing felt, treated battens to suit grey slate fixing.

Fix reclaimed and imported grey slate with min 75 mm head lap to both sloping areas.

Refix existing verge sandstone edgings on code 5 lead flashings.

Relay to line and level existing sandstone ridges.

Chimney Stacks

Joints raked out, repoint with sand-lime-cement mortar.

Replace aprons, lead flashings and soakers with code 5 (red) milled lead.

Rainwater Goods

The goods shall be replaced front and rear with cast aluminium gutters and downspouts using 125 x 100 moulded heritage gutters and 75 mm downspouts.

Attached Building

The building is attached to the west gable of the house with lower floor to floor level of 2.10m.

The building follows the same building line as the house with varying levels access via steps to the front (south) elevation, and sloping landscape to the rear (north) elevation.

The building is split into two compartments. Section 'A' attached to the house has the same front to back depth as that of the house. With wagon door to the front elevation, and single door to the rear.



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Replacement timber purlins and rafters supporting a corrugated steel roof.

The end compartment section 'B' and 'C' is 7.0 m with front to back separated by a stone wall 2.40 m high with mezzanine floor above (section B) at ground level. Section 'B' has a single door access with Blanked out window to the front (south) elevation, and 2 further windows to the rear (north) elevation.

Section 'C' has principally used for hay storage and a shippon with lower floor level to the west gable.

A wagon door provides principle access, with a further single door providing access to the shippon section. There is a rear door opening blanked out into a window, with a further window to the west gable.

A continuous corrugated steel roof from section 'A' is supported on light weight timber purlins and 3 timber trusses at $\frac{1}{4}$ points.

Walls

The walls are constructed out of random rubble stone work with irregular shape and size quoins.

Floors

Floors are stepped, following the general sloping nature of the landscape.

Condition

Walls

The walls in general are structurally sound with no signs of stress or bulges.

Stonework above section 'A' wagon door is regular courses to match that of the adjacent house.

South gable stonework has a heavy rough render over the open joints which over the years has now perished.

Both wagon door heads are soldier arched of a prominent feature and in good condition.

All window and door openings have heads, cills and jambs except 2 windows, front and rear that are not original with ad-hoc surrounds.

In places the sloping landscape is higher than internal floor levels.

Roof

The original grey slate roof has been replaced with the present corrugated steel sheet cover.

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Trusses

Trusses 1 and 3 are original and follow the design and method of installation for that particular era.

Following a "local inspection", we have determined the truss principle bottom ties have intensive worm infestation struts are completely rotten. Local water penetration at the feet of the trusses within the masonry walls have caused further rot. The structural integrity of the bottom ties has been reduced in section in the region of 30%.

Potential up-grading of these trusses would not suffice to support a greater load than that of the present, and would not comply with present codes of practice structural calculation.

Central truss 2 is a replacement following similar deterioration of trusses 1 and 2 and can be deemed in reasonable condition following tentative up-grading and infestation protection.

Rainwater Goods

Present gutters and downspouts (1 spout front and back) are heavy duty (commercial) asbestos cement materials and considering the excessive gutter and spout sizes will suffice to take the volume of storm water for each roof plane.

Remedial Works

Walls

Local ground levels to the rear shall be reduced to allow a finish surface level at least 200mm below ground levels.

Damp proof injection shall be incorporated to all walls in-accordance with specialist company specification.

Dressed sandstone masonry surrounds with cavity trays shall be built into openings void of surrounds,

All excessive surface mortar and joints raked out in preparation of new joint procedure.

Roof

The existing cover shall be replaced with greyslate as original construction and to match the house.

Trusses 1 and 2 shall be replaced with 'king post', trusses following 'Hursts', table for truss member sizes.

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Subject to further investigation it may be economical to replace this truss following suit (on the basis it is not original).

Reclaimed timber purlins of a suitable size shall support new rafters, all prior to felt-batten and greyslate both roof planes with stone ridge tiles.

Rainwater Goods

The goods front and rear shall be replaced with cast aluminium gutters and downspouts.

Use 125 x 100 mm moulded heritage gutters with 2 no 75 mm downspouts to each elevation, with a further downspout to the lower rear outer-rigger.



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