Historic Environment Scotland
Àrainneachd Eachdraidheil Alba

SWEETHEART ABBEY, SOUTH AISLE AT ARCADE / SW CORNER WALL
PROPOSED MASONRY REPAIRS: ROUGH RACKING CONSOLIDATION
ANNEX A SUPPORTING STATEMENT **version 05/07/2016**

1.0 BACKGROUND

1.1 Sweetheart Abbey is a Cistercian abbey complex founded in 1273 with construction continuing into the C14. The site came into State care from 1928 and it is a staffed Historic Environment Scotland site open to the public.

1.2 Although original timber roof structures are entirely lost, standing masonry remains of the church itself are extensive with many red sandstone walls and the Bell Tower surviving almost to their full original height. Sections of the external walls to the side aisles and side aisles' stone vaulted ceilings are missing however, exposing areas of wall core material. This comprises a matrix of lime mortar and rough stones of red sandstone and granite. Original, and with potential to provide information about construction through analysis, this core material survives extensively throughout the structure within the build. It is significant but considerably less so than individual worked stones forming facework to walling. As a reasonably homogenous mass fill material, its overall significance would be little diminished by minor local loss of material.

1.3 Site evidence confirms that extensive past campaigns of repair have been undertaken at this site. Intervention works have including consolidation of exposed core material using cementitious mortar as a slaistered application over the lime mortar / stone matrix. Cementitious mortar has also been used as a means of bedding and securing small rough stone built into vertical faces of the broken walls to form rough racking. This technique is standard ancient monument practice, widely used in repair and presentation of broken wall areas to assist reading of the monument whilst allowing consolidation and weathering needs to be met.

2.0 THE PROBLEM

2.1 Over time some of the exposed original core matrix has weathered back behind the applied cementitious mortar covering. This has resulted in areas of the modern mortar covering and rough racking detaching and falling or, in the SW Aisle area identified, remaining precariously in situ, posing a health and safety risk. Additionally, from a safety perspective, reliance solely upon cementitious mortar to bond larger protruding rough racking stones to a fragile wall core, in locations where material poses a high risk of unpredictable failure and debris fall from height, is no longer considered acceptable practice for new work.

2.2 If repair works are not undertaken the affected area would require to be permanently cordoned off to maintain safety for staff and visitors. Exposed weaker core areas would continue to decay at an accelerated rate posing a risk to the stability and integrity of the wider monument longer term.

3.0 PROPOSED SOLUTION

3.1 The philosophy of approach would be to confine intervention largely to limited impact on the original core material, together with renewal of modern rough racking. Rough racking consolidation proposals entail removal of detaching sections of cementitious mortar, rough racking and some original core material back to reasonably sound original core material per drawing text specification.

3.2 As necessary, stainless steel mesh would be incorporated below the rough racking reinstatement to contain original fragile core material and provide an armature for attachment of rough racking mortar and stones. Mesh would be held in place by stainless steel threaded rods set into resin in holes drilled into the original wall core material only. No fixings would be made into faces of sandstone dressings, though rod fixings might exceptionally catch tails of some through stones extending into the wall depth. Rods would be placed at centres and distributed across the area to adequately secure the rough racking in place. Extent of this metalwork intervention would be kept to the minimum necessary commensurate with soundly retaining applied consolidation material to ensure it fulfils weathering capping and safety performance needs.

3.3 Although some localised loss of core material is involved, this is considered the best option to meet weathering and safety requirements whilst minimising monument intervention and maintaining existing consolidated ruin appearance. This method and philosophy of repair are consistent with works carried out elsewhere on the HES Estate - eg at Bothwell Castle.

3.4 Other options have been considered but discounted. Replacing rough racking with stone build up was rejected as it would require greater intervention and change the presentation and readability of the monument. Options of perpetuating previously used consolidation techniques and doing nothing were rejected for the reasons stated above.

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