



Rotorgraph

Roof Inspection Report

In respect of:

5 Baldwin Terrace

Halifax

HX3 9XP


Report produced by Simon Hollis MRICS

For and on Behalf of Rotorgraph Surveys
Limited

8th November 2023

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Signature:  For and on behalf of Rotorgraph Surveys Limited

Date of Report: 8th November 2023

1.0 About this Report

1.1 Address of the Property Surveyed (The Property)

5 Baldwin Terrace
Halifax
HX3 9XP

1.2 Brief and Report

Instructions were received to attend the property and undertake a drone inspection of the chimney, roof covering and guttering. Following the inspection, this report has been prepared based on the imagery taken whilst on-site. This report details our general opinion of the condition of the roof covering. Unless specifically agreed in the Scope of Services the technical design of the roof elements, falls, fire compliance and wind loading calculations do not form part of this instruction. Plant and other rooftop elements are excluded from the inspection and the inspection and report should not be considered a full building survey.

We hope that the report helps you to make a reasoned and informed decision on any required repairs and maintenance. We detail the prioritisation of works in our Observations and Recommendations section (2.0). The information and recommendations detailed in this report are provided in good faith based on current best practices and experience, this is not intended to form any kind of guarantee. Where works are recommended, you should obtain detailed written quotations and establish design liability before you enter into a legal commitment. Where products are recommended, others will likely be available. If you decide not to act on the advice in this report, you do so at your own risk.

We have not been instructed to advise on repair methodology, prepare schedules of work, prepare tender documents or provide project management advice, however, if you would like to discuss any of these services, please do contact us.

1.3 Date of Inspection

The property was inspected by Rotorgraph Surveys Limited on 6th November 2023.

1.4 Client

This survey report and any associated correspondence are for your personal use only and no responsibility can be or will be taken to others who may see it or wish to depend on it.

1.5 The Surveyor

On behalf of Rotorgraph Surveys Limited, the site inspection survey was undertaken by Gary Brown.

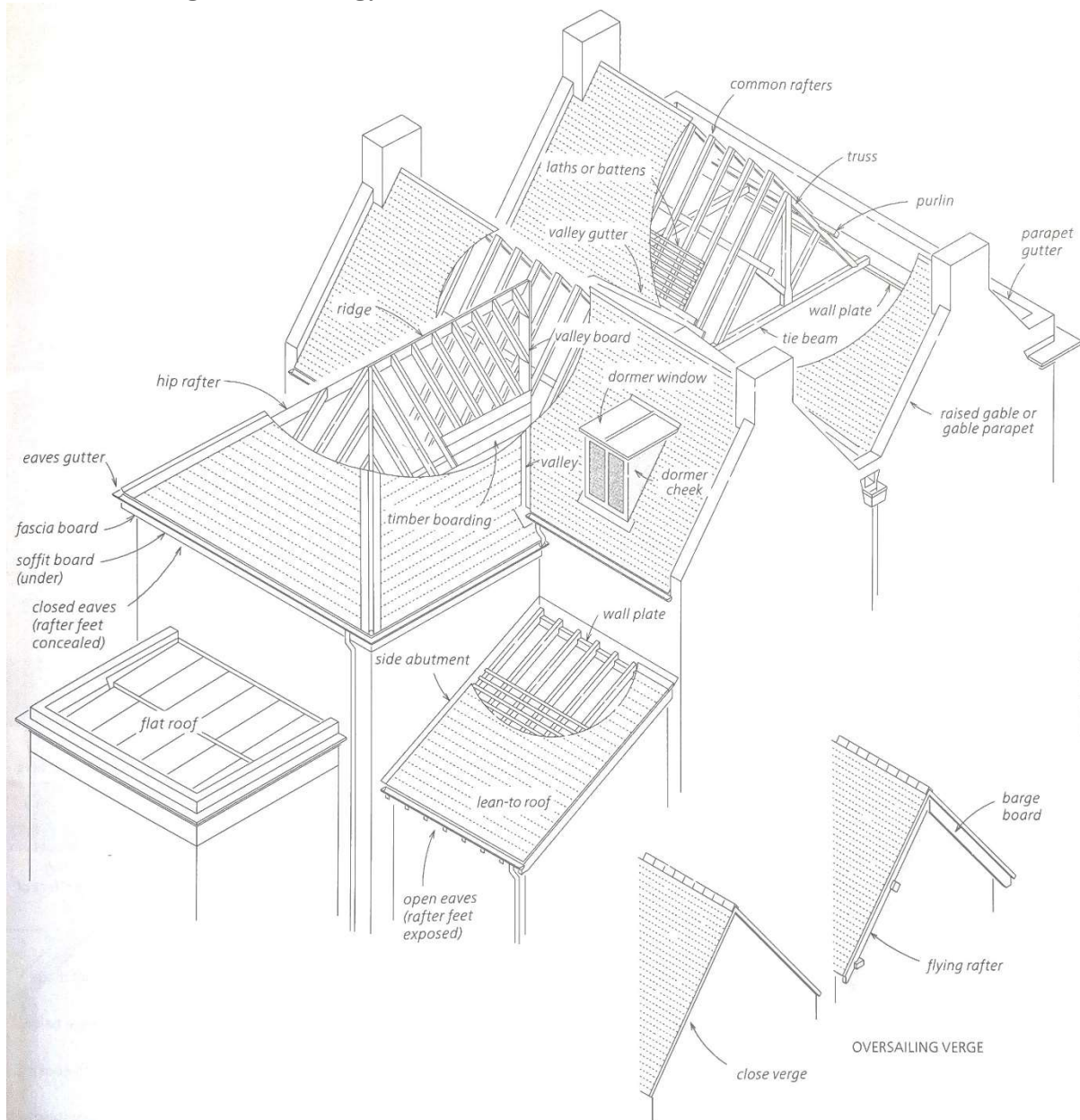
This inspection report was prepared by Simon Hollis based on the imagery taken on-site.

Simon holds a HND in Estate Agency, a Bachelor's with Honours degree in Urban Land Economics, a Master's Degree in Building Surveying and is a Member of the Royal Institution of Chartered Surveyors.

Simon is Dyslexic, please excuse any spelling or grammar errors in this report. Specialist software is used, unfortunately, it is not as clever as the developers would have you believe.

The Surveyors declares no conflict of interest in inspecting this property.

1.6 Roofing Terminology



Roofing Terminology. Credit: English Heritage

Roof Recovering

Where recommendations are made for a replacement covering, the manufacturer should provide a detailed specification along with comprehensive drawings, u-value calculations, a condensation risk analysis, wind uplift calculations and a fixings specification and layout. The manufacturer should be able to supply a list of approved contractors to undertake the work and monitor the installation through on-site visits to confirm that the works undertaken meet their specifications and are undertaken to the appropriate standards of workmanship. If the manufacturer does not offer this service, we recommend that the project is managed by a suitably qualified independent professional.

Flat roof fall should be designed at 1:80 to achieve a finished fall of no less than 1:40.

When planning a roof recovering, any plant, roof accessways and penetrations need to be considered from the outset as they must be properly planned for.

Where more than 50% of the roof coverings are replaced, compliance with current building regulations will be required.

To comply with BS:6229, the roof needs to be inspected at least every 12 months or, as per the manufacturer's warranty provision.

Pitched Roofs

The minimum fixings requirements of BS 5534 need to be achieved by the contractor together with any manufacturer-specific requirements bearing in mind wind uplift resistance data for the site.

All leadwork needs to be installed according to the Lead Sheet Association guidance.

Mortar

Mortar should always be sacrificial to the stone/brickwork/slates/tiles. In practice, this means that the mortar mix should be softer than the stone/brickwork/slates/tiles and be the point of any failure. Your mason must make the final decision on the specification of the mix as they will ultimately be responsible for the success of the job (liaison with the Conservation Officer may be required if the building has statutory protection).

Where we advise that works are required to pointing/flaunching/roof detail, unless otherwise detailed, a non-hydraulic lime (e.g., CalBux 90) should be used as the binder in the mix together with the appropriate aggregate for the job and local area (and the addition of a pozzolan, if required). For small repair works, a pre-mix could be considered, however for larger jobs and rendering, the mix should be mixed 'hot' on-site. The use of lime-based materials requires a detailed understanding of the site, the weather and atmospheric conditions, the type of masonry/brickwork, locally available limes, locally available aggregates and their grading/void ratios and suitable preparation of the substrate and finished detail.

For very specialist works and works to statutorily protected buildings, analysis of the existing and original mortars should be carried out so that the appropriate specification can be determined.

Unless specifically detailed in the report, cement (and its variants) should not be used as the binder in the mix. Hydrated, sometimes referred to as 'builders' lime' is also not appropriate to use to make mortar/render for traditional buildings.

Cementitious mortars and renders can cause several problems with traditional buildings. They are very hard and brittle so often crack when traditionally constructed buildings move with the seasons. These hairline cracks then allow rainwater to penetrate the mortar joints/render and accelerate the effects of freeze-thaw weathering and create problems with penetrating dampness. This moisture can also cause decay/insect attack to any timber that is socketed into/bearing onto the walls e.g., battens, joists, beams, lintels and sills.

As well as being hard and brittle, cementitious mortars are impermeable/significantly less permeable than lime-based mortars. In practice, this means that any moisture that makes its way into the structure is unlikely to be able to escape through the external leaf and if/when it does, it is likely to have to escape via the stone/brickwork and not through the mortar joints. This will place additional moisture stress on the stone/brickwork and likely accelerate decay.

When undertaking pointing repairs/re-pointing, the existing mortar should be removed by hand with a plugging chisel and lump hammer or an Arbourtech Allsaw. Angle grinders, SDS drills, mortar rakes, Kango hammers etc. should not be used as they will likely damage the stone/brickwork leading to repairs being required before the re-pointing works begin. Existing pointing needs to be removed to a depth of at least 25 mm or twice the width of the joint, whichever is greater (ashlar and fine brick pointing will need to be approached on a case-by-case basis and may require grouting as opposed to pointing).

Brick and Stone Repairs

Brick and stone repairs should only be undertaken by specialist craftspeople using specialist materials. Using mortar to make surface repairs to stone and brickwork is not an acceptable method.

For localised repairs, a proprietary repair product should be used and can be tooled and pigmented to match the existing elevations. We have recently used Masons Mortar based in Glasgow which supplies a range of suitable products for most repair scenarios.

For larger repairs, stone/brick rotation or replacement stones and bricks may be needed. These should be like-for-like in terms of performance and aesthetics.

If the building has statutory protection, further investigation and a more detailed specification will be required for Listed Building Consent.

Paints

Traditional paints for timber would have been based on white lead or linseed oil. Both of these are long-lasting and permeable. More recently, plastic-based paints have become the norm. Plastic-based paints are impermeable and can trap moisture beneath the surface accelerating the decay of the substrate. We do not recommend that plastic-based paints are used anywhere, instead, we recommend you consider the following:

Render/external areas (not made from timber) – limewash (homemade or pre-mixed), clay-based paint or mineral-based paint.

Timber – linseed oil-based paint.

When researching/purchasing paint, we recommend that you purchase paint with the lowest SD (diffusion) value for the colour/type of paint you need. Limewash is the most permeable finish and has an SD value of 0.01.

2.0 Observations and Recommendations

Our observations are made as if stood at the front of the property with the right-hand side being the subject property's chimney stack.

We only see the property during the course of one day in one season, usually only in one weather condition. It, therefore, may be necessary for you to observe and monitor some items.

When we note that works are required, we will usually advise that these are required:

Straight away – works should be undertaken without delay to stop the defect from having an immediate detrimental effect on the property.

Within the next year.

The short to medium-term – end of the first year to year five.

Long-term – post year five.

Record and monitor – photograph/measure the defect and check it with the change in seasons to see if it gets any worse. If it does get worse, further action may need to be taken.

Limitations to our Inspection

The chimneys, roof and guttering have only been inspected from ground level with the use of a drone, we have been unable to physically get close to the roof coverings etc. We have detailed our findings below; however, this should not be considered a full building survey and where there are multiples of the same defect, we have included examples.

2.1 Chimneys and Flashings

The property has one chimney stack that straddles the ridge on the right-hand wall dividing wall.

The chimney stacks are the most exposed part of the property and these should be inspected annually and their condition recorded to ensure that any defects are tracked and repairs are arranged when required. A poorly maintained stack can allow rainwater penetration internally and debris to block the rainwater goods and drainage.

The stack had a T.V. ariel mounted on it. The fixings should be regularly inspected to ensure that they are satisfactory.

Pots

The property has one clay pot surmounting the rear flue and two gas cowls in the front and centre flues.

Flaunching

The flaunching is in generally poor condition and needs at least partial replacement.

Corbelling

The corbelling stones are in generally acceptable condition, bar one area that needs repair. The weathered mortar fillets are in poor condition and need to be replaced.

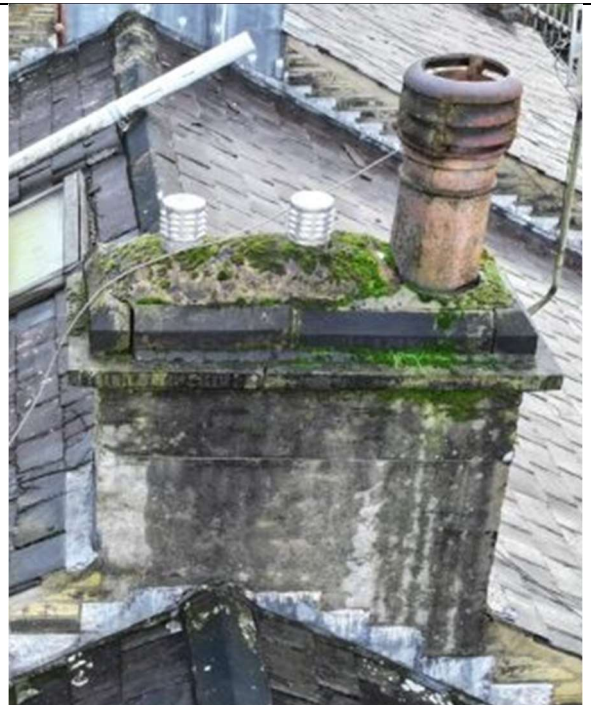
Stack






The stack looks to be in generally fair condition. The coating on the right-hand side is holding moisture and should be observed on a windy day to ensure it is also shedding this moisture.

There are areas where pointing is missing and areas of inappropriate pointing. The stack will likely need to be raked out and repointed in the next five years.

Flashings

The saddle flashings are missing on both sides of the stack and the front apron details are lacking, particularly at the rear.



<p>If the rear flue is redundant, a vented cap should be added to the pot.</p>	
<p>The clay pot is cracked top to bottom, this should be strapped or replaced in the next few months.</p>	
<p>All of the moss needs to be cleared off the flaunching and it should be inspected for further defects.</p> <p>The centre stone (orange arrow) is not set square to the stack and consideration should be given to re-setting this.</p>	
<p>Rear pot – there is very little flaunching around the base of the rear chimney pot, and there is a gap between the pot and flaunching.</p> <p>The defective flaunching should be removed and replaced in the next couple of months.</p>	
<p>The weathering fillet is missing from the corbelling (orange line) this should be replaced in the next couple of months.</p>	

Right-hand side – the front centre corbelling stone is not sat square and the pointing is missing from the joint. Rainwater will likely be entering the stack and flue via this joint.

The stone should be re-set and the joints repointed.



The damaged corbelling stone should be repaired next time high-level works are undertaken.



Parts of the stack have been repointed. Based on the colour of the mortar, this looks like a cementitious mix which is inappropriate for a stone stack. See our comments above on mortars.

Areas of stonework are decaying and these should be defrased.

Consideration should be given to raking out and repointing the stack in the short-medium term.



Saddle pieces are missing on both sides of the stack where it meets the ridge. These should be added next time high-level works are undertaken.



The restraint straps are missing on the front apron on the front of the property



The front apron on the back of the stack has been poorly detailed and should be replaced with a correctly detailed front apron and restraint straps in the next couple of months.



2.2 Roof Covering and Detail

The main roof covering is natural slate.

Where we have recommended repairs to the roof covering, this is to prevent rainwater ingress and damp. Delays in undertaking these repairs could begin to compromise the roof and wall structure.

Overhead photo of the roof covering, with the front of the property on the left-hand side of the photo.



Front Pitch

The areas of missing and damaged pointing around the ridge tiles should be raked out and the ridge repointed in the next couple of months.



The missing slate at the ridge/chimney abutment should be replaced next time high-level works are undertaken.

Note that a lead soaker is not an appropriate replacement for a slate.



The slates do not all sit flat to the pitch, particularly on the lower portion of the roof. This could be allowing wind-driven rain into the roofspace, particularly around the eaves. We recommend that this is investigated further when it is dry and the slates reaffixed so they sit flat against each other.



The verge detail is incorrect – the slates here run:
Half-slate
Slate
Half-slate
Slate etc.

They should run:
Slate
Slate and a half
Slate
Slate and a half, etc.

There is no way of economically correcting this.



Verge – there is an inadequate projection of the slates over the verge, they should project at least 50 mm to shed rainwater clear of the elevation.

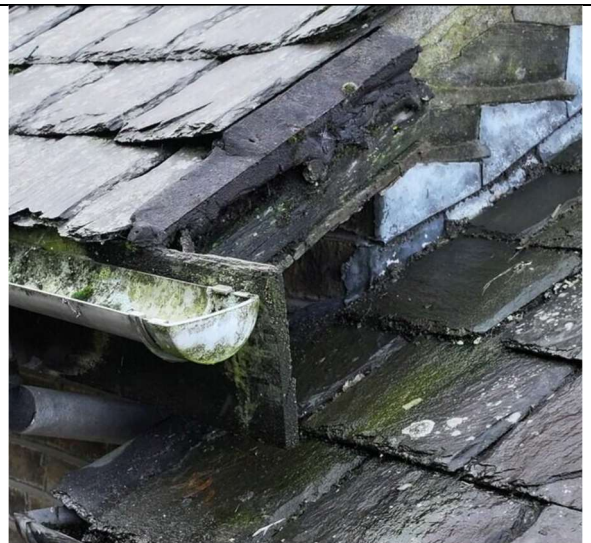
There are also several sections of pointing that are cracked and/or missing. Rainwater could be entering the wallhead and the roofspace here.

We recommend that the ridge be repointed in the next couple of months. See our comments above on mortars.



Where the verge meets the eaves, the detailing is poor.

This area of the roof should be redesigned when the weather is dry.



The slipping and slipped slates should be reaffixed as soon as possible as they may be allowing rainwater to penetrate the roof.



Soil vent pipe – there is a crack straight through the pipe. This should be made safe as soon as possible and then repaired/replaced.

It is unclear how this penetration through the covering has been weather-sealed. It should be inspected close-up to ensure it is weathertight.



Rear Pitch

The damaged ridge pointing should be removed and the ridge repointed. We recommend that this work is undertaken in the next couple of months.

The debris should be cleared off the pitch.



The missing and damaged slated under the ridge should be replaced in the next couple of months.



The slates do not all sit flat to the pitch on the lower portion of the roof. This could be allowing wind-driven rain into the roofspace, particularly around the eaves. We recommend that this is investigated further when it is dry and the slates reattached so they sit flat against each other.



The detailing around the verge/eaves is not particularly good.

With some thought, this could be improved to better discharge rainwater into the guttering...



... Rainwater is likely escaping off the verge here and saturating the wall head below. The section of guttering on its side is not an adequate solution to address this.



2.3 Guttering

Limitations to our Inspection

We do not perform or comment on rainwater goods design calculations or test installations. At the time of our inspection, the weather was dry and we were unable to observe the functionality of the rainwater goods. You should observe the fittings during heavy rainfall and repair any leaks as soon as possible. It is also possible that due to climate change, and more persistent heavy rain that the capacity of the guttering, fall pipes and drainage will need to be increased.

The rainwater goods and drainage are vitally important to the effective management of rainwater around the property. If repairs are not actioned promptly, faults could quickly lead to problems with penetrating dampness internally and further deterioration of the building fabric.

The property has uPVC guttering on timber facias. The paint on the facias is peeling and these need suitable preparation and redecoration in dry weather. Note our comments above on paints.

The debris in the guttering runs should be cleared in the next couple of months and should be kept on top of going forward.



Front elevation, right-hand side – the end section is only being supported on the outlet joint. A bracket needs to be affixed soon as the section is full of water and will likely damage the outlet.

