

EDINBURGH CASTLE – QUEEN ANNE BUILDING

Climate Change Works 2016

Window draught-stripping and secondary glazing

Studies by the HES Climate Change Group have highlighted Edinburgh Castle and Stirling Castle as the largest users of energy within the HES Estate. To achieve Climate Change targets a series of buildings at these sites need to be upgraded to improve their energy performance and reduce carbon emissions.

The existing timber sash and case windows in the Queen Anne Building have been identified as a suitable case for treatment.



East elevation of the Queen Anne Building, showing typical windows.

Background - The Queen Anne Building and its windows:

The Queen Anne Building occupies a prominent site on the west side of Crown Square; a site which has been built upon in various forms since medieval times. The current structure, as seen from Crown Square, was built as officer's barracks and dates from about 1710, incorporating older fabric on its south and west sides, and sitting on stone vaults dating from the 15th century.

Major alteration works were carried out in the 1930s to convert the building to form the Naval and Military Museum.

Further works were undertaken by Historic Scotland at the start of the present century, including the addition of a new glazed roof to the inner courtyard, in order to provide conference, catering and education facilities within the Upper Ward. These uses continue.

The timber sash and case windows have undergone many cycles of repair and maintenance, and many of the sashes, and some complete box frames, are replacements. Likewise, there is much modern glazing in the present windows.

The existing windows are not effectively draught-stripped, and are therefore responsible for significant heat loss and discomfort during cold and windy weather.

General Principles:

The objective is to reduce draughts from the windows and thus improve comfort and energy efficiency, and to achieve this with minimum impact on the appearance and fabric of the building.

This will be achieved by draught-stripping all sash and case windows, and, in addition, fitting secondary glazing to all first floor windows on the external elevations. Ground floor windows will not be fitted with secondary glazing as this would be too conspicuous both from within and without the building.

Draught-stripping:

All sash and case windows on the external elevations of both the Ground and First Floor of the Queen Anne Building are to be overhauled and draught-stripped. See plan drawing SMC 001.

This work will comprise freeing-up sashes; renewing sash cords; fitting draught seals to existing sashes, and where possible to existing baton rods and parting beads.

Existing components such as cord pulleys are to be retained and refurbished.

Existing glass will be retained. Any broken glass is to be replaced with new crown glass.

External box frame margins are to be sealed with traditional burnt sand/linseed oil mastic.

Windows will be decorated as necessary upon completion.

Draught-strip profiles are shown in Appendix 1 below.

Secondary Glazing:



The Banqueting Hall, Queen Anne Building

All sash and case windows on the First Floor of the Queen Anne Building, in addition to being overhauled and draught-stripped, are to be fitted with internal secondary glazing, as plan drawing SMC 002.

First floor windows within the banqueting hall only are to be fitted with fixed secondary glazing, as section drawing SMC 004.

The remaining first floor windows are to be fitted with vertical sliding / inward tilt opening secondary glazing, as drawing SMC 003

A number of secondary glazing systems were investigated, and judged against the following criteria:

1. Straightforward to install, with minor impact on existing building fabric
2. Fully removable
3. Able to accommodate existing shutters, where fitted
4. Compatible with existing Simplex hinges for cleaning and maintenance
5. Capable of easy and safe operation, to current H+S standards
6. Openable to allow ventilation

The drawings illustrate the preferred system, Granada Heritage, which incorporates thin section sizes and discrete window furniture. Drawing SMC 003 shows typical profiles.

Fixed and opening secondary glazing units are to be in white powder coated aluminium slim profile sections, with plain toughened glass. Timber trim will be painted white to match.

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Appendix 1. Illustrations of beads, carriers and weatherpile:



CW515

A. Typical weatherpile and carrier, to be inserted into kerf cut in top rail / bottom rail / meeting stile



SB573

B. Typical timber baton rod (staff bead) with pile carrier insert



PB523

C. Typical timber parting bead with pile carrier insert