





View of proposed corner of 97-101 Trongate

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Photograph of building looking west along Trongate - circa 1930

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History



O.S Map: 25 inches to a mile series, published 1857. This map shows the area prior to the works initiated by the City Improvement Trust (CIT). These earlier buildings occupy a very similar urban form but many of the streets are much narrower. This was widened as part of the CIT health works.

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Introduction

Holmes Miller (HM) has been asked by Dean Engineering to prepare repair/restoration proposals for the building at 97-101 Trongate. The footprint of the building is outlined on the historical maps on these pages and is located on the corner of Trongate and King Street.

This document has been prepared to support the grant application to Glasgow City Heritage Trust (GCHT) as well as the planning and Listed Building Consent applications. It should be read in conjunction with HM's drawings and specification.

The proposals tie in very well with Glasgow City Council's "City Centre Strategy" which includes King Street & The Trongate - established to regenerate Glasgow's historic heart and improve the public realm. In particular, our proposals address the "key actions" of the strategy, for example "working with partner agencies to promote the preservation of built heritage". The general repair and improvement in building appearance actively support this initiative.

Trongate is one of the oldest streets in the city of Glasgow, Scotland. Located in the area of the Merchant City commonly known as "Old Glasgow", it is the main route into the central area from the East End.

Trongate begins at Glasgow Cross, the original centre of medieval Glasgow, marked by the Tolbooth clock tower, the remains of the city's original City Chambers destroyed in 1926 by fire. Westward, it becomes Argyle Street, the most southerly stretch of Glasgow's "Golden Z" shopping thoroughfare.

It was around the 1560s that the name Trongate first began to be used. The name comes by virtue of a weighbeam erected in the mid-16th century, where all goods that were brought in from the Clyde were weighed and taxed. Tron was a Scots word of Norman origin for weighing scales.



Excerpt from Goad's Streetmap of Glasgow Map, published 1929.
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History

The building in question forms the north-east portion of a city block bounded by the Trongate, King Street, Parnie Street and New Wynd. This block was built in 1849 and was designed by J T Rothead.

The ground floor is given over to retail whilst the upper floors were warehouse/storage facilities and are now vacant.

The block is 4 storeys high with an attic space behind a parapet. The elevational treatment is the same on both the Trongate and King Street elevations. The Trongate elevation has 6 bays whilst King Street has 4. The chamfered corner elevation is a single bay. Each bay consists of tall windows flanked by classically detailed pilasters. The pilasters are generally smooth ashlar whilst those on the corner at each end of the elevations are rusticated. There are deep projecting cornices at each floor level. The elevations are topped by a parapet. This is inscribed on the bays around the corner and balustraded on the outer bays. The stonework has been painted. The ground floor is occupied by a newsagent shop. This has large plate glass windows and tiled cladding in a poor state of repair.

The building is grade-B listed and is located in the Glasgow Central Conservation Area.



Aerial view of proposed corner of 97-101 Trongate

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Proposed Works



Significance

This building is significant for the following reasons:-

- The intricacy of stone balustrading and carving to the stone parapet, especially the corner
- The formal and constrained rhythm of classical pilasters
- This is the oldest building in this city block and predates the "modern" tenements and warehouses which were built as part of the City Improvement Trust works in the late 19th century.

The extensive proposals summarised in the next section have the following main aims:-

- To keep these properties wind and watertight for the next 25 years.
- Extensive rainwater management drainage calculations will also be carried out to ensure that the roofs and their



Significance

rainwater goods, catch pits, hoppers, etc. can cope with the anticipated increase in rainfall due to global warming.

- To carry out the repairs holistically. The danger of sporadic and reactive repairs is that they tend to move the problem onto another part of the building.
- To execute an over-arching proactive and learned repairs project utilising the skills and knowledge of a Conservation Accredited Architect and contractors with a track record of working on historic buildings.
- To reverse historic unsensitive works such as
 - Profiled chimney copes will replace the existing square-cut concrete copes.
 - Cement pointing and 'linostone' repairs are to be carefully raked out and removed and replaced with lime-based materials

Management of Change



Located at the corner of King Street and Trongate, the site is one of the last few buildings around the Trongate area that has not been refurbished or restored in recent years.

The Office Floors (1st, 2nd and 3rd) have basically remained empty and disused for a number of years.

The building in general, and particularly the upper floors have had minimal maintenance carried out, however on the whole the building remains wind and weather-tight.

The Ground Floor Newsagent shop has gone through a period of the unregulated addition of advertising signage and incongruous sponsored canopies: to the point that the corner is now a blight on the Trongate area.

On a unique corner setting, the building is flanked on Trongate (No 103) and on King Street (no 10) by similar 5 storey red sandstone warehouse style buildings, both built in 1899-1902 by John McKissack and Son.

Management of Change



From the dates noted it is obvious that the corner site of 97-101 Trongate was developed earlier, with the later buildings built higher, as part of the City Improvement Trust.

The building occupies the entire Plot Footprint, there is no external amenity associated with the building, and no access to the service/external courtyard behind Trongate/King Street.

At various times in the buildings history the ground floor has been a Public House, a Clothes Shop and is currently a Newsagent.

Management of Change



Proposed Elevation on King Street

The Proposal is for the upper floors to be converted into flats whilst the ground floor is refurbished externally and will remain a retail unit.

An additional storey of accommodation will be created within the roof zone to create another flat.

The Applicant has no ownership rights over the Ground Floor and Basement properties, however there is an agreement in place, that allows a small amount of internal alterations to create the 2 separate occupancies, and re-open the existing

disused Entrance at 101 Trongate, to become the new Main Entrance for the Serviced Apartments.

The windows are single glazed and are in a poor state of repair. New double-glazed windows, matching the design of the existing are to be installed.

The Applicants are keen to have the new main entrance brought back to standard befitting the quality of apartments. New black granite cladding will clad the ground floor. The ground floor works will also include the removal of existing advertising canopies and vinyl adverts at signage level.

Management of Change



Proposed Elevation on Trongate

Realising the importance of the corner setting, especially given the fine examples throughout the immediate Trongate, wider Merchant City and the Central Conservation Area on the whole, this address offered a unique opportunity for reinforcing a corner that has been negated in some way, by the higher later additions either side.

Coupled with the restoration of the original stonework through paint removal and the revamp of the ground floor, this untidy blight will be restored to the important prominent corner setting it originally was and contribute greatly and positively to the Trongate and Conservation area.

The additional accommodation in the roofspace will result in the existing roof being replaced with a mansard roof punctuated by zinc-clad dormers. The proposed roof level will only be 800mm higher than the existing. The new roof will also be located behind the existing parapet, ensuring that the listed building's prominence is not compromised.

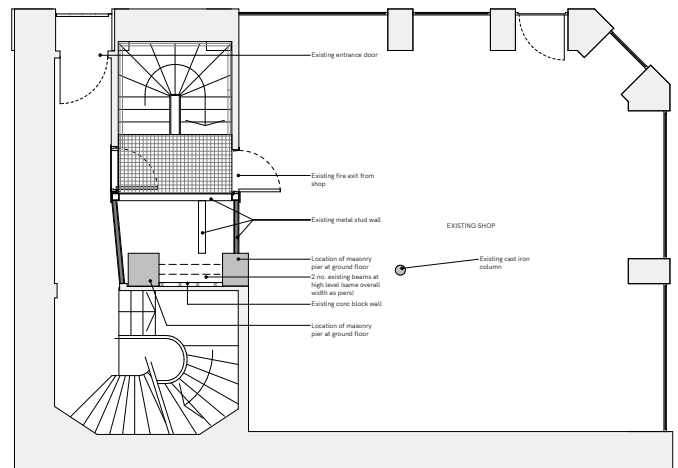
Management of Change

As can be seen from the plans of the existing property, the retail outlet takes up the majority of the ground floor and all of the basement. There is an existing external blank door which accesses the spiral stairwell leading up to attic level.

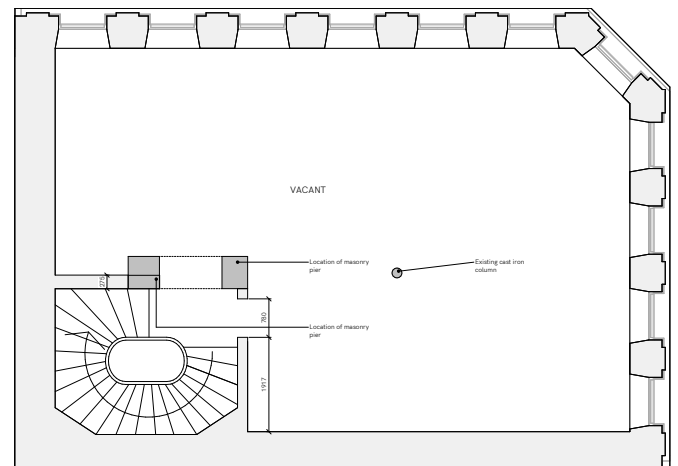
The upper floors are vacant and their only use has been for storage and warehousing. There is evidence of toilet facilities having been located on these floors but these were removed a number of years ago. The floorplates are completely open plan and allow a clean slate in terms of the design of the proposed flats. The attic floor has a low headroom and the floor has missing floorboards in areas.

There is a single cast iron column on each floor supporting downstand timber beams which support the floors. These beams are encased on metal shoes where they meet the column and the external masonry wall.

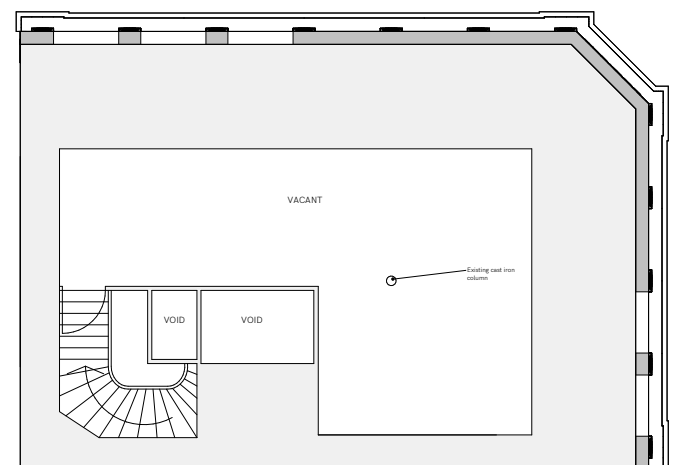
Much of the existing cornicing, especially around the external wall has been removed; the skirtings have been removed and the single-glazed windows are in a poor state of repair.



Existing Ground Floor Plan



Existing Upper Floor Plan

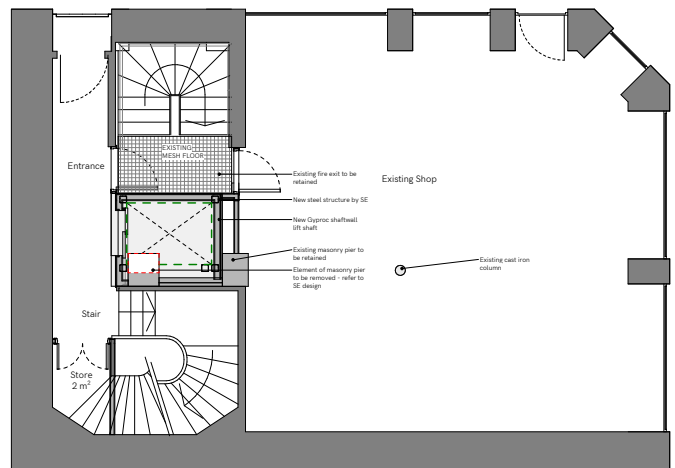


Existing Attic Floor Plan

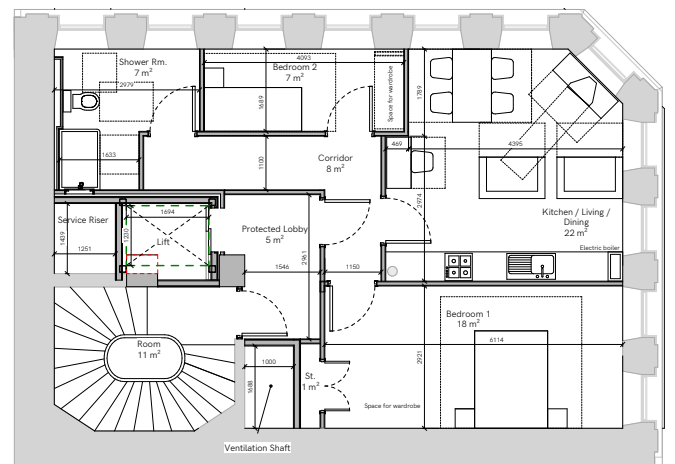
Management of Change

The retail unit will remain where it is on the ground and basement floors, occupying the same area. The only insertion on these floors is the introduction of a lift. The space available for a lift is constricted on all sides by the existing fire escape from the retail unit; the retail unit itself; the spiral stair and the access corridor from the street. The absolute minimum size, therefore, for a lift shaft is 1230x1700mm. This doesn't meet the minimum sizes (from a DDA perspective) noted in BS8300 but the limitations imposed by this existing listed building dictate the lift size. The proposed accessibility to the upper floors is a betterment on the existing building.

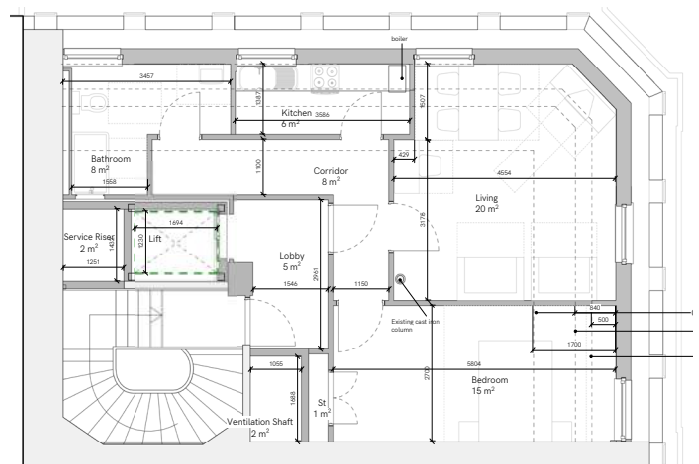
The spiral stair is a significant element of this listed building and is to remain other than the top 6 treads which are to be removed and a new short flight added to allow the top floor stair to reach the attic floor landing at the same point as the floors below. This allows the lift to serve the top floor without a convoluted corridor around the lift. The upper floor plates are the same and have a 2-bed flat on each floor. The attic floor is similar but is slightly smaller in area due to the external envelope being located behind the parapet gutter. This floor will accommodate a one-bed flat. The new roof will be raised approx 800mm to allow for sufficient headroom within the coombed attic floor.



Proposed Ground Floor Plan



Proposed Upper Floor Plan



Proposed Attic Floor Plan

Management of Change



Corner of Ingram Street and S. Frederick Street

Taking in the wider context of the Merchant City area of the centre and beyond, it's immediately obvious that many of the landmark, historic and buildings of note have been made viable again by adding additional floor areas at roof level.

Many of the additions have been in the most recent couple of decades, however extending the urban fabric upwards has been a common approach to achieving additional valuable city centre floor space for much of the last century.

The "wedding cake" tiered effect of many buildings is testimony to such. There are many different approaches to these extensions, however - in general, they tend to adhere to the common approaches of:

1. The rooftop extensions are of a lightweight construction, for both practical (structural) and visual reasons.
2. The extensions are nearly always stepped back from the main existing facade by around 1-1.2m - again, to lessen the visual impact.

Management of Change



Looking north along Brunswick Street from Wilson Street

3. Solar gain in the lightweight mainly glass extensions has been controlled with the addition of brise soleil or a large eaves projection - particularly on the south facing facades.

Proposed Works Specification

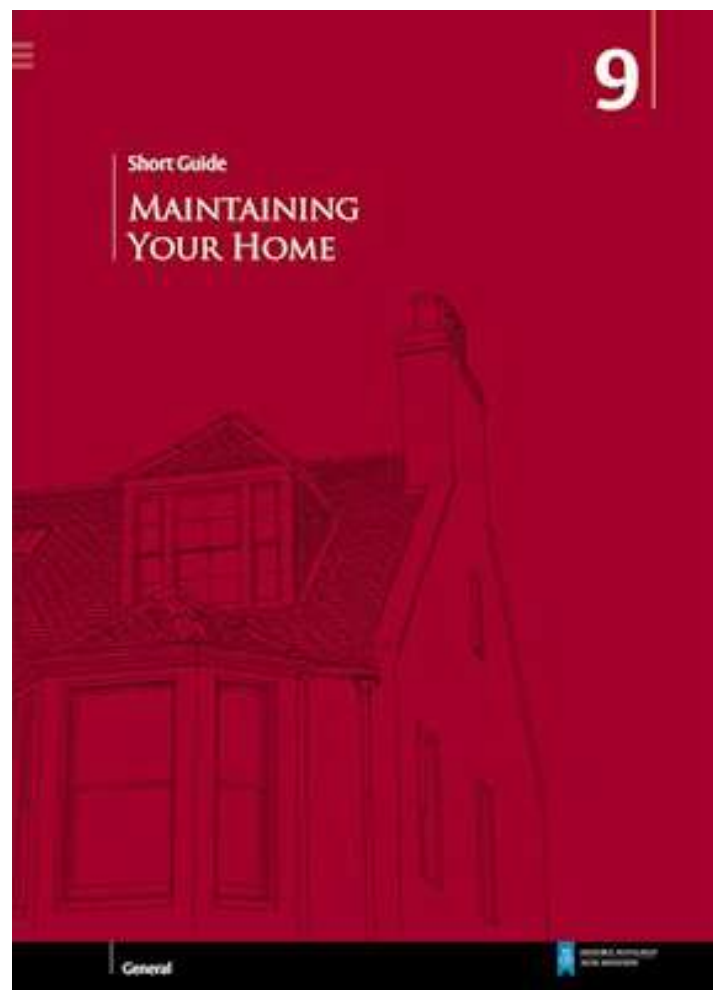
The following is a Description of Proposed Works which is to be carried out on all blocks (closes) unless otherwise stated:-

- Remove vegetation: Carefully remove growth including all roots and soil debris; clean stonework using the high temperature, low pressure DOFF system; repoint in a lime-based mortar to finish. **(Grant eligible)**
- Remove algae and mould: clean stonework using bristle brushes and the high temperature, low pressure DOFF system. **(Grant eligible)**
- Remove previous paint (which has been applied to all the stonework and is peeling in places). Treat biodegradable paint remover; wash off with minimal water. It appears that much of the stone has been coated in a thin layer of cement prior to the paint being applied. The cement is to be carefully removed using fine carborundum pads. **(Grant eligible)**
- Indent stonework: Samples of buff sandstone have been sent for analysis. Report from BGS recommends that Blaxter sandstone from the Dunhouse quarry be used. Carefully cut out damaged stone; bed new stone (full course thickness, ensuring indent is wider than tall) in lime mortar; point to finish. **(Grant eligible)**
- Existing decorative metalwork: Remove items and fixings; blast clean; paint (rust inhibitor primer, two coats undercoat, two coats gloss black finish); re-fix with stainless steel fixings. Where existing fixings have burst stone, indent with matching stone as above. **(Grant eligible)**
- Redundant and utilitarian bits of metal secured to the stonework to be carefully removed. Allow for stone to be indented once fixing has been removed. **(Grant eligible)**
- Cornice flashings: Cover all 4 cornices with new Code 7 lead flashing; fit ply base to shop cornice to create fall (as this cornice is catching a lot of water and splashing up on to wall and vegetation is growing on cornice) with drip, and cover flashing (code 6 lead) 100mm up wall and set into 25x25mm rattle with lead wedges and sealed with grey polysulphide mastic. **(Grant eligible)**
- Pointing: Take samples (allow for samples to be taken of both pointing and bedding mortar). Fill scaffold holes and other small holes (less than 25mm dia.) with colour matched lime-based mortar **(Grant eligible)**
- Brickwork repairs: Procure second hand or new special common bricks to match existing and piece into existing walls where bricks are damaged or missing; bed in lime-based mortar. **(Grant eligible)**
- All existing concrete copes to be removed from chimneys and replaced with new stone copes with a profiled edge and drip. **(Grant eligible)**
- Decorative stone balustrade at roof is in very poor repair and crumbles to the touch. These to be removed completely and new balustrades to be formed to precisely match the existing using the Blaxter sandstone. **(Grant eligible)**
- Slate: Strip all slates from all roof slopes. Sound existing slates to be retained (re-holed and resized as necessary) and used on new roof. New Siga 120 rustic Welsh slate to be used for any shortfall in slate. Slates to be nailed (using copper nails) onto sarking boards via a breathable felt membrane. Every 4th row of slates to be double nailed. **(Grant eligible)**
- New lead flashings: Code 7 lead flashings generally; fix with lead/copper/stainless steel clips fixed back to timber/stone; finish with application of patination oil. Where flashing overhangs an edge, the overhang should extend out from the vertical face to drip clear. Flashings to be applied to hips and abutments where slate roofs meet stone walls of adjacent buildings. **(Grant eligible)**
- New lead gutter (where inspected and found to be required): Code 8 lead gutter; fix with lead/copper/stainless steel clips fixed back to stone parapet (ragged into existing joint and joint filled with 2-part polysulphide mastic, coated in stone dust). Lead to be taken up mansard roof and to stop 25mm above overflow pipes in parapet wall. All joints in gutter to be 50mm step laps (if heights not available lead to be increased to code 9); Install robust lead grating to outlets. Cover flashings to be code 6. **(Grant eligible)**
- Replace all ridge flashings (whether zinc or lead) with a new code 8 lead ridge flashing fixed over a proprietary ridge vent, fixed back to the existing ridge board. **(Non-grant eligible)**
- Discreet roof vents to be incorporated into eaves to ensure the roof void is suitably ventilated. **(Non-grant eligible)**
- 300mm mineral wool insulation to be laid in roof void on top of ceiling. **(Non-grant eligible)**

- Gutters and downpipes: All downpipes are internal and a mix of cast iron and plastic. Allow for an access panel 300mm above ground. Existing cast iron rainwater goods to be closely inspected and any damaged elements to be replaced in cast iron. The gutter is a lead-lined parapet gutter and this is dealt with above. **(Grant eligible)**
- All below ground drainage to be checked at end of contract to ensure running clear; paint all cast iron on completion, including inside of gutters; install anti-bird wire ball grating to outlets. **(Grant eligible)**
- A full drainage calculation to be carried out for each block. This is to follow the guidance and instructions in BS EN 12056-3:2000 to ensure that the roof drainage design can cope with the anticipated increase in rainfall due to global warming. **(Grant eligible)**
- Parapet gutter overflow pipes (assumed to be lead): Copper; 50mm diameter; drilled into stone parapets; sealed to stone with mastic; sealed to lead with solder. **(Grant eligible)**
- Window mastic: Rake out existing mastic to all windows; fill gaps with mineral wool insulation or dampened rolled up newspaper; apply polypropylene rod; apply linseed oil - sand mastic; colour to match stone (red or buff). **(Non-grant eligible)**
- Remove all redundant services fittings and cabling. **(Non-grant eligible)**

NEW WORKS

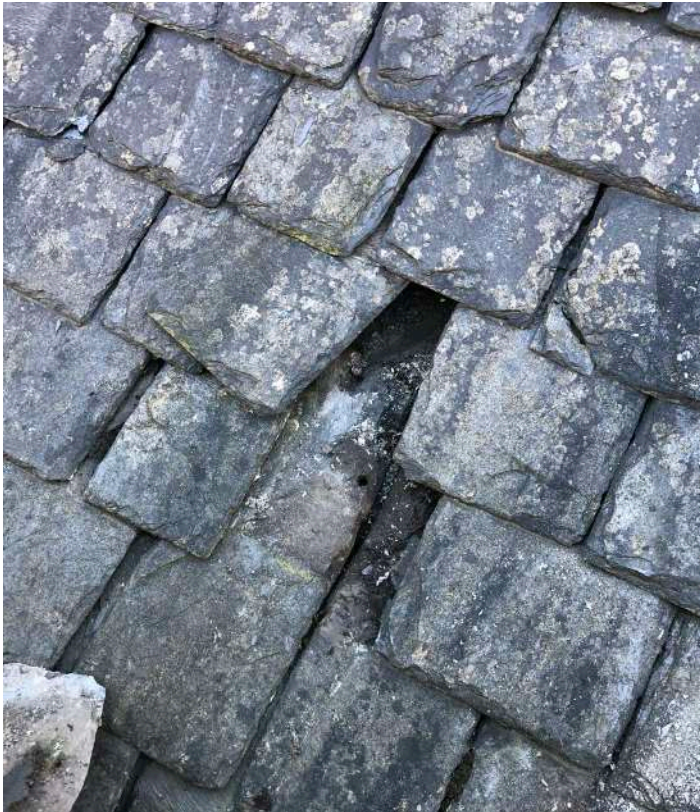
- All existing single-glazed timber framed windows are in a poor state of repair and an enormous amount of heat energy is lost through them. These are to be replaced with new timber framed double-glazed windows matching the elevation and opening patterns as the existing. Window frames to be painted blue to match those of the adjacent property and painted with primer, undercoat and 2 coats microporous gloss finish. This is actually part of an earlier planning permission (ref. 17/00345/DC) **(Non-grant eligible)**
- Existing slate roof to be removed and a new timber mansard roof structure built. Top of new roof is 500mm higher than ridge line of existing. New zinc clad dormers (3 per elevation) to be inserted into the mansard roof. The flat top element of the roof is not visible from street level and will be clad in a single ply membrane. **(Non-grant eligible)**
- Ground floor elevation (to shop): doors and windows to remain but have frames painted dark grey. Door to flats to be replaced with a solid core timber 4-panel door, painted dark grey. A new glazed fanlight to be installed above main door - with new gold lettering stencilled onto it. **(Non-grant eligible)**
- The walls between the windows and doors are currently grey tiles - many of which are broken. These are to be removed and replaced with a thin black granite cladding system. **(Non-grant eligible)**
- New timber fascia above shop with gold lettering. This is to match size, colour, angle and material (timber) of fascia next door. **(Non-grant eligible)**



Useful documents published by Historic Environment Scotland

3

Future Maintenance



Example of perished slate nails - on High Street

Maintenance

When regularly and appropriately maintained, traditional buildings and their original fabric are very durable. There are many buildings in Scotland in which their key materials such as stone, structural timbers, slate, cast iron and lead are hundreds of years old and still fit for purpose. It can also be viewed in sustainability terms, recognising the value of resource retention in a world where many materials are becoming scarce and expensive.

Historic buildings contribute to the fabric and pleasure of Scotland's built environment and, therefore, they need to be appropriately cared for. This means regular maintenance and repair with the right skills and the appropriate materials.

Broadly speaking, if water can be kept out of a building and key components protected, a building can survive almost indefinitely. This means maintaining intact roof coverings, properly functioning rainwater goods, keeping masonry elevations in good condition and routing surface water away from the building. The perceived maintenance burden of older structures can be attributed in large part to a pattern of general neglect, the use of inappropriate materials in past repairs that make the defects worse and simply poor workmanship.

Traditional materials such as lime, timber, lead, cast iron, and appropriate paint types are now more widely available than in recent years and are easier to source. Owners should be cautious about products and materials that are described as 'maintenance free'. This can also mean that they are simply unmaintainable; that is, they perform well until the point of failure, when they will have to be replaced in their entirety. This leads to the false economy of buying cheaper products but having the additional expense of replacing them many times over the course of the lifetime of more traditional materials.



Pointing a rubble wall in a lime-based mortar

Maintenance

Owners need to be aware that the fabric of historic buildings behaves differently from the fabric of those constructed using modern methods and materials, and generally comprises natural materials sourced locally or regionally. Many of these components, such as masonry, timber and lime, are vapour open (sometimes referred to as 'breathable') and this important property should be kept in mind when inspecting the building and planning repairs.

Generally work to traditional buildings requires the use of a range of materials that are compatible with the existing traditional fabric. This allows the vapour open nature of the construction to be maintained so that moisture can be freely dispersed. These materials, which for the external structure are normally lime, stone, timber and slate, by virtue of their material properties or the way they are put together allow the movement of water vapour through the material or via moving air around them. The use of modern impermeable materials in repairs may compromise this dynamic and lead to concentrations of water or areas of high humidity, both of which will provide favourable conditions for mould or timber decay. Areas where inappropriate materials are often used are repointing walls with cement-based mortars or painting stone walls with masonry paint or replacing cast iron rainwater goods with uPVC. Sometimes on their own such interventions may not cause problems, but when coupled with other shortcomings in maintenance, such as blocked downpipes or defective stonework on a chimney, the fabric can rapidly start to suffer. Persistently damp or wet masonry can have structural implications.



An indented stone having just been inserted in place. Pointing still to be done.

It is good practice to plan certain inspection and repair cycles. Generally these will be related to common and recurring maintenance tasks. Rainwater goods are frequently liable to blockage, especially during the autumn when leaves clog rhones and cause overflows. A twice-yearly check and clearing out of rhones and downpipes should be implemented. Below ground drainage that takes rainwater away from the building will also need periodic inspection and testing to ensure that water is draining freely. Windows and timber items should normally be re-painted every five years. Masonry should need very little maintenance, but where areas are defective it is worthwhile planning work in advance and incorporating other repairs as necessary to make best use of scaffolding.

Regular inspection allows maintenance to be planned in advance, rather than waiting for failure to occur. How often a building is inspected will depend on exposure, age, general condition and even its use. Generally a bi-annual inspection is appropriate, with additional checks after extreme weather or other unforeseen events.

Maintenance



Damaged and leaking cast iron rainwater pipe

Element	Frequency			Action during Inspection
	1 year	2 years	5 years	
Closes	fortnightly			Clean stairs, windows and walls
Rainwater Goods				Remove debris and ensure water can flow freely; check for cracks.
Valley Gutters				Remove debris and check for wear or punctures in the zinc or lead.
Parapet Gutters				Remove debris and check for wear or punctures; check overflows; check stability of timber below
Roof Coverings				Remove any debris and plant growths; check for slipped slates.
Below Ground Drainage				Check drainage and ensure that water is being taken clear of the building.
Ext. Paintwork				Check for cracking or flaking paint, especially on south-facing and exposed elevations; re-paint normally every five years.
Painted Masonry				Check for flaking or blistering - this may indicate increased moisture levels in the fabric especially at ground level.
Flat Roofs				Remove debris and plant growth; clear any rainwater outlets.
Flashings				Check pointing and mastic work to the flashing; repair slipped or damaged metal elements; check for punctures to lead.
Windows				Check for areas of soft timber; check sand mastic junctions; check glazing putty for cracks.
Doors				Check for areas of soft timber, distortion, flaking paint or failing sand mastic junctions; oil hinges.
Rooflights				Remove debris and plant growths; clean glass.
Chimneys				Assess condition of pointing and security of the chimney cans.
Exposed Stone Features & Parapets				Check condition of pointing, especially thin ashlar joints and check for signs of movement or loose masonry.
Masonry & Pointing				Check for loss or damage to pointing, flaking stone, erosion or salt efflorescence
Vegetation				Check that vegetation is not close up against walls and that roots are not choking drainage routes.
High Level Timber Work				Check for timber decay and condition of paintwork; check integrity of fastenings with the roof timbers.
Render				Check for areas of failure by surface tapping (bossed areas will sound hollow).

Recommended Maintenance (and frequency) for Traditional Building

Maintenance Regime

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