

Scottish Medieval Castles & Chapels C-14 Project

Proposed mortar sampling strategy at Lochmaben Castle, Dumfriesshire



SC14-LCD-PRE-02

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Introduction to SMCCCP

The Scottish Medieval Castles & Chapels C-14 Project (SMCCCP) is an archaeological research project investigating the palaeoenvironmental potential of Scottish medieval building materials. The project is joint-funded by Historic Environment Scotland and the University of Stirling, directed by Mark Thacker (Research Fellow, University of Stirling), and is scheduled for completion in 2019.

Document & Site Details

Site	Lochmaben Castle, Dumfriesshire
NGR	NY 0883 8115
Document reference	SC14/LCD/PRE/02
Subject	Proposed Sampling Strategy
Previous reports	SC14-LCD-PRE-01 (Preliminary Survey)
Fao	Historic Environment Scotland, [REDACTED]
Compiled	M Thacker (last revision 02/11/2016)

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1 - INTRODUCTION

During the project's recent non-intrusive rapid survey of Lochmaben Castle, a limited volume of primary constructional mortar was noted within two fragments of masonry walling, both of which are in secondary positions (see report SC14-LCD-PRE-01). Preliminary characterisation suggested this material had high archaeological potential but was rapidly degrading. A programme of further survey, sampling and materials analysis was therefore proposed and this document has been drafted to inform the subsequent Scheduled Monument Consent application.

2 - STATUTORY PROTECTION

Lochmaben Castle is a Scheduled Ancient Monument and HES property 'in-care'. Castle Loch and the surrounding shore is an SSSI, Special Protected Area and RAMSAR protected area, but the castle site is excluded from these designations (Nich Gedge, SNH, pers. Comm.; see figure 1 below).

3 - ACCESS TO FABRIC

It is possible to complete the proposed sampling programme from identified Contexts 1 and 2 (see SC14-LCD-PRE-01) from ground levels and in publicly accessible parts of the site. Further survey and sampling within the area of the site to which public access is currently restricted is also proposed, and this is subject to arrangements with Paul Beaton (HES, District Architect).

4 - SAMPLE CONTEXTS

The coordinates (x, y and z) of fixed samples will be recorded by hand measurement, with lateral positions measured from fixed building features and height measured from ground level. These measured contexts will be annotated onto the RCAHMS (1995) plan drawing of the site (see figure 3 in SC14-LCD-PRE-01). All sample contexts will also be recorded by photograph.

5 - SAMPLE QUANTITIES

1 small mortar sample, of approximately 50 x 50 x 50mm, will be sought from contexts 1 and 2. 1-3 further small mortar samples will also be sought from the upstanding building within the area of restricted access.

A number of very small mortar samples with relict-fuel (generally up to approximately 0.5g or 1cm³) will also be sought from the surface of contexts 1, 1b and 2, and from the upstanding building within the restricted area. Quantities of these very small samples from each context will respond to availability.

6 - SAMPLE REMOVAL

Samples will be removed by Mark Thacker. Small mortar samples will be removed using a strong knife or masonry chisel, and very small mortar samples with fuel relicts will be removed

with a strong knife. A small trowel and/or hand brush may be used to investigate very degraded mortar material or remove organic growth from the surface of the masonry. Degraded mortar spoil (such as that on the ground in context 1, see SC14-LCD-PRE-01) may also be investigated by gentle trowel use. No samples will be removed where this is likely to spall building stones or accelerate the deterioration of the upstanding monument.

7 - SAMPLE STORAGE

Samples will be stored immediately in well-labelled sealed bags, away from light or heat sources. Within 48 hours, all samples will be air-dried and re-sealed in sample bags at room temperature and isolated fuel-relict samples will be refrigerated at University of Stirling Dept. of Biological and Environmental Sciences.

8 - SAMPLE ANALYSIS

Mortar samples will be thin sectioned at the University of Stirling and analysed with a polarising microscope by Mark Thacker. Fuel-relict samples will be analysed microscopically in reflected light and characterised to genus level by Mark Thacker. Radiocarbon analysis will be undertaken at SUERC (East Kilbride).

9 - HEALTH AND SAFETY

Sampling from contexts 1 and 2 is to be undertaken in a single day by Mark Thacker, who will wear standard construction site PPE including high-visibility vest, steel toe boots, and impact-resistant glasses (hardhat will not be required here). An information sign will be erected to inform the visiting public of the works and access to each context will be restricted by use of warning cones. Mark Thacker is a qualified stonemason licenced under the HSE's Construction Site Certification Scheme, and the proposed sampling and analysis programme will be subject to University of Stirling risk assessment protocols.

Survey and sampling from fabric within the area of the site to which access is currently restricted by security fencing will require more comprehensive health and safety risk assessment and further discussion with the HES conservation team. This area will not be accessed alone; a member of HES staff may be required to be present; construction site PPE will be required including hard hat; access to fabric will initially be from ground level only, although further arrangements enabling access to higher masonry (and possible use of forthcoming mwp) will be discussed with HES conservation staff. Survey and sampling in this area will be subject to both University of Stirling and HES risk assessment protocols.

10 - FIGURES

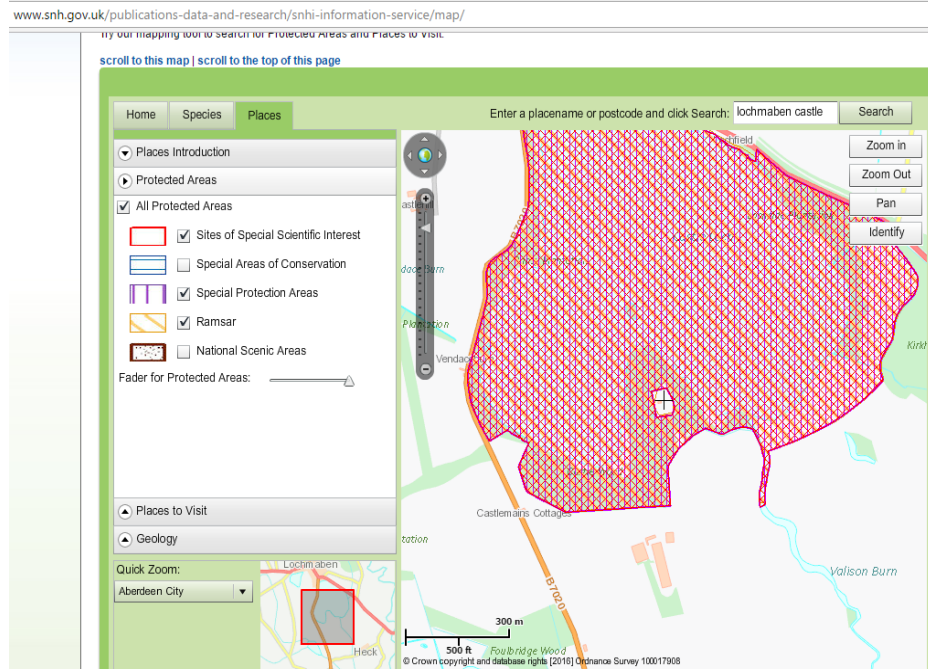


Figure 1 (above) – Screen shot of SNH protected areas; Castle Loch is an SSSI, SPA and RAMSAR protected area, but the site of Lochmaben Castle north of the canal/moat (marked here by the cross +) is not included within these designations. Viewed 2nd November 2016, and consulted with Nick Gedge of SNH Dumfries.