Inspection Report

TRADITIONAL BUILDINGS HEALTH CHECK

Property address	8 Drummond Place
Membership No	412 785
Date of inspection	22/02/2022
Date of report	22/02/2022
Report prepared by	T Simmons

Stirling City HERITAGE TRUST

HISTORIC ENVIRONMENT SCOTLAND | ÀRAINNEACHD EACHDRAIDHEIL ALBA

Contents

1.0 Introduction

The service

The Traditional Buildings Health Check (TBHC) is a membership service to support owners of traditional properties within the City of Stirling boundary. The service offers members a periodic affordable and comprehensive building fabric inspection.

The inspection is focused on the external building fabric with the objective of identifying defects and required repairs on the property. This includes the roof, chimneys, rainwater goods, walls, windows and doors, and loft space if this is accessible. During the inspection, when safe to do so, we may undertake routine maintenance tasks (e.g. clearing gutters) and small temporary holding works.

An informed and impartial building report is produced with a prioritised list of repair actions.

The TBHC is managed by Stirling City Heritage Trust and funded by Historic Environment Scotland. Launched in December 2004, the Stirling City Heritage Trust is an independent company limited by guarantee (SC277033) and a registered Scottish Charity (SC037888).

Limitations

This report has been prepared and written for the Traditional Buildings Health Check on behalf of Stirling City Heritage Trust (SCHT) in the context of the purposes stated above and should not be used in any differing context.

The inspection is restricted to elements which can be seen clearly and no attempt is made to open up or employ any other destructive techniques. The interior of the building is not inspected unless defects have been reported by the owner and/or the inspectors have identified possible concerns during their external inspection. The exception being that the internal roof space is inspected where safe access is available. SCHT is unable to confirm that such areas are free from defects.

The SCHT acknowledges that their duty of skill and care in relation to the report is owed to the property owners who commissioned this report. No duty of care extends to any third party that may make use of the report unless SCHT provides written confirmation. SCHT shall in no circumstances be held liable for any works undertaken by the client on any recommendation made in this report.

SCHT recommend that you do not submit this report to contractors as the basis of a pricing schedule.

1.3 Listed buildings & conservation areas

Traditional buildings have character; provide a sense of place and a sense of cultural identity. Your property may be listed and / or sit within a conservation area. This means there is additional protection at national and local level and additional regulation which you may need to consider.

Section 2.0 states if your building is listed and/or in a conservation area.

Listed buildings

Listed buildings are included on a list of buildings of special architectural or historic interest compiled by Historic Environment Scotland on behalf of the Scottish Government. The term 'building' is defined broadly in the legislation and can include, for example, walls, fountains, statues, sundials, bridges, bandstands and telephone boxes. There are 3 categories of listed buildings: A, B and C.

Listing means that any changes to your building need to be carefully considered. If you are planning to do any work (repair, alter or extend) that may affect the building's character, appearance and how it performs you must first seek advice from your local Planning Authority. Further information on listed buildings can be found on Historic Environment Scotland's website.

Conservation areas

Conservation areas are designated by the Planning Authority as being areas of special architectural or historical interest. Conservation areas are afforded statutory protection and have additional planning controls to ensure that the special character of the area is preserved and enhanced.

If your property lies in a conservation area any changes which may affect the building's appearance (including repairs that involve replacement materials or elements) may require planning consent. If you are looking to demolish a building, part of a building or other structure in a conservation area you will require Conservation Area Consent. Remember too that trees are protected in a conservation area and you must first notify the Planning Authority of any intended lopping, cutting or removal of a tree. Contact your local Planning Authority for more information and advice.

Conservation Area Appraisals explaining the background, significance and character of Stirling's conservation areas can be accessed on Stirling Council's website.

Protection of wildlife and habitats

Planning for repair and maintenance work should include assessment and survey if required to protect the natural diversity within the area and respect recognised protection measures for wildlife, flora and fauna. It is an offence under the Wildlife and Countryside Act 1981 (as amended) to recklessly disturb nesting birds. In addition, bats are protected under the Conservation (Natural Habitats &c) regulations 1994 (as amended) which makes it an offence to disturb bats and their roosts. Further information should be sought from Scottish Natural Heritage and other groups such as Bat Protection League and the Royal Society for the Protection of Birds.

2.0 Your property and its construction

Summary

Address	8 Drummond Place, Stirling, FK8 2JE
Property owners	Leigh Price
Building type	Semidetached sandstone townhouse.
Listing category	C
Conservation Area	Kings Park
Previous inspection date	n/a
Outline	8 Drummond Place is a semi detached sandstone town house over two stories (ground and first) situated within the kings park conservation area. The building is likely to have been constructed in the later half of the 19th century (OS 1898). The building is constructed of blonde sandstone in squared rubble units laid in rough courses. The front (north facing) façade includes a double height bay window and pilastered portico over door. Window and door surrounds are finished with raised ashlar margins. The pitched roof is covered in scots slate laid in diminishing courses with hip to gable. Two chimneys, one above shared roof with 8 flues and other over gable with 4 flues. Nine original timber sash and case windows to front façade in two over two or four over four configurations. Six replacement timber sash and case windows to rear in six over six configuration. The property contributes to the Kings park conservation as part of the Georgian and Victorian expansion of Stirling into the area kings park hunting enclosure. Properties along Drummond place are a fine example of the strict feuing conditions under which development of the site took place. 8 Drummond place plays an important role in supporting the uniform characteristics of the streetscape through its maintenance of original sash and case windows to front, decorative masonry features and scots slate roof.

3.0 How we carried out the inspection

Inspection conducted by

Traditional Buildings Inspector	David Lindsay AssocRICS	Stirling City Heritage Trust
Traditional Buildings Inspector	Thom Simmons	Stirling City Heritage Trust

Inspection method and access

Duration of inspection	Approx. 3hrs
Access equipment used	Drone,
Weather conditions	Dry – 3^{o}C – ENE 15mph

Digital photographs were taken throughout the inspection process and a selection are included in the Condition Schedule.

The complete photographic record with full size images at their original resolution will be issued digitally

Covered or inaccessible parts of the building which could not be physically inspected were

All roof areas, gutters and drainage, high level masonry including chimneys, windows above ground level

Remedial works carried out

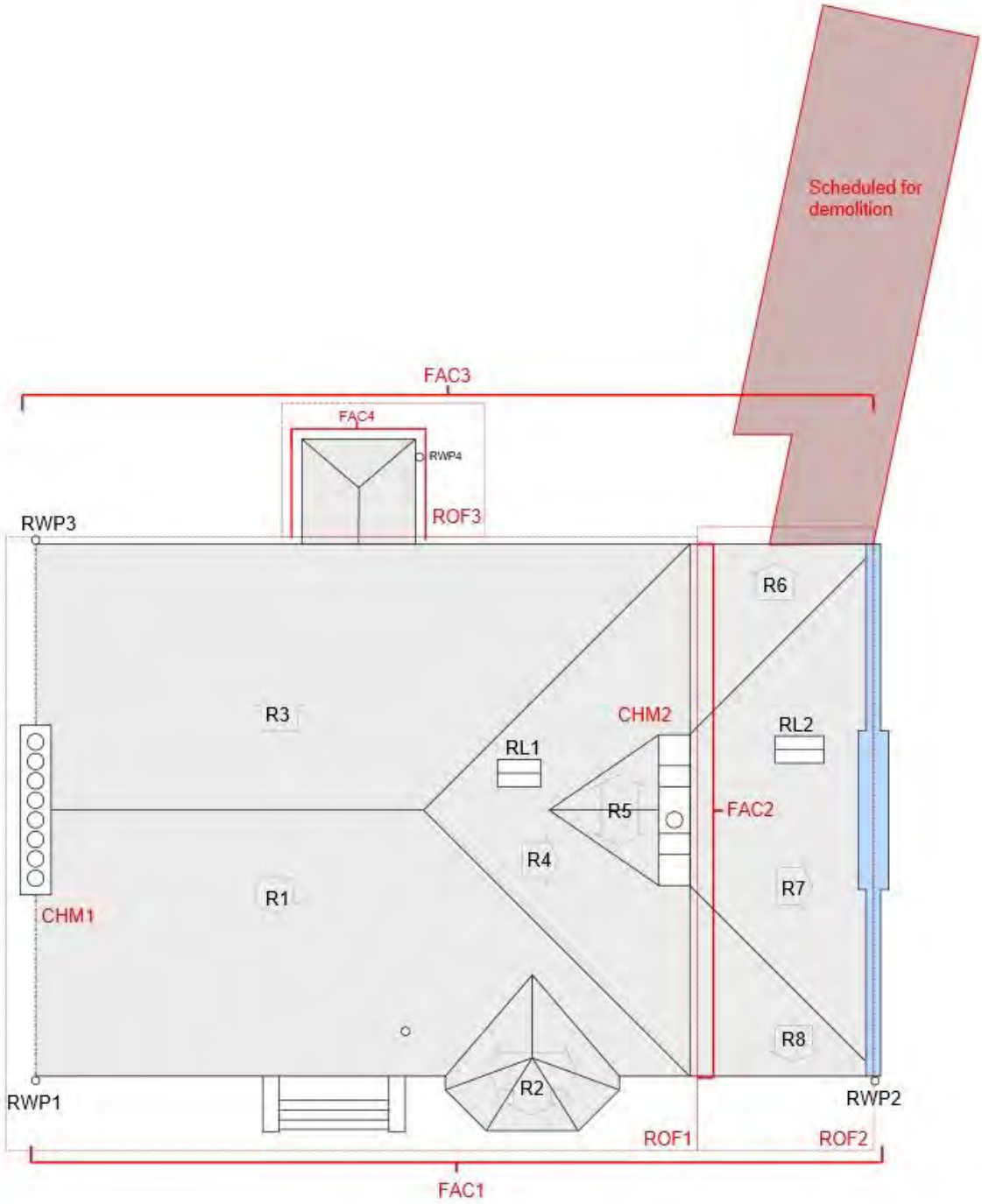
none

4.0 Understanding the condition schedule

Location including photograph or sketch of the overall area such as a roof plan or elevation			
			
Ref	**Element**	**Condition, defects present & recommended repair priority**	
1.1.10	The part of the building in focus	Repairs, replacement or recommended investigations should be carried out at the first available opportunity and in less than 12 months. Failure to attend to these defects may cause further deterioration or damage elsewhere or create a safety hazard.	1
		Repairs, replacement or recommended investigations are required and works can be phased to make best use of resources and any access required. If not attended to these defects may be elevated to a higher priority.	2
		The condition of the building element is consistent with age. No repair or replacement is currently needed. The element should be regularly inspected and maintained as necessary to reduce the possibility of failure.	3

Refer to Appendix C: Common Defects & Suggested Repairs for general advice on traditional repair requirements.

5.0 Roof plan



8 Drummond Place

not to scale

slate

Bitumin

Asbestos roofing Sheet

ROF1	Main roof
ROF2	Garage Roof
ROF3	Rear porch roof
CHM1	Eastern Chimney
CHM2	Western Chimney
FAC1	Front (Northern) Facade
FAC2	Side (Western) Facade
FAC3	Rear (South) Facade
FAC4	Rear porch facades (All)

6.0 The condition of your building

6.1 ROF1 Main roof

Ref	Element	Condition, defects present & recommended repair priority	
6.1.1	**ROF 1 Pitched Surface**	The pitched surfaces of the roof (ROF1 R1 – R5) are covered in Scot's slate laid in diminishing courses. **The condition of the Pitched Surfaces appears to be poor and these components are likely to require repair.** • Slates have cracked and sections of slate are loose or have fallen away. Cracked slates reduce cover and can make the roof vulnerable to water ingress. IMG: 3, 6, 7, 13, 17 • A number of slates upon the roof have fallen or slipped indicating that nail sickness may be an issue. Nail sickness or failure of the slate fixings can reduce cover and lead to water ingress. Falling slates also present a hazard to building users. IMG: 3, 6, 7, 13, 18 *Recommended Action* *Replace cracked slates with units to match existing type and style.* *A comprehensive overhaul of the roof is required including the complete removal, redressing and reaffixing of the slate. Supplement existing slate with units of a matching type.*	2

6.1.2	**ROF 1 Ridges**	The ridges of roof (ROF1) are protected with zinc flashings held down with galvanised fixing straps. **The condition of the Ridges varies and this component may require some maintenance or repair to avoid further deterioration.** • The galvanised fixing straps holding the zinc ridge have corroded. Corroded fixing straps will ultimately fail resulting in a loose ridge flashing. IMG: 4, 5 • Sections of ridge have been lifted and are distorted. There is a large gap between the flashing and the roof covering. If ridges are not fitted correctly they may provide insufficient cover and potentially allow water ingress. IMG: 4, 5 *Recommended Action* *Monitor fixing straps, if failure appears likely replace galvanised straps with new replacements ensuring that there is a strong connection between the fixing and the substrate.* *Replace distorted sections of ridge with aligned sections of a matching profile.*	2
6.1.3	**ROF 1 Flashings & Watergates**	The flashings and watergates between the roof and chimneys are in lead. **The condition of the Flashings & Watergates varies and these components may require some maintenance or repair to avoid further deterioration.** • The mastic or mortar within the raggle has cracked or failed. Cracked or missing mastic and pointing can leave joints vulnerable to water ingress which may lead to internal dampness and accelerated decay. IMG: 20, 23 *Recommended Action* *Rake out any cracked or failed mastic/pointing and replace with a Polysulphide mastic or lime based mortar for raggles more than 18 mm.*	2
6.1.4	**ROF 1 Valleys**	The valleys are formed of profiled zinc. **The condition of the Valleys varies and these components may require some maintenance or repair to avoid further deterioration.** • The zinc valley is detailed in a way that is likely to allow water ingress. Water ingress can cause internal decay. IMG: 15 • There is an accumulation of debris within the valleys. Debris impedes the flow of water and can result in overspill during high rainfall events. IMG: 10 *Recommended Action* *Alter the detailing of the zinc valley to protect against water ingress.* *Clear valleys of debris and undertake a regular programme of maintenance ensure they remain clear.*	2
6.1.5	**ROF 1 Roof Lights**	The roof light (RL1) is an original cast iron unit.	2

		The condition of the Roof Light varies and this component may require some maintenance or repair to avoid further deterioration. • The surface of the cast Iron has corroded. Corroded cast iron will ultimately fail leading to potential leakage. IMG: 11 • Sections of the glazing putty have cracked and fallen away from the glass. Missing sections of glazing putty may result in water ingress and could leave the glazing poorly supported within the frame which is potentially a serious hazard to building users. IMG: 11 • The glazing within the roof light is cracked. Cracked glazing panes make the roof light vulnerable to water ingress and may result in internal dampness and associated fabric decay. IMG: 11 *Recommended Action* *Remove rust from the cast iron rooflight and repaint to protect against future corrosion.* *Remove any loose glazing putty and replace using a traditional glazing putty based on whiting and boiled linseed oil.* *Remove cracked glazing within the roof light and replace with a piece of glass specified to match the dimensions and manufacturing process of the original. Use a traditional glazing putty based on whiting and boiled linseed oil to hold the glass within the frame.*	

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6.2 ROF2 Garage Roof

Ref	Element	Condition, defects present & recommended repair priority

6.2.1	**ROF 2 Pitched Surface**	The pitched surface is covered in Scot's slate laid in diminishing rows. **The condition of the Pitched Surfaces appears to be poor and these components are likely to require repair.** • Slates have cracked and sections of slate are loose or have fallen away. Cracked slates reduce cover and can make the roof vulnerable to water ingress. IMG: 36 • Slates have been displaced and do not lie flat upon the surface of the roof. Displaced slates reduce cover and can make the roof more vulnerable to water ingress. IMG: 36 • Slates have fallen from their positions upon the roof. Missing slates reduce cover and can make the roof vulnerable to water ingress. IMG: 36 *Recommended Action* *Replace cracked slates with units to match existing type and style.* *Reposition displaced slates and ensure fixings are secure. Replace fixings and/or slates if fixing or fixing hole is not fit for purpose.* *Replace missing slates with units to match existing type and style.*	2
6.2.2	**ROF 2 Ridges**	The ridges of the roof (ROF2) are protected with zinc flashings held down with galvanised fixing straps. **The condition of the Ridges varies and this component may require some maintenance or repair to avoid further deterioration.** • The galvanised fixing straps holding the zinc ridge have corroded. Corroded fixing straps will ultimately fail resulting in a loose ridge flashing. IMG: 36 *Recommended Action* *Monitor fixing straps, if failure appears likely replace galvanised straps with new replacements ensuring that there is a strong connection between the fixing and the substrate.*	2
6.2.3	**ROF 2 Flashings & Watergates**	The flashing between the pitched surfaces (R6 – 8) and wall (FAC2) is in lead. **The condition of the Flashings & Watergates appears to be poor and these components are likely to require repair.** • The mastic or mortar within the raggle has cracked or failed. Cracked or missing mastic and pointing can leave joints vulnerable to water ingress which may lead to internal dampness and accelerated decay. IMG: 36, 37 *Recommended Action* *Rake out any cracked or failed mastic/pointing and replace with a Polysulphide mastic or lime based mortar for raggles more than 18 mm.*	2
6.2.4	**ROF 2 Rainwater Drainage**	The roof (R7) drains to a box gutter lined with bitumen membrane/flashing tape. The roof (R6) and (R8) drain to half round cast-iron gutters discussed in sections 6.6 & 6.8.	2

		The condition of the Rainwater Drainage varies and this component may require some maintenance or repair to avoid further deterioration. • The Lead rainwater goods have been repaired with flashing tape. Flashing tape is a temporary repair medium and has a limited lifespan, failure of the repair could mean leakage and associated decay. IMG: 37, 39 • There is a build up of sludge and debris within the gutter. Sludge and debris restricts flow and can lead to overspill during high rainfall events. IMG: 37, 39 *Recommended Action* *Remove flashing tape and replace the damaged section of lead in a code and profile dressed to meet Lead Sheet Training Academy Spec.* *Clear the gutter of debris and undertake a regular programme of yearly maintenance to ensure they remain clear.*	
6.2.5	**ROF 2** **Roof Lights**	The roof light (RL2) is an original cast iron unit. **The condition of the Roof Light varies and this component may require some maintenance or repair to avoid further deterioration.** • The surface of the cast Iron has corroded. Corroded cast iron will ultimately fail leading to potential leakage. IMG: 36 • The roof light has been repaired with flashing tape. Flashing tape is a temporary repair medium and has a limited lifespan, failure of the repair could mean leakage and associated decay. IMG: 36 *Recommended Action* *Remove rust from the cast iron rooflight and repaint to protect against future corrosion.* *remove the flashing tape and make good the underlying condition of the roof light.*	2

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6.3 ROF3 Rear porch roof

Ref	Element	Condition, defects present & recommended repair priority	
6.3.1	**ROF 3 Pitched Surface**	The pitched surfaces (ROF3) are covered in Scot's slate. **The condition of the Pitched Surfaces appears to be good and these components only requires monitoring for future maintenance requirements.** • The slated covering upon the pitched roof is in good condition. No repair is required. IMG: 43, 44	3

		Recommended Action *Monitor the pitched roof for any future maintenance requirements.*	
6.3.2	**ROF 3 Ridges**	The ridges of roof (ROF3) are protected with zinc flashings held down with galvanised fixing straps. **The condition of the Ridges varies and these components may require some maintenance or repair to avoid further deterioration.** • The galvanised fixing straps holding the zinc ridge have corroded. Corroded fixing straps will ultimately fail resulting in a loose ridge flashing. IMG: 42 *Recommended Action* *Monitor fixing straps, if failure appears likely replace galvanised straps with new replacements ensuring that there is a strong connection between the fixing and the substrate.*	2
6.3.3	**ROF 3 Flashings & Watergates**	The flashing between the roof (ROF3) and wall (FAC3) is formed with a mortar fillet. **The condition of the Flashings & Watergates varies and these components may require some maintenance or repair to avoid further deterioration.** • The roof covering has moved or receded from the mortar fillet leaving a gap. A gap between the roof covering and the mortar fillet is vulnerable to water ingress which can lead to internal dampness and accelerated decay. IMG: 44 *Recommended Action* *Remove the fillet and replace using a lime mortar. A modified lime product may provide better performance above the level of the roof.*	2

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6.4 CHM1 Eastern Chimney

Ref	Element	Condition, defects present & recommended repair priority	
6.4.1	**CHM 1 Chimney Pots**	The Chimney (CHM1) has 8 flues all of which are topped with a chimney pots. 5 of the flues are protected with a metal cowl. **The condition of the Chimney Pots varies and these components may require some maintenance or repair to avoid further deterioration.** • Lack of cowl or cap upon chimney pot or flues. Uncapped pots and flues may result in bird infestation and/or water ingress which can cause internal decay of the stack. IMG: 25 • The mortar haunch around the base of the chimney pots has cracked. A cracked haunch can make the cope and flue vulnerable to water ingress and may result in a loose pot upon the cope. IMG: 24, 25 *Recommended Action* *Fit a cap or cowl to the top of the chimney pot.* *Remove the cracked mortar haunch and replace with a lime mortar, use of a modified lime may provide better performance above the level of the cope.*	2
6.4.2	**CHM 1 Chimney Stack**	The chimney stack (CHM1) is constructed of ashlar sandstone units with a moulded protruding cope.	2

		The condition of the Chimney Stack varies and this component may require some maintenance or repair to avoid further deterioration. • Vegetation is growing upon the masonry of the chimney stack. Vegetation retains moisture which can accelerate decay. IMG: 23 • Joints appear to have been repointed in an impermeable mortar. Impermeable pointing limits vapour transfer and can cause accelerated decay in adjacent masonry units. IMG: 23 • The mortar within the joint has cracked and there are gaps between the pointing. Cracked mortar can make joints vulnerable to water ingress potentially leading to internal dampness and accelerated decay. IMG: 20 *Recommended Action* *Remove vegetation and treat with an appropriate herbicide to avoid future regrowth.* *Monitor adjacent units for evidence of decay, if stone decay is occurring rake out impermeable mortar and repoint using a lime mortar.* *Rake out cracked pointing from between masonry units within chimney stack and repoint using a lime mortar.*	

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6.5 CHM2 Western Chimney

Ref	Element	Condition, defects present & recommended repair priority	
6.5.1	**CHM 2 Chimney Pots**	The Chimney (CHM2) has 4 flues all of which are topped with a chimney pot. 1 of the flues is protected with a metal cowl. **The condition of the Chimney Pots varies and these components may require some maintenance or repair to avoid further deterioration.** • Lack of cowl or cap upon chimney pot or flue. Uncapped pots and flues may result in bird infestation and/or water ingress which can cause internal decay of the stack. IMG: 26 • The mortar haunch around the base of the chimney pots has cracked. A cracked haunch can make the cope and flue vulnerable to water ingress and may result in a loose pot upon the cope. IMG: 26, 34 *Recommended Action* *Fit a cap or cowl to the top of the chimney pot.* *Remove the cracked mortar haunch and replace with a lime mortar, use of a modified lime may provide better performance above the level of the cope.*	2
6.5.2	**CHM 2 Chimney Stack**	The chimney stack (CHM2) is constructed of ashlar sandstone units with a moulded protruding cope.	2

		The condition of the Chimney Stack appears to be poor and this component is likely to require repair. • The mortar has failed and sections of the pointing are missing resulting in open joints. Open joints are vulnerable to water ingress which can lead to saturation of the masonry and accelerated decay. IMG: 26, 35 • An aerial, satellite or other fixture has been attached to the chimney stack. Fixtures mounted upon the stack are subject to wind loading, vibrations from which can cause displacement and cracking of masonry. IMG: 27 • Masonry units within the stack are misaligned and have shifted significantly from their original position indicating historic or progressive movement. Movement within a chimney stack can result from internal deterioration and may indicate structural instability. Progressive movement may result in deterioration that is a serious hazard to building users. IMG: 34, 133 • Joints appear to have been repointed in an impermeable mortar. Impermeable pointing limits vapour transfer and can cause accelerated decay in adjacent masonry units. IMG: 35 *Recommended Action* *Rake out and clean open joints. Repoint using a lime mortar that has been well packed into the joint.* *Remove the fixture from the stack and make good any damage from the fixings using a lime mortar.* *Seek advice on the appropriate method to stabilise the movement of the stack from a structural engineer with conservation experience.* *Monitor adjacent units for evidence of decay, if stone decay is occurring rake out impermeable mortar and repoint using a lime mortar.*	

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6.6 FAC1 Front Façade (North Facing)

Ref	Element	Condition, defects present & recommended repair priority	
6.6.1	**FAC 1 Doors**	The front door and garage doors appear to be the original timber units. **The condition of the Doors appears to be good and these components only requires monitoring for future maintenance requirements.** • The Doors are in good condition. No repair is required. IMG: 91, 126 *Recommended Action* *Monitor the doors for any future maintenance requirements.*	3
6.6.2	**FAC 1 Rainwater Drainage**	The roofs (R172) drain to an ogee profile cast iron gutter. The roof (R8) drains to a half round cast-iron gutter. all gutters drain to cast iron downpipes (RWP1 & RWP2) respectively. **The condition of the Rainwater Drainage varies and these components may require some maintenance or repair to avoid further deterioration.** • The interior of the gutter has corroded. Corroded cast iron will ultimately fail leading to leakage from the gutter. IMG: 73, 74 • There is a build-up of sludge and debris within the gutter. Sludge and debris restricts flow and can lead to overspill during high rainfall events. IMG: 73, 74, 69	2

		• Vegetation is growing from the gutter. Vegetation can block gutters and the root structure can cause displacement potentially leading to overspill and leakage. IMG: 68, 69 *Recommended Action* *Remove rust from the interior of the gutter and repaint to protect against future corrosion.* *Clear the gutter of debris and undertake a regular programme of yearly maintenance to ensure they remain clear.* *Remove vegetation from the gutter and undertake a regular programme of yearly maintenance to ensure they remain clear.*	
6.6.3	**FAC 1** **Wall**	The wall (FAC1) is constructed of squared blonde rubble sandstone with a tooled surface finish laid in rough courses. The façade includes a double height bay window and pilastered portico over door. Window and door surrounds are finished with raised ashlar margins. **The condition of the Wall varies and this component may require some maintenance or repair to avoid further deterioration.** • The mortar has failed and sections of the pointing are missing resulting in open joints. Open joints are vulnerable to water ingress which can lead to saturation of the masonry and accelerated decay. IMG: 75, 81, 83 • Vegetation is growing upon the masonry of the wall. Vegetation retains moisture which can accelerate decay. IMG: 83 • Joints appear to have been repointed in an impermeable mortar. Impermeable pointing limits vapour transfer and can cause accelerated decay in adjacent masonry units. IMG: 68 *Recommended Action* *Rake out and clean open joints. Repoint using a lime mortar that has been well packed into the joint.* *Remove vegetation from stone and treat with an appropriate herbicide to avoid future regrowth.* *Monitor units adjacent to impermeable pointing for evidence of decay, if stone decay is occurring rake out impermeable mortar and repoint using a lime mortar.*	2
6.6.4	**FAC 1** **Windows**	The windows appear to be the original timber sash and case units in two over two and four over four configurations. **The condition of the Windows varies and these components may require some maintenance or repair to avoid further deterioration.** • Paintwork upon the window frame has cracked. Cracked paint is vulnerable to water ingress and traps moisture beside timber creating an ideal environment for the outbreak of rot. IMG: 85 • The sash cords have become dethatched from the weights within the casement. The sash is not counterweighted by the sash weights and is unlikely to hold its position within the casement when raised. IMG: 111 *Recommended Action* *Remove areas of cracked paint to provide a sound substrate. Repaint to*	2

		protect against future water ingress using a linseed based paint system. Replace Sash cord with a rope that is rated to carry sufficient weight to counteract the sash unit.	
6.6.5	**FAC 1** **Grill**	The solum vent grills are cast iron. **The condition of the Grill varies and this component may require some maintenance or repair to avoid further deterioration.** • The cast iron vent grill has cracked. A cracked vent grill can allow animals to enter the building and may increase exposure to water ingress. IMG: 119 • The vent has been blocked and airflow is restricted. Blocked vents restrict airflow and reduce ventilation to internal spaces which can lead to a build up of damp air and associated building decay. IMG: 121 *Recommended Action* *Replace the cracked vent grill with a unit specified to match the existing. Remove blockage from the vent to improve airflow.*	2


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6.7 FAC2 Gable Façade (West Facing)

Ref	Element	Condition, defects present & recommended repair priority	
6.7.1	**FAC 2 Rainwater Drainage**	The roof (R4) drains to a ogee profile cast iron gutter to north of chimney (CHM2) and a half round cast iron gutter to south. Both gutters flow to downpipes that drain from facades FAC1 & FAC2 respectively. **The condition of the Rainwater Drainage varies and these components may require some maintenance or repair to avoid further deterioration.** • The interior of the gutter has corroded. Corroded cast iron will ultimately fail leading to leakage from the gutter. IMG: 72	2

		• There is a build up of sludge and debris within the gutter. Sludge and debris restricts flow and can lead to overspill during high rainfall events. IMG: 72 • Vegetation is growing from the gutter. Vegetation can block gutters and the root structure can cause displacement potentially leading to overspill and leakage. IMG: 72 *Recommended Action* *Remove rust from the interior of the gutter and repaint to protect against future corrosion.* *Clear the gutter of debris and undertake a regular programme of yearly maintenance to ensure they remain clear.* *Remove vegetation from the gutter and undertake a regular programme of yearly maintenance to ensure they remain clear.*	
6.7.2	**FAC 2 Wall**	The wall is constructed of squared rubble laid in rough courses. **The condition of the Wall varies and this component may require some maintenance or repair to avoid further deterioration.** • The surface of the stone is friable and has decayed. Friable stone is highly absorbent and can drive further cycles of accelerated decay. Decaying stone can leave ledges at joints which are vulnerable to water ingress. IMG: 66 • Joints appear to have been repointed in an impermeable mortar. Impermeable pointing limits vapour transfer and can cause accelerated decay in adjacent masonry units. IMG: 66 • The mortar within the joints has cracked and there are gaps between the pointing. Cracked mortar can make joints vulnerable to water ingress potentially leading to internal dampness and accelerated decay. IMG: 66 • An aerial, satellite or other fixture has been attached to the wall. Fixtures mounted upon the wall are subject to wind loading, vibrations from which can cause displacement and cracking of masonry. IMG: 63 *Recommended Action* *Monitor friable stone rate of decay and if/when masonry unit is compromised making building vulnerable to water ingress undertake an indent repair or full replacement of the unit. Ensure the replacement is well bedded in a lime mortar and that all cavities are well filled, use of a lime grout may be required.* *Monitor units adjacent to impermeable pointing for evidence of decay, if stone decay is occurring rake out impermeable mortar and repoint using a lime mortar.* *Rake out cracked pointing from between masonry units in wall and repoint using a lime mortar.* *Remove the fixture from the wall and make good any damage from the fixings using a lime mortar.*	2

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6.8 FAC3 Rear Façade (South Facing)

Ref	Element	Condition, defects present & recommended repair priority	
6.8.1	**FAC 3 Doors**	The door is a replacement timber unit with glazed panels. **The condition of the Door appears to be poor and this component is likely to require repair.** • The timber is rotten. Rotten timber can undermine the structural integrity of the door potentially resulting in failure of the unit. Rotten timber also retains moisture which can perpetuate and accelerate further cycles of decay. IMG: 52, 53	2

		Recommended Action *Remove areas of rotten timber and piece in sections in a matching species and profile. Use a lightly foaming pu glue and ideally use mechanical fixings from the internal side or cover well with a water tight filler.*	
6.8.2	**FAC 3 Rainwater Drainage**	The roof (R3) drains to a half round cast-iron gutter. The gutter flows to a cast iron downpipe (RWP3). **The condition of the Rainwater Drainage varies and these components may require some maintenance or repair to avoid further deterioration.** • The interior of the gutter has corroded. Corroded cast iron will ultimately fail leading to leakage from the gutter. IMG: 46 *Recommended Action* *Remove rust from the interior of the gutter and repaint to protect against future corrosion.*	2
6.8.3	**FAC 3 Wall**	The wall (FAC3) is constructed of squared blonde rubble sandstone with a tooled surface finish laid in rough courses. Window and door surrounds are finished with raised ashlar margins. **The condition of the Wall varies and this component may require some maintenance or repair to avoid further deterioration.** • The mortar within the joints has cracked and there are gaps between the pointing. Cracked mortar can make joints vulnerable to water ingress potentially leading to internal dampness and accelerated decay. IMG: 56, 61 • Ferrous metal within the wall has oxidised and the expansion has caused damage to the stone. Ferrous metal can expand significantly when oxidised causing cracking and displacement of stone. Cracked and displaced stone may be vulnerable to water ingress which can exacerbate oxidisation and lead to internal dampness. IMG: 105 *Recommended Action* *Rake out cracked pointing from between masonry units in wall and repoint using a lime mortar.* *Remove ferrous metal from wall and if required replace with stainless steel fixing. Make good any damage caused using a lime mortar and petrographically matched stone.*	2
6.8.4	**FAC 3 Windows**	The windows are replacement timber sash and case units with double glazed units containing false astragals between the glazing. **The condition of the Windows appears to be poor and these components are likely to require replacement. The component has limited significance and an appropriate replacement may represent a material enhancement of the property.** • The timber is rotten. Rotten timber can undermine the structural integrity of the window potentially resulting in failure of the unit. Rotten timber also retains moisture which can perpetuate and accelerate further cycles of decay. IMG: 100	2

		• Areas of paint have failed and are missing from the timber Exposed timber is vulnerable to saturation which can lead to the outbreak of rot. IMG: 48, 49, 50 • The burnt sand mastic between the window and masonry check has cracked. Cracked burnt sand mastic may be vulnerable to water ingress which may cause rot within the casement and/or internal dampness. IMG: 51 *Recommended Action* *Remove areas of rotten timber and piece in sections in a matching species and profile. Use a lightly foaming up glue and ideally use mechanical fixings from the internal side or cover well with a water tight filler.* *Rub down area of exposed timber to provide a sound substrate. Repaint to protect against future water ingress using a linseed-based paint system.* *Rake out the failed areas of sand mastic and clean the joint. Replace burnt sand mastic with a two-part site mixed traditional sand mastic comprising boiled linseed oil and burnt sand, avoid the use of resin hardeners that reduce vapour permeability of the joint.*	
6.8.5	**FAC 3** **Grill**	The grill to the solum is cast iron. **The condition of the Grill varies and this component may require some maintenance or repair to avoid further deterioration.** • There is corrosion on the surface of the vent. Corroded cast iron components will ultimately fail which can expose vents to infestation and water ingress. IMG: 101 *Recommended Action* *Remove rust from the vent and repaint to protect against future corrosion.*	2

 46	 48	 49
 50	 51	 52

 53	 56	 61
 100	 101	 105

6.9 FAC4 Rear Porch Facades (All)

Ref	Element	Condition, defects present & recommended repair priority

6.9.1	**FAC 4 Doors**	The door appears to be a replacement timber unit with an upper glazed panel. **The condition of the Doors is poor and this component requires repair.** • The timber is rotten. Rotten timber can undermine the structural integrity of the door potentially resulting in failure of the unit. Rotten timber also retains moisture which can perpetuate and accelerate further cycles of decay. IMG: 62 *Recommended Action* *Remove areas of rotten timber and piece in sections in a matching species and profile. Use a lightly foaming pu glue and ideally use mechanical fixings from the internal side or cover well with a water tight filler.*	2
6.9.2	**FAC 4 Rainwater Drainage**	The roof (ROF3) drains to a half round cast iron gutter. The gutter drains to a cast iron downpipe (RWP4). **The condition of the Rainwater Drainage varies and these components may require some maintenance or repair to avoid further deterioration.** • The interior of the gutter has corroded. Corroded cast iron will ultimately fail leading to leakage from the gutter. IMG: 43, 44 • There is a build-up of sludge and debris within the gutter. Sludge and debris restricts flow and can lead to overspill during high rainfall events. IMG: 43, 44 • There is corrosion at the joints between sections of gutter. Corrosion at the joints often indicates a failure of the mastic sealant between sections of the gutter. IMG: 59 *Recommended Action* *Remove rust from the interior of the gutter and repaint to protect against future corrosion.* *Clear the gutter of debris and undertake a regular programme of yearly maintenance to ensure they remain clear.* *Dismantle section of gutter and remove rust, repaint to protect against future corrosion and reassemble using either a low modulus silicone mastic or traditional putty sealant to seal the union between the gutter sections.*	2
6.9.3	**FAC 4 Wall**	The wall is covered in a cement render/harl. **The condition of the Wall appears to be good and this component only requires monitoring for future maintenance requirements.** • A Ferrous metal fixture is imbedded within the render/harl and has potential to cause damage to the stone. Ferrous metal can expand significantly when oxidised causing cracking and displacement of render/harl. Cracked and displaced render may be vulnerable to water ingress which can exacerbate oxidisation and lead to internal dampness. IMG: 59 *Recommended Action* *Monitor ferrous metal and remove from wall if oxidisation occurs. Replace with a stainless-steel fixing and make good any damage caused to the render/harl.*	3

 43	 44	 59
 62		

7.0 Defects you should attend to first

A summary list of issues within your report

No items have been highlighted as category one. The following is a list of issues that should be considered as a higher priority within the category two items.

Ref	Element	Suggested action
6.1.1	**ROF 1 Pitched Surface**	**The condition of the Pitched Surfaces appears to be poor and these components are likely to require repair.** *Recommended Action* *Replace cracked slates with units to match existing type and style.* *A comprehensive overhaul of the roof is required including the complete removal, redressing and reaffixing of the slate. Supplement existing slate with units of a matching type.*
6.5.2	**CHM 2 Chimney Stack**	**The condition of the Chimney Stack appears to be poor and this component is likely to require repair.** *Recommended Action* *Rake out and clean open joints. Repoint using a lime mortar that has been well packed into the joint.* *Remove the fixture from the stack and make good any damage from the fixings using a lime mortar.* *Seek advice on the appropriate method to stabilise the movement of the stack from a structural engineer with conservation experience.* *Monitor adjacent units for evidence of decay, if stone decay is occurring rake out impermeable mortar and repoint using a lime mortar.*

8.0 What to do next

TBHC has summarised the works which we recommend be addressed in the next 12 months in Section 6.0. Appendix C: Common Defects & Suggested Repairs provides general advice on traditional repair requirements.

The first step is to decide what works you wish to do. As part of your TBHC membership we offer a free **post-inspection meeting** to discuss your building and what to do next. Please contact us if you would like to arrange this.

In all situations it is advised that a schedule (or list) of works is prepared. Dependant on the type of work, you may wish to prepare a list yourself and then approach contractors directly. For larger, more complex or multiple repairs, it is worth considering engaging an Architect or Chartered Surveyor who can write the schedule of work and specification for you, then obtain quotations and inspect the works on site.

Anyone working on traditional buildings should have relevant experience. Knowledge of traditional methods and materials is invaluable in ensuring that repairs have a long life – and that so too does the fabric of your property.

If you live in a multiple occupancy building with shared repair obligations then the Scottish Government provides advice about management and maintenance of common property such as the guide Common Repair, Common Sense:
http://www.gov.scot/Topics/Justice/law/17975/CommonRepairCommonSense

Under One Roof website provides impartial advice on repairs, maintenance and legal matters for flat owners in Scotland:
http://www.underoneroof.scot/

8.1 Contractors and what to look for

TBHC do not hold a list of recommended contractors, and generally lists are not kept by public bodies. Establishing and maintaining a list is difficult and involves setting criteria and monitoring the quality of work. New companies appear and good employees move between companies, making it difficult to guarantee a list is current, valid and fair.

TBHC understand that choosing a contractor will take time and effort.

Appointed contractors should be able to provide evidence of relevant qualifications and experience of working on traditional buildings using appropriate materials and methods.

Firstly, try to understand your building and the work required. This report and discussion with your TBHC Inspector will assist you in that. Historic Environment Scotland produces a series of Inform Guides that contain easily understood information on many aspects of traditional buildings and materials. Several are available from TBHC or all can be accessed for free online:
https://www.engineshed.org/publications/ [select refine search: Inform Guides]

Familiarity with these guides should provide enough information to be able to ask a contractor the right questions. Good contractors will be able to provide the right answers.

Secondly, find out about the contractor's relevant experience. Ask to see previously completed work and references from clients. You could contact references directly or see the work first hand. Check with the contractor that the same workforce will be used on your project.

Most bona fide contractors have undertaken further education training or an equivalent apprenticeship. Certainly today, younger practitioners will complete a SVQ (Scottish Vocational Qualification) or HNC (Higher National Certificate).

In addition, many contractors will be a member of a trade association, federation or similar body. This can provide peace of mind. To gain and maintain membership the contractor may have to satisfy and maintain certain criteria set by the organisation such as evidence of competency and qualifications. Be aware that some logos mean only that the contractor has paid a membership fee. However, some trade bodies do offer consumers assistance. If in doubt contact the trade organisation and ask.

8.2 Getting a price for the work

Obtaining an accurate price for the work will depend on the detail of the list of works you provide to the contractor. Remember, there are differences between an estimate and a quote. An estimate is an approximation of how much the work is expected to cost, it may be different to the amount on the final bill. A quote should provide detailed information on what work will be completed and a breakdown of the costs involved. Quotes may include estimated costs for areas of works that are unknown, but these parts should be clearly specified.

You may need to follow a more formal tender process for larger projects, or get three comparable quotes to apply for funding for example. If you need, or wish to obtain more than one quote, comparisons between different contractors' quotes can only be fair if they are quoting for the same work, and that work is clearly defined.

Be careful, the lowest initial price may end up being far more costly where not all the work is described or quantified.

Appendix B provides examples of a request for a quote, a badly written and well written quote to assist you in this process.

8.3 Guarantees for the work

Contractors registered with trade associations or similar bodies may also benefit from other services such as mediation and insurance backed guarantees.

If you are unhappy with the quality of work carried out on your property you should in the first instance ask the contractor to attend to the issue. If you are unsatisfied with the contractor's response or their work still fails to meet your expectations you may be able to approach the trade association for advice and assistance in resolving your complaint.

Many contractors claim to guarantee their work but unless underwritten by an insurance provider such guarantees are only useful as long as the contractor remains in business. An insurance backed guarantee (IBG) means the work will be covered against defects for the agreed term even if the contractor is unable (or unwilling) to attend.

Examples of some relevant trade associations offering IBG guarantees include:

- National Federation of Roofing Contractors (NFRC) https://www.nfrc.co.uk/
- Confederation of Roofing Contractors (CORC) http://corc.co.uk/
- Lead Contractors Association (LCA) https://leadcontractors.co.uk/

You may need to ask the contractor to include the IBG in the contract as they are often optional and subject to payment of a policy premium. Some are also dependent on the finished work being independently vetted

by an inspector. You should always insist on a copy of the supporting policy documents as the IBG is usually transferable. For example if you sell your property.

Note that insurance backed guarantees and warranties may also be available to contractors who are not registered with a trade association and it is always worthwhile asking about this.

8.4 Further advice

Further information on traditional buildings can be provided by the TBHC team, your local Planning Authority and Historic Environment Scotland in particular their National Conservation Centre in Stirling –
The Engine Shed https://www.engineshed.org/

9.0 Working safely and what you need to know

Whatever the size of your project, the decisions you make have an impact on the health, safety and welfare of workers and others affected by the work. Virtually everyone involved in a construction project has legal duties under Construction (Design and Management) Regulations 2015 (CDM 2015). CDM places the responsibility for managing health & safety of a construction project on three main duty holders –

- The Client
- The Principal Designer
- The Principal Contractor

CDM 2015 recognises two types of client: **domestic clients** and **commercial clients**.

The following information issued by the Health & Safety Executive will help you understand your responsibilities.

9.1 Who is a domestic client?

Domestic clients have construction work carried out for them but not in connection with any business – usually work done on their own home or the home of a family member.

CDM 2015 does not require domestic clients to carry out client duties as these normally pass to other duty holders.

Main duties – What you need to do

In scope of CDM 2015, the client duties are normally transferred to:

- the contractor for single contractor projects
- the principal contractor for projects with more than one contractor

However, the domestic client can instead choose to have a written agreement with the principal designer to carry out the client duties.

[Health & Safety Executive: http://www.hse.gov.uk/construction/cdm/2015/summary.htm]

Note that CDM 2015 applies if the work is carried out by someone else on the domestic client's behalf. If the householder carries out the work themselves, it is classed as DIY and CDM 2015 does not apply.

Local authorities, housing associations, charities, landlords and other businesses may own domestic properties but they are not a domestic client for the purposes of CDM 2015. See section 8.2.

Guidance on what a domestic client needs to do to carry out their duties under CDM 2015 is available on the following websites:

- Health & Safety Executive: http://www.hse.gov.uk/construction/cdm/2015/domestic-clients.htm
- Construction Industry Training Board: http://www.citb.co.uk/documents/cdm%20regs/2015/cdm-2015-clients-interactive.pdf (Section 6 and Annex D)

The flowchart in Appendix A shows the transfer of client duties from a domestic client to other duty holders.

9.2 Who is a commercial client?

Commercial clients have construction work carried out as part of their business. This could be an individual, partnership or company and includes property developers and companies managing domestic properties.

Note that commercial clients include local authorities, housing associations or other landlords who own domestic properties.

Main duties – What you need to do

Make suitable arrangements for managing a project, including making sure:

- other duty holders are appointed as appropriate
- sufficient time and resources are allocated

Make sure:

- relevant information is prepared and provided to other duty holders
- the principal designer and principal contractor carry out their duties
- welfare facilities are provided

[Health & Safety Executive: http://www.hse.gov.uk/construction/cdm/2015/summary.htm]

Guidance on what a commercial client needs to do to under CDM 2015 is available on the following website:

- Health & Safety Executive: http://www.hse.gov.uk/construction/cdm/2015/commercial-clients.htm

9.3 The construction phase plan

Under the Construction (Design and Management) Regulations 2015 (CDM 2015) a construction phase plan is required for every construction project. Small scale routine works are not exempted. For example:

> 'Construction work' includes (but is not limited to) –
>
> *(a) the construction, alteration, conversion, fitting out, commissioning, renovation, repair, upkeep, redecoration or other maintenance (including cleaning which involves the use of water or an abrasive at high pressure, or the use of corrosive or toxic substances), de-commissioning, demolition or dismantling of a structure;*
> *The Construction (Design and Management) Regulations 2015*
> *(http://www.legislation.gov.uk/uksi/2015/51/regulation/2/made)*

The construction phase plan should be prepared by the Contractor, or Principle Contractor if more than one contractor is working on the project, and does not need to be complicated.

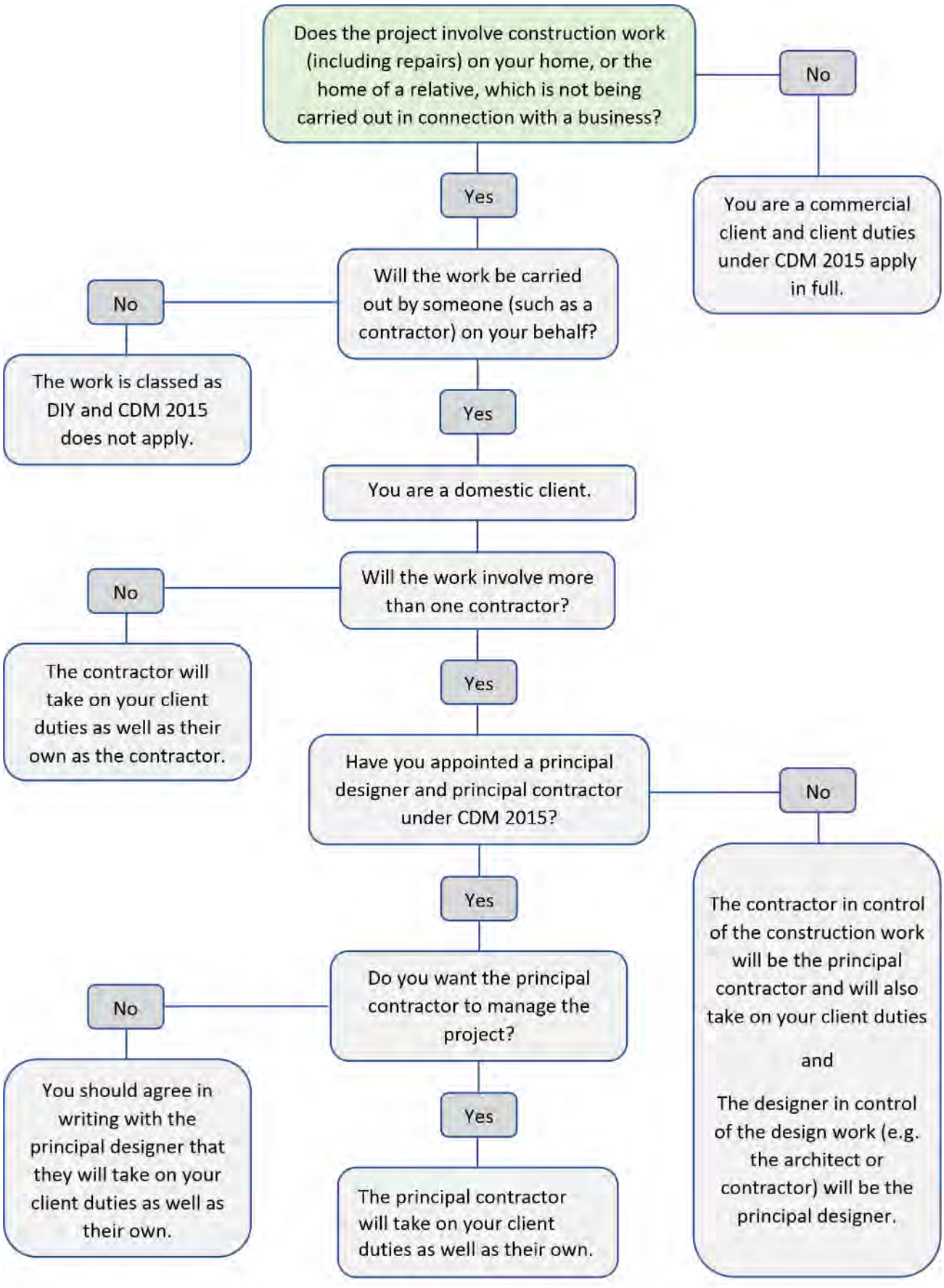
The plan should be:

- proportionate to the size and nature of the work, and the risks involved
- workable and realistic
- sufficiently developed to allow work to start on site
- regularly reviewed and added to as new trades start

As the client you may want to ask if the construction phase plan has been produced.

The Health & safety Executive has produced guidance and a useful construction phase plan template for contractors undertaking small scale projects - http://www.hse.gov.uk/pubns/cis80.pdf

Appendix A: Domestic clients and CDM



Based on CITB: CDM Industry guidance for Clients 2015

Appendix B: Communicating with contractors

Example of how to request a quote

Mr & Mrs Homeowner
10 Main Street
Yourtown
YT98 7CD

Doright Roofing
1 High Street
Clearview
CL10 3AB

10 May 2017

A quote is a fixed price offer. An estimate is an approximate price but isn't binding. An estimate may be submitted if the extent of work cannot be determined until on site.

Dear Sirs

I would be grateful to receive your quote for repairs to the north facing roof at my property. I have listed the required works in a table below.

Ask for details and a specification of materials to be used as this may be important if your building is listed or in a conservation area.

Please price each item individually and allow for submitting a specification of all materials allowed for in your price.

It may be useful to see examples of similar works the company has undertaken. Ask about a guarantee. Some companies can offer insurance backed guarantees (IBGs)

Please also provide examples of previous works undertaken by your company and details of your guarantee for works which would be carried out on my property.

Appropriate insurance, a Health & Safety policy, risk assessments and a Construction Phase Plan are all legal requirements.

If your quote is successful I will ask to see copies of your insurance, health & safety policy, risk assessments and construction phase plan.

I look forward to hearing from you.

Yours faithfully
A. Homeowner

Decide what repairs you want carried out and where possible list each item seperately.

Request seperate costs for each item with a sum total. If variations or extra work are required after work starts the revised costs will be easier to understand.

Try to break the work down into logical items such as building elements, elevations, roofs or areas.

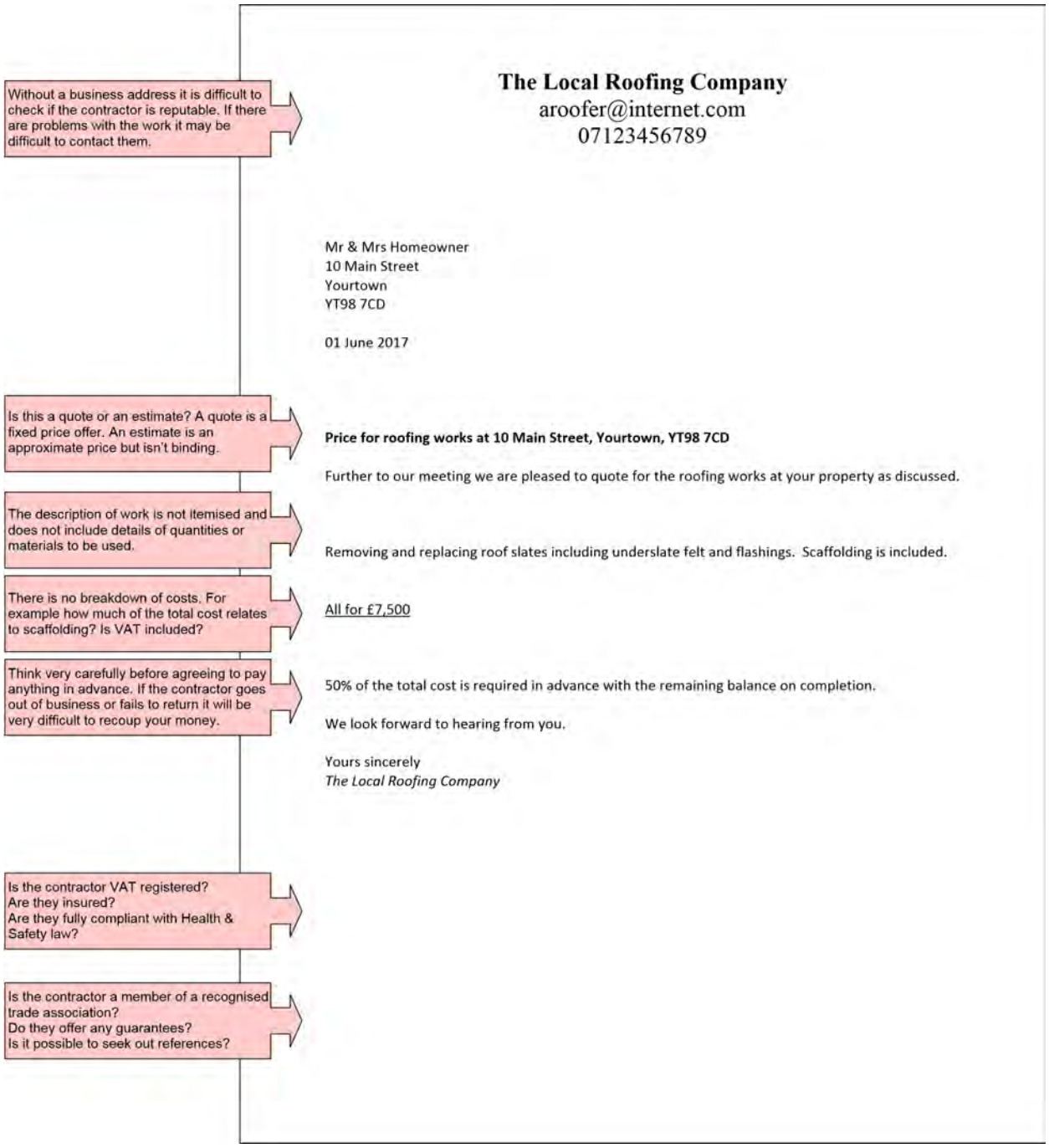
Always list scaffolding seperately so you know what the actual repair works cost.

Be aware that the sum total may depend on all the described works being carried out. You may not be able to 'cherry pick'.

List of works required

Item	Description of work	Cost (£)
1	Erect scaffolding to safely access the roof	£
2	Remove defective slates and re-slate the roof	£
3	Remove defective lead flashings and replace	£
4	Allow provisional sum or rates for unforseen repairs	£
	SUM TOTAL	£

Example of a poorly written quote



Example of a well written quote

A business address and contact details are important for effective communication. A website is not vital but may provide additional background information.

DORIGHT ROOFING
1 High Street, Clearview, CL10 3AB
Telephone: 07894561230 Email: contact@doright.com
Website: www.doright.com

Mr & Mrs Homeowner
10 Main Street
Yourtown
YT98 7CD

01 June 2017

A quote is a fixed price offer. An estimate is an approximate price but isn't binding. The period this quote is open for acceptance is clearly stated.

Quote for roofing works at 10 Main Street, Yourtown, YT98 7CD
Valid for 3 months from the date above

Further to our meeting we are pleased to quote for the roofing works at your property as discussed. We have allowed for carrying out repairs to north facing roof pitch.

The description of work is itemised with a breakdown of costs. If variations or extra work are discussed the revised costs are easier to understand.

VAT is clearly defined. Costs are often quoted excluding VAT. Invoices must include total VAT and the rate of VAT charged per item.

Item	Description of work	Cost ex VAT
1)	Erect access scaffolding to north elevation. Boarded top lift only. Top lift fitted with debris netting. Dismantle on agreed completion of works.	2,600.00
2)	Remove existing defective zinc ridges and lead valleys and flashings.	400.00
3)	Strip existing slates. Approximate area 50 sq/m.	1000.00
4)	Supply and fit new breathable underslating membrane.	300.00
5)	Supply and fit new slates to match the existing Scots slate.	2700.00
6)	Supply and fit new zinc ridges and lead valleys and flashings.	500.00
7)	Tidy site and remove all waste material and debris to registered waste carrier.	200.00
	Total excluding VAT (standard rate 20%)	**£ 7,700.00**

Materials are specified and appropriate relevant codes of practice are stated. Quantities provide further clarification of what is being priced.

All new lead work to comply with the Code of Practice for lead sheet roofing and cladding (BS6915) as illustrated and detailed in the Lead Sheet Manual issued by the Lead Sheet Training Academy. Replacement slates to be reclaimed Scots slate.

Appropriate insurance, a Health & Safety policy, risk assessments and a Construction Phase Plan are all legal requirements.

Copies of our public liability insurance, health & safety policy, risk assessments and construction phase plan are available on request. Examples of previous works carried out by our company are enclosed.

An Insurance Backed Guarantee (IBG) means the work will be covered against defects for the agreed term even if the contractor is unable (or unwilling) to attend.

Completed work is protected by an insurance backed guarantee (IBG) arranged by the Roofing Federation and our quote includes the additional cost of this policy.

We look forward to hearing from you.

Yours sincerely
Doright Roofing

VAT numbers can be checked for legitimacy. Trade associations may provide protection such as guarantees. Social media may provide customer references.

VAT Registration No.
012 3456 78

Member of the
Roofing Federation

Appendix C: Common defects and suggested repairs

Repairs should be carried out in accordance with Historic Environment Scotland - Advisory standards of conservation and repair for the historic building environment in Scotland

Defect	Suggested repairs
VEGETATION	
Moss (sometimes resulting in loose moss balls blocking gutters)	Remove moss using stiff bristle brushes and clear gutters. Avoid high-pressure water washing.
Lichens	Usually not damaging.
Green algae (level surfaces may become slippery)	Usually not damaging but may indicate problems elsewhere. Removal with stiff bristle brush or wooden scraper may be appropriate (e.g. where slippery surfaces present a hazard).
Plants	Remove plants including the entire root structure. If it is not practical to remove the root structure then treat with appropriate poison to prevent regrowth.
Ivy and other climbing plants	Preferably remove completely. Ivy may need to be poisoned and allowed to die back before removal to prevent regrowth and this can take up to 2 years. If ivy and other climbing plants are to be retained consider encouraging it to grow on a removable or hinged trellis to allow future inspection and maintenance of the masonry.
ROOFS	
Cracked, broken, dislodged and missing slates	Repair or replace to match the original. *As a general rule, if more than 20%-25% of the slates are cracked, broken, dislodged or missing, it is likely to be more practicable to strip and re-roof the building than replace only the affected slates. [Historic Environment Scotland – Inform: Repairing Scottish Roofs, 01/09/06]*
Corroded or perforated lead roof covering	Repair or replace to match the original. Avoid leaving temporary flashing tape repairs in place for longer than 12 months. *Ensure lead work complies with the Code of Practice for lead sheet roofing and cladding (BS6915) as illustrated and detailed in the Lead Sheet Manual issued by the Lead Sheet Training Academy.*
Worn, lifting, split or perforated reinforced bitumen membrane (e.g. mineral felt)	Repair or replace to match the original. In general, patch repairs are short term and worthwhile only if they are cheaper over several years than the cost of a new roof covering. *Ensure new work complies with Building Standards (Scotland) Regulations.*
Decay of timber sarking or tile battens	Replace decayed timber with pressure-preserved timber.
Broken, displaced or missing ridges	Repair or replace to match the original. Where the design is ornate the sections may have to be specially made. Stone, clay or concrete ridges should be re-bedded in mortar. Metal ridges should be nailed to ridge poles or sarking with nails appropriate for the type of metal to avoid bimetallic corrosion.
Corroded or perforated lead or zinc flashings and valleys	Repair or replace to match the original. Avoid leaving temporary flashing tape repairs in place for longer than 12 months. *Ensure lead work complies with the Code of Practice for lead sheet roofing and cladding (BS6915) as illustrated and detailed in the Lead Sheet Manual issued by the Lead Sheet Training Academy.*
Cracked and failing mortar fillets (skews) at the abutments	Remove defective mortar fillet and replace with strong hydraulic lime mortar or an appropriate hydraulic lime based mortar. Applying new mortar over the old defective mortar is not recommended.

Defect	Suggested repairs
Overflowing outlets to valley and parapet gutters	Remove blockages and clean out gutters and outlets. Where inadequate capacity of an outlet is the problem, the outlet should be redesigned and rebuilt to improve flow.
Traditional cast iron roof light frames rusting and debris in drainage channels	Remove leaves and other debris to ensure water is channelled correctly. Remove rust using appropriate tools such as wire brushes and finish with an exterior paint. *It may be necessary to temporarily lift slates to access the frame.*
Traditional cast iron roof lights and timber cupolas leaking at glazing	Replace cracked and loose glazing putty. For cupolas, repair or replace timber components affected by decay using traditional materials and techniques before replacing putty. Finish timber components with an exterior paint. *Avoid leaving temporary flashing tape repairs in place for longer than 12 months.*
GUTTERS AND DOWNPIPES	
Leaking at joints or through cracks and perforations	Check for blockages. Leaking joints may simply need re-caulking. Replace cracked and perforated gutters and downpipes to match the original (usually cast iron). Ensure cast iron components are prepared, primed and painted. Gutters should be painted internally as well as externally.
Inadequate flow to the gutter outlets due to sagging or inadequate falls	Re-set gutters to ensure adequate fall. Replace defective roof straps or brackets to match the original.
Build-up of sludge, debris and vegetation causing blockages	Remove sludge, debris and vegetation that may interfere with the flow to the outlet. Clear gutters at regular intervals to prevent blockages.
Paint failure and rust on exposed surfaces	Remove rust, prepare and paint with a high quality exterior paint. Gutters should also be painted internally.
SOIL & WASTE WATER PIPES	
Leaking at joints or through cracks and perforations	Check for blockages. Leaking joints may simply need re-caulking. Replace cracked and perforated pipes to match the original (usually cast iron).
No terminals or bird guards	Fit suitable terminals or mesh bird guards to prevent nesting.
CHIMNEYS	
Cracks in masonry	Rake out cracks larger than 2mm and point with lime mortar. If cracked masonry is found to be structurally unsound then repair or replace with stone sourced and dressed to match the existing. Ongoing structural movement or recent cracks should be investigated by a structural engineer and or competent stonemason.
Cracks in render or harl (less than 2mm wide)	Cracks of narrow width can be left but wider cracks, or recent cracks should be investigated by a structural engineer. If replacement is necessary use an appropriate lime render or harl.
Out of alignment such as leaning	May be a significant structural problem. Seek advice from a structural engineer and or competent stonemason.
Cracked or failed chimney pot haunching	Remove defective haunching completely. Remove and reset pots if necessary. Reinstate the haunching with strong hydraulic lime mortar or an appropriate hydraulic lime based mortar. Applying new mortar over older defective haunching is not recommended.
Missing pots or pots over redundant flues not fitted with a suitable terminal	Reinstate missing pots. Pots over redundant flues or flues servicing modern appliances should be fitted with suitable clay flue vents or metal cowls to prevent water penetration and nesting birds while allowing ventilation. *Note that redundant flues should be ventilated at the top and bottom to reduce the possibility of moist air causing damp.*

Defect	Suggested repairs
Redundant T.V. aerials and satellite dishes	Remove any redundant T.V. aerials and satellite dishes. Fixing methods to chimneys will damage the surface, surface coatings and underlying masonry particularly in windy conditions, more so if the equipment and fixing becomes loose.
WALLS	
Spalling and friable stone	Remove areas of spalling and friable stone using stiff bristle brushes or non-marking tools such as wooden spatulas.
Stone decay impacting other building elements or resulting in structural issues	Cut out areas of defective stone and indent/replace with stone sourced and dressed to match the original. *Repair of stone using coloured cement based mortar (plastic repair) is not recommended. Lime mortar repairs may be appropriate but the work is specialised.*
Open joints resulting from missing or crumbling pointing	Rake out any defective pointing and repoint open joints with appropriate lime mortar. *Do not use cement based mortars unless it is necessary to match the original (e.g. late 19th century granite walls).*
Fine gaps at stone/mortar interface	No action required if stable. If pointing begins to crumble or become loose then rake out and repoint as described above.
Surface soiling due to age and weathering.	Cleaning of sandstone is not recommended as it can damage the stone.
Cracks in masonry	Rake out cracks larger than 2mm and point with lime mortar. If cracked masonry is found to be structurally unsound then repair or replace with stone sourced and dressed to match the existing. Ongoing structural movement or recent cracks should be investigated by a structural engineer and or competent stonemason.
Distortion and displacement of masonry	Appoint a structural engineer and or competent stonemason to investigate causes of movement and to develop a repair strategy.
Loose/dislodged cope stones	Lift and re-bed cope stones as necessary to correct the alignment ensuring that joints are thoroughly packed and pointed with appropriate lime mortar. Consider introducing phosphor bronze or stainless steel fixings and cramps to reduce the possibility of movement.
Salt efflorescence	Gently brush off surface salts with bristle brush and rinse down masonry with clean water at regular intervals to flush out salts. Where the problem is ground water, install suitable drainage at the base of the wall. Consider removing inappropriate cement based mortars which can cause moisture to be trapped within the wall and replacing with appropriate lime mortar.
Sub-floor vents cracked, broken or covered over	Remove soil or paving to at least 15Omm below the level of floor vents. Unblock or uncover closed vents if necessary to ensure adequate air flow. Replace broken vents to keep out vermin.
Timber decay in facings and barge boards	Repair or replace timber components affected by decay using traditional materials and techniques. Prepare and finish with exterior paint.
Defective paintwork due to age and weathering to facings and barge boards	Remove loose paint layers back to a sound base, prepare and re-paint with an exterior paint.
HARL/RENDER	
Cracks (less than 2mm wide)	Cracks of narrow width can be left but wider cracks, or recent cracks should be investigated by a structural engineer and or competent stonemason.

Defect	Suggested repairs
Detachment (bossed)	Remove failed surface coatings and repair or replace using an appropriate mortar. *Note that impermeable cement surface coatings may encourage water retention within masonry walls. If replacement is necessary consider using an appropriate lime mortar.*
Flaking/powdering due to age weathering	Repair as above and consider application of limewash.
WINDOWS & DOORS	
Visible gaps in frames or sashes	Repair casement frames and sashes as necessary. Check and free snagged weights which may be causing the frame to twist.
Timber decay	Repair or replace timber components affected by decay using traditional materials and techniques. Sashes may have to be removed to carry out repairs. Prepare and finish with exterior paint.
Missing or defective mastic or other sealant between wall and window	Cut out defective mastic. Pack the gap between the frame and masonry wall using a suitable material and point over the packing with an appropriate lime mortar. Finish with a fillet of burnt sand and boiled linseed oil mastic to waterproof the joint.
Cracked and loose glazing putty	Remove defective glazing putty and replace as necessary.
Missing or defective sill bedding mortar	Rake out bedding mortar and replace with an appropriate lime mortar thoroughly packing it to the full depth of the sill. Form a recessed drip below the edge of the frame.
Missing or defective components (furniture)	Replace missing components with matching items. May be available from an architectural salvage yard.
Defective paintwork due to age and weathering.	Remove loose paint layers back to a sound base, prepare and re-paint using a high quality exterior paint.
LOFT SPACES	
Water staining and or salt efflorescence	Check for recent water ingress and attend to defective roof components if necessary. Gently brush off surface salts with a bristle brush. Monitor for signs of future water ingress.
Decay of structural timbers or sarking	Repair or replace timber components affected by decay using traditional materials and techniques. Appoint a structural engineer to comment on timber decay in structural roof components and to develop a repair strategy.
IRONWORK	
Failing, rusting, unprotected iron work e.g. ornamentation, railings, bratticing, finials, lanterns, etc.	Remove loose and failing paint, grease and rust by industry recommended method (wire brush, chemical and flame). Ensure iron work is fully secured by industry recommended fixing methods (soldering, brazing, welding, mechanical, lead, mortars and adhesives). Prepare surface and coat with industry recommended layers (coatings, primers and top coats).
RUSTING WALL FIXINGS	
Rust expansion of ferrous metal fixings can cause stone displacement and failure	Carefully remove rusting fixings. If removal is difficult it may be necessary to neatly core drill around the fixing. Repair resulting holes with an appropriate lime mortar. *Consider removing all redundant ferrous metal fixings to prevent future problems occurring.*
INTERNAL	
Damp patches or condensation	Check for and attend to any sources of water ingress. Condensation problems may be improved by increasing or introducing ventilation. Where fireplaces have been covered it may be necessary to install an air vent in addition to a flue vent or cowl at the chimney pot.
Cracked or bossed original plaster	Check for and attend to any sources of water ingress. Wide or recent cracks should be investigated by a structural engineer.
BOUNDARY WALLS	

Defect	Suggested repairs
Distortion and displacement of masonry	Appoint a competent stonemason to investigate causes of movement and to develop a repair strategy. Check that nearby trees are not the cause. Structural movement in retaining walls may be due to soil pressure especially if the soil becomes saturated. It may be helpful to introduce soil pressure relief mechanisms such as weep holes, additional drainage and inner walls of brick or concrete. If the problem is severe you may need to appoint a structural engineer to develop a repair strategy.
Spalling and friable stone	Remove areas of spalling and friable stone using stiff bristle brushes or non-marking tools such as wooden spatulas.
Stone decay impacting other building elements or resulting in structural issues	Cut out areas of defective stone and indent/replace with stone sourced and dressed to match the original. *Repair of stone using coloured cement based mortar (plastic repair) is not recommended. Lime mortar repairs may be appropriate but the work is specialised.* Decay resulting from the previous use of inappropriate cement mortars for repointing may require removal of the cement mortar and replacement with an appropriate lime mortar.
Open joints resulting from missing or crumbling pointing	Rake out any defective pointing and repoint open joints with appropriate lime mortar. *Do not use cement based mortars unless it is necessary to match the original (e.g. late 19th century granite walls).*

Appendix D: Glossary

Abutment	The point at which a roof surface meets an upright structure such as a wall.
Arris	The sharp edge at the meeting of two flat or curved surfaces. For example, ashlar will typically have arrises.
Ashlar	Stone worked to an even face with squared edges. Generally rectangular cuboid but can be shaped or moulded. May have a hand tooled or fine rubbed surface finish (polished).
Astragal	A wooden glazing bar used to support the glass panes of a window. Can be horizontal or vertical.
Balustrade	A parapet or stair rail composed of uprights (balusters) supporting a coping or rail.
Band course	A band of masonry running horizontally along an elevation. Often projecting. May be plain or moulded.
Bargeboard	Timber boards at the gable verges. Usually intended to hide the ends of roof timbers. May be plain or decorated.
Bay	Projecting part of an elevation, often featuring windows. May be more than single storey. A bay with angled sides is referred to as a canted bay.
Bedding plane	The natural layers within sedimentary stones that are laid down during formation. Generally, sedimentary stones like sandstone should be built with the direction of the natural bed perpendicular to the direction of pressure.
Bitumen	Also known as Asphalt. A sticky, black, highly viscous liquid, or semi-solid form of petroleum. Used in road construction, but also to make bituminous waterproofing products such as roofing felt.
Blocking course	Plain course of masonry, typically forming a low parapet above a cornice. Often screening an integral gutter.
Bossed	Describes the detachment of a mortar (or plaster) surface coating from the underlying masonry. Tapping affected areas typically produces a dull or hollow sound.
Brattishing	Ornamental cresting of cast or wrought iron crowning a roof. Sometimes also found installed at balconies, cornices, and other ornamental features.
Broached	A Scottish term referring to a horizontally or diagonally furrowed surface finish applied to masonry by hand using a pointed chisel. Usually applied to ashlar. May have plain or tooled margins at the edges.
Capital	The topmost member of a column (or a pilaster). Often ornately carved, and reflecting one of the three orders of architecture – Doric, Ionic and Corinthian.
Casement	In windows, refers to a window that opens on side mounted hinges.
Canted bay	Projecting part of an elevation with angled sides, often featuring windows. May be more than single storey.
Coping	Masonry laid at the top of a wall to reduce water penetration.
Corbel	A bracket built into a wall to support weight from a projecting feature such as a balcony. Deeply embedded into the wall to counteract any tendency to overturn or fall outward.
Crowsteps	A stepped arrangement of masonry to either side of a gable. Often leading to a chimney stack or finial.
Cupola	In architecture, a small tower or dome-like structure projecting from the top of a roof. Intended to add ventilation or light to the inside of a building. Also used to describe a pyramid type skylight over a flat roof providing light to a stairwell.
DPC	Abbreviation for damp proof course. Refers to a waterproof barrier built into a wall and intended to prevent moisture rising through a masonry. Typically, 150 mm above ground level. Generally considered to be introduced around 1875. Early DPC courses may be made of slate or bitumen. Traditional buildings with solid mass masonry walls will not usually have (or need) a DPC.
Dormer	A roofed structure, often containing a window, that projects vertically beyond the plane of a pitched roof.

Drip	A masonry detail designed to direct water away from the face of a building. May take the form of a narrow rebate (slot) cut into the underside of a projecting course of masonry such as a sill. Or a moulding with throating to the underside such as a cornice course.
Droved	A Scottish term referring to a horizontally or diagonally tooled surface finish applied to masonry by hand using a flat bladed chisel. Usually applied to ashlar. May have plain or tooled margins at the edges.
Dry dash	A method of harling in which the aggregate is thrown (dashed) dry onto the applied mortar, instead of being incorporated into the mix (see also harl).
Eaves	The overhanging edge of a roof. Often providing ventilation to loft spaces.
Edge bedded	Refers to natural stone built with the bedding planes vertical and running front to back. See also Face bedded.
Fanlight	The glazed area above a door. Can be rectangular or semi-circular. Also called a transom light.
Fascia	Boarding or panelling fitted to finish an exposed surface area or to provide ornamentation. Usually timber and may be plain or moulded.
Finial	An ornamental termination device often found at the apex of gables, or the top of pinnacles, spires etc. May be manufactured from metal or carved in stone.
Flashing	Sheet material laid over the intersection of building elements to prevent water penetration. Often found covering the gap between roof coverings and masonry walling. May be manufactured of metals such as lead, zinc or copper.
Flashing tape	Waterproof and highly adhesive tape designed to seal gaps and openings against water penetration. May be manufactured with a metal foil layer. Some products degrade when exposed to UV light or harsh conditions. Generally considered inferior to traditional flashing products such as lead sheet.
Friable	A loose and crumbly surface which reduces to finer particles under gentle pressure, such as rubbing or scraping.
Gable	The triangular upper part of a wall (from eaves to ridge) between two sloping sides of a roof.
Harl	A Scottish form of roughcast in which the mixture of aggregate and binding material is thrown (or cast) onto a masonry wall. Traditional materials include coarse sand for aggregate and lime for binder.
Haunching	A wedge of mortar applied around the base of a chimney pot to seal any gaps, and to hold it in an upright position.
Mullion	A vertical element that forms a division between units of a window. May provide support for one or two lintels. May have two faces set at an obtuse angle (cranked) such as in a canted bay.
Ogee	Describes a type of profile. Composed of two curves in opposite directions without a break (forming an S shaped curve). Often seen in timber or masonry mouldings and in cast iron gutters.
Pediment	The triangular upper part of the gabled front of a classical building. Also, often seen in smaller scale over an entrance portico.
Piended	A hipped roof. With pitched (sloping) roofs rather than gabled ends.
Pilaster	A rectangular column projecting from a wall.
Platt	A platform, usually providing access, such as found at the top of a staircase or over a basement.
Pointing	The mortar within the exposed joints between units of masonry or brickwork.
Quoins	Stones forming the corners of walls. Typically worked to an even face with squared edges (ashlar). May have a hand tooled or fine rubbed finish (polished).
Render	A mortar surface coating with a smooth finish applied to masonry.
Reveal	The inner surface of an opening or recess in a wall. For example, at a window or door.
Rubble	Stone of irregular size, shape and texture used in wall building. Can be random shaped or roughly squared and built to a random or coursed pattern. May have a split face or be hand tooled to a roughly flat surface.

Sash and case	Windows in which the glazed panels slide up and down within two parallel frames (the case). Counterbalanced with weights fitted inside the case. May have sash cords or chains to assist with opening.
Skew cope	Coping laid on the sloping part of a gable wall which is upstanding from the plane of the roof.
Skewputt	Large stone at the bottom of a series of skew copes designed to act as a stop end supporting the coping above.
Snecked	A type of masonry construction where squared stones of different heights are laid in courses with the largest rising stones projecting through the courses of smaller stones. The snecks refer to small filler stones.
Soffit	The exposed underside surface of an architectural feature. For example, a staircase or lintel over an opening.
String course	A horizontal band of masonry extending across the façade of a building. Usually narrower than other courses and sometimes projecting. Can be plain or decorative.
Stugged	A Scottish term referring to a 'picked' surface finish applied to masonry by hand using a pointed chisel. The tooling can be applied in a single direction or random.
Thackstane	A masonry projection at the base of a chimney stack. Generally considered to be a detail leftover from its original use covering the edge of a thatch roof.
Tracery	The intersecting pattern of mouldings at the top of a window. Most often associated with Gothic architecture.
Transom	A horizontal member dividing a window or separating a door from a window above it.