3/2020/0909

Document to Provide Information to Support Listed Building Application

Reroofing Works

At

Snowhill House Main Street Gisburn Lancashire

December 2020

Kevin M Neary Dip Surv, C.Build E FCABE, AssocRICS
Building Surveyor, Chartered Building Engineer,
15 Litherland Ave
Ashway Park
Peel Hall
Manchester
M22 5LD
Tel no 0161 436 4079
Email kevin@kevinneary.co.uk

cabe
fellow chartered
building engineer

1.0 Introduction

I am Kevin M Neary Dip Surv, C. Build E FCABE, AssocRICS, I am a sole practitioner and practice as Kevin M Neary Building Surveyor. I specialise in the survey and repair of historic buildings.

I have been in practice for 20 years, however, I have been working as a Building Surveyor for 33 years. I am a Fellow of the Chartered Association of Building Engineers and an Associate Member of the Royal Institution of Chartered Surveyors.

I have been undertaking condition surveys on all types of buildings since 1987. My current work involves surveying existing buildings for defects, advising clients on remedial measures. I am also involved in the conversion and repair of historic buildings and advising clients on the drying of fire damaged and derelict buildings.

Recent projects include : Salford RC Cathedral, Houghton Grange Huntingdon, Victoria Baths Manchester, Linotype and Machinery Altrincham

This document provides information to support a Listed Building Application for re-roofing works.

2.0 Scope

This document provides supporting information on the proposals to undertake reroofing works to the property and general maintenance work which would be prudent to undertake when a high level scaffold is in place. The document does not provide comment on any other parts of the building.

3.0 General Description

All directions are taken facing the front of the property looking through towards the rear. The front elevation is taken as that overlooking Main street and faces roughly North.

This is a stone built property constructed over 3 storeys. The walls are of a random local rubble stone construction and the external surfaces on the front elevation have been parged with render to create the slobbered effect.

The roof is of a simple pitched construction and is overlaid with a local flagstone slate which is laid in diminishing courses.

Photo, rear roof slope

The property is Grade II listed and details on the Listed Buildings register can be seen below:

4.0 Listing

SD 82 48 GISBURN MAIN STREET (South Side)
12/72 Snow Hill House and Snow Hill Studio
16-11-1954 (formerly listed as Snow Hill)
GV II
House and shop, C17th. Slobbered rubble with stone slate roof. 2 and 3 storeys with attic. Windows mullioned with outer chamfer and mostly with inner cyma moulding. Snow Hill Studio, to the left, is of one bay and 3 storeys. The ground-floor window is of 3 lights, the 1st and 2nd floor windows of 4 lights with hoods. The door, at the left, has a chamfered stone surround. The ground floor of Snow Hill House corresponds with the 1st floor level of Snow Hill Studio. To the left of the porch is a 5-light window with hood. To the right is a reconstructed 2-light window. On the 1st floor are 2 4-light windows with hoods. The door, reached by external stone steps and enclosed by a timber porch, has a chamfered stone surround. The right-hand (west) gable wall has a one-light chamfered window. The left-hand gable wall has a projecting stack. To the right of the stack on both the 1st and 2nd floors is a one-light chamfered window with segmental head. Above is a 2-light double-chamfered mullioned attic window, the left-hand light having leaded glazing. Chimneys on gables and between house and studio. Both the latter and the left-hand chimney have brick caps.

Listing NGR: SD8293248799

5.0 Background

There is evidence of some slipped stone slates which have been repaired with wire and lead tabs, there is also some evidence of cracked and broken stone slates which have been repaired with welsh slate inserts under the breakage.

Photo, tabbed and broken stone slates

This has encouraged water ingress and water staining and damage to the plasterboard ceiling below.

Photo, damage to ceiling due to leaks

The owner has engaged a local roof contractor Mass Roofing who concluded that the roof was difficult to repair due to the urea formaldehyde foam backing material which has caused some decay to roof battens. The recommendation is to re-roof with new battens.

A recent Listed Building Consent Application for re-roofing works could not be validated as more detailed information is required.

6.0 Observations

6.1 Roof Cover

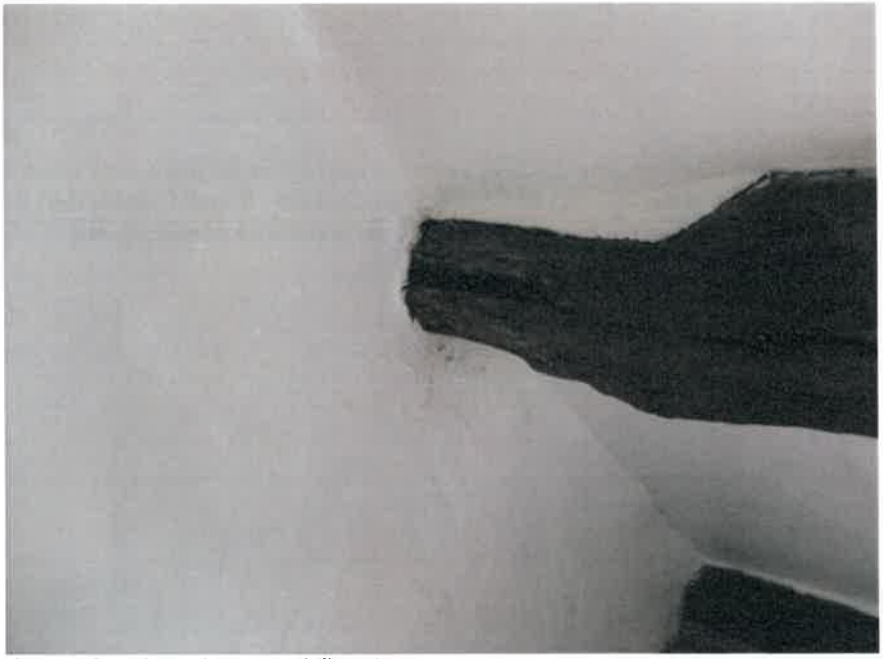
The roof is of a simple pitched construction and is overlaid with a local flagstone slate which is laid in diminishing courses. Some of the eaves courses are 800 mm in width. It would appear the stone slates fix and hook directly onto the timber battens and there is no underfelt material present.

Photo, Roof and front elevation

6.2 Roof structure and build-up

The supporting roof is of a traditional cut roof construction which consists of 3 no purlins per slope which support 75 x 65 mm softwood joists at 400 mm centres. The rafters are not original as the oak purlins are adzed and the softwood rafters have circular saw cuts so may have been replaced during the first part of the last century.

The purlins are a combination of original oak log purlins and some later softwood replacements. There was some concern regarding the condition of the middle log purlin where it enters the left-hand party wall on the rear slope. The end is very soft in this location and requires drill testing and possible treatment/repair by a suitably qualified carpenter.



Photo, soft purlin end requires drill testing

The purlins span onto 2 no oak truss frames which divide the top floor area into 3 no equal spaces. It would appear that the frames have been reinforced along the top of the principal rafter with softwood sections and historic repairs have been undertaken to the original oak tie beams.

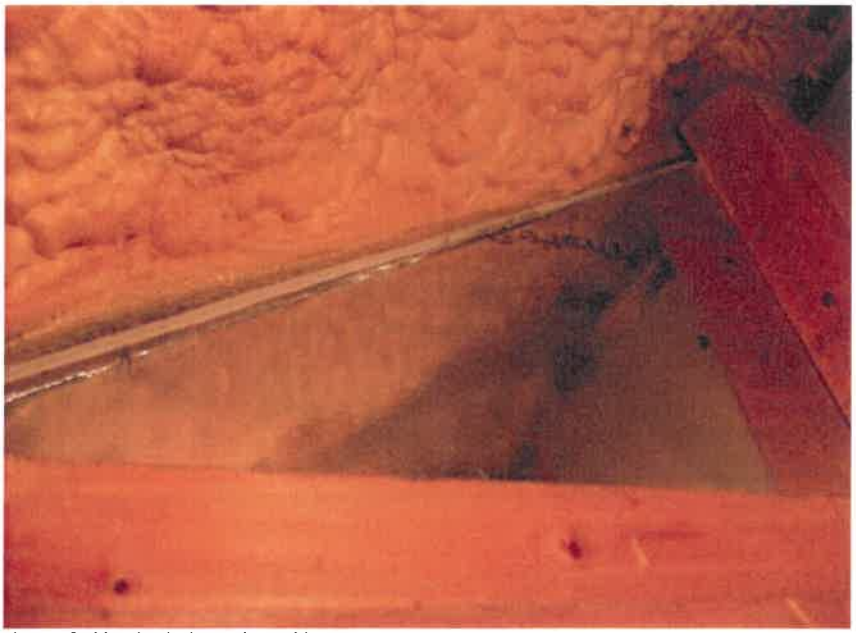
Photo, supporting oak frame

Photo, historic softwood repairs to oak frame and tie beam

There are 5 no existing the Velux type rooflights which provide light to the top floor areas.

The undersides of the rafters would appear to be plaster board and skimmed to create sloping ceilings within the top floor rooms.

It would appear that the plasterboard is a foil backed plasterboard which will provide a vapour control layer on the warm side and prevent water vapour from inside the building, from entering the build-up of the roof structure which will have had some benefit.



Photo, foil backed plasterboard lining

Prior to plaster boarding it would appear that the underside of the stone slates and battens had been consolidated using a urea formaldehyde spray foam. I am informed that this work had been undertaken by the previous owner Mr Clegg in the late 1980s – early 1990s, and prior to the current owner moving in. The current owner has been in the building for 22 years.

Photo, spray to underside of roof

The consolidation of roof structure using urea formaldehyde foam has been deemed controversial as it is non-breathable and will trap moisture evident in the form of condensation which will occur on the underside of the stone slates and drip onto the tops of the rafters and timber battens.

Research concluded that the urea formaldehyde form has a thermal conductivity level of 0.039(W/mk). The foam has been sprayed into the void between the two rafters and appears to have a thickness between 40 to 50 mm. In some locations the application is poor, and the thickness is less than 25 mm. It is proposed that this could be replaced using a treated sheep's wool which has a similar thermal conductivity value.

The benefit of the sheep's wool product is that it is breathable and hygroscopic and therefore will absorb and hold moisture during wet periods and release this in dry conditions. This could be laid in a thickness of approximately 50 mm on top of the existing foil backed plasterboard and will allow a sufficient sag as required to the proposed roofing felt.

It is proposed that the felt will be Proctor Roofshield which is breathable and air permeable and has been tested to outperform other breathable felt systems available.

The use of breathable material will encourage the escape of water vapour should there be any penetration through gaps in the existing foil backed plasterboard ceiling. Condensation will still occur on the underside of the stone slates, however; this will now discharge and drip onto the top surface of the new felt where it can run to the eaves.

The proposed construction will also provide slightly improved levels of thermal comfort within the second floor areas.

It is considered that the proposed works will greatly improve the conditions inside the Listed Building and will have no detrimental effect of the existing roof structure or any other parts of the building.

A Protimeter moisture meter was used which recorded moisture content readings of 20% plus to the top surface of the rafters where they could be tested to the front right corner within an airing cupboard.

It should be noted that the margin for timber decay is 20%, and therefore, there is concern that there will be some decay within the rafters and battens. It is considered that the foam will exaggerate the conditions for decay as it will prevent the evaporation of moisture from the timber surfaces where the foam has been applied and will cause sweating.

Any timber repairs to the roof structure will be undertaken on the basis that the main priority is to conserve the existing structural fabric and therefore, any new rafters will be inserted at the side of existing, so the existing rafters can remain in place.

6.3 High Level gutters

Externally there are cast iron rainwater gutters positioned on both the front and rear elevations.

On the front elevation the gutter is a decorative ogee type which is supported on small wrought iron brackets. There is evidence of rusting and corrosion is to several of the brackets and joints within the gutters. Repairs should be undertaken in conjunction with the roof works.

Photo, front ogee gutter

On the rear elevation the gutter is a standard semi-circular cast iron gutter which is supported on standard rise and fall brackets which are spiked into the upper sections of masonry. There was some evidence of rusting and corrosion and repairs should be undertaken in conjunction with the roof works.

Photo, rear gutter

6.4 High Level Chimneys

There are two chimney's to the property these are located at the apex of the roof on both the external gable wall and the party wall.

The chimney located to the right hand gable is of a random local stone construction. There is no chimney pot evident to the chimney.

It was not possible to view the condition of the flaunching.

Photo, right hand chimney, rear view

The other chimney is located on the party wall and it is assumed that there is joint responsibility for this between the two adjoining properties. There is evidence of sulphate attack to the mortar at high level just under the over sailing stone slate course.

The cover flashings appear to be traditionally mortar parged.

Photo, left hand chimney on party wall

7.0 Proposed works (To be read in conjunction with Drawing KN01)

7.1 Roofing

7.1.1 Allow to construct suitable working platforms to include loading and grading areas for stone slates.

7.1.2 Allow to protect cast iron gutters to eaves to prevent accidental damage when removing large stones slates from roof.

7.1.3 When removing slates allow to strip areas either side equally, so that the roof is never eccentrically loaded. This will prevent slippage of the roof structure which can sometimes occur when heavy slates are removed from one single side.

7.1.4 Allow to carefully remove stone ridges and set to one side for re-fixing.

7.1.5 Allow to carefully remove stone slates, carefully remove oak pegs or fixings and stack upright to enable grading to condition and thickness.

7.1.6 Allow to carefully remove timber battens and dispose of.

7.1.7 Upon removal of slates allow to carefully cut away sections of urea formaldehyde foam without damaging the existing ceiling below and dispose of.

7.1.8 Allow to protect existing 5no Velux type rooflights to remain in position during works.

7.1.9 Allow to make all areas temporally watertight during the works.

7.1.10 Allow for timber specialist or suitably qualified person to inspect the top surfaces roof timbers and allow to treat, replace or supplement any affected timbers with new 75 x 65 mm double vacuum treated joists, screw fixed to purlin is as existing. Note. when fixing into oak purlins stainless steel fixings will be used to prevent tannin corrosion and may have to be pilot drilled.

7.1.11 Allow to inspect ends of purlins where they are in contact with the stone able and party walls. Allow to treat as a precautionary measure using insecticidal/ fungicidal paste.

7.1.12 Allow to supplement the suspect purlin end on the rear slope which enters the party wall with new 100 x 100mm C16 double vacuum treated soft wood purlin, to be fixed to the back side of the purlin with Timberloc screws at 600mm centres. This will be invisible from the room. Allow to wrap ends of softwood purlin in wall with PVC DPC.

7.1.13 Allow to introduce new Thermafleece sheep's wool insulation 50 mm thick to be tightly packed between rafters any gaps between sections to be firmly plugged with offcuts.

7.1.14 Allow to overlay rafters with new Proctor Roofshield felt fixed in accordance with manufacturer's instructions.

7.1.15 Allow to overlay with new 25 x 50 mm double vacuum treated roof battens stainless steel screw fixed. Note. 18 mm thick roof battens may be used if matching to existing as the battens need to match with the battens to the adjoining building.

7.1.16 Allow to form small back gutter to adjoining property chimney to rear right slope using double vacuum treated softwood timber.

7.1.17 Allow to fix new code 5 lead gutter back to chimney in accordance with Lead sheet Association codes of practice.

7.1.18 Allow to refix stone slates using aluminium pegs.

7.1.19 Any new slates to replace damaged and broken will be reclaimed to match existing.

7.1.20 Include for new code 5 lead saddles at abutment to chimneys.

7.1.21 Allow to fix existing ridges, these are to sits on a full bed of mortar and the edge between the slate and ridge is to be finished flush. No fillet pointing will be permitted.

7.1.22 Verges to be formed as shown in drawing with 60 mm approximate over sail and reinforced with stainless steel expanded metal. Allow to re-point using 1:2.5 (NHL 3.5 : 1 part Waddington fell/1 part small granite chippings). If works is to be done in the colder months use 1:4 (NHL 5 : 1 part Waddington fell/1 part small granite chippings).

7.2 Chimneys

7.2.1 Allow to carefully inspect the condition of the flaunching and mortar pointing to both chimneys.

7.2.2 Allow to replace any damaged flaunching with a Verges mix and trowel to smooth surface.

7.2.3 Allow to insert vermin mesh to top of pots which are not in use to prevent vermin entry.

7.2.4 At abutment with roof and chimney allow to insert code 5 lead soakers and code 5 lead cover flashings. For a 30° pitch roof pitch, include for a minimum 150 mm down stand on apron flashings in accordance with Lead Sheet Association codes of practice. Include for copper tabs to secure apron flashings in position at 300mm centres to prevent sagging of lead in service.

7.2.5 All lead to be coated with patination oil upon completion.

7.2.6 In locations where there is limited fixing for the lead allow for mortar fillets as shown on drawing. Mortar fillets are to be reinforced by stainless steel expanded metal to prevent cracking.

7.2.7 Allow to cut out any defective pointing using hand tools or a reciprocating tool to a minimum depth of 25mm or 1.5 times the width of the joint. (No angle grinders will not be permitted). Mortar mix for repointing chimneys to be 1 : 2.5 (NHL 3.5 : Waddington Fell well graded sand) the pointing should finish flush with the outside surface of the stone and the surface should be brushed with the churn brush close to final cure to remove the surface material and expose the aggregate.

7.3 Cast-iron rainwater goods

7.3.1 Allow to inspect high level rainwater goods and support brackets from the scaffold.

7.3.2 Allow to carefully remove all loose and flaking paint using a wire brush.

7.3.3 Allow for Butyl putty repairs to any open gutter joints as required.

7.3.4 Allow to treat with a zinc rich primer and finish in black external grade paint as existing.

I trust the contents of this statement meets with your requirements and ask that you contact me on 0161 436 4079 should you require any further information.

Yours sincerely