UNIVERSITY of STIRLING

Scottish Medieval Castles & Chapels C-14 Project

Proposed mortar sampling strategy at Kinclaven Castle, Perthshire

SC14-KCP-PRE-02

MARK THACKER

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	Kinclaven Castle, Perthshire
NGR	NO 1581 3773
Document reference	SC14/KCP/PRE/02
Subject	Proposed Sampling Strategy
Previous reports	SC14-KCP-PRE-01 (Preliminary Survey)
Fao	Historic Environment Scotland, [redacted]
Compiled	M Thacker (last revision 25/10/2016)

Contents

1 -INTRODUCTION

During the project's recent non-intrusive rapid survey of Kinclaven Castle, it was noted that the primary mortar of the building was very visible and accessible, and initial characterisation suggested this material had high archaeological potential (see report SC14-KCP-PRE-01). 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

Kinclaven Castle is a Scheduled Ancient Monument, but the site is not subject to any environmental statutory area protections (see figures for SNH information map).

3 - ACCESS TO FABRIC

It is possible to complete the proposed survey and sampling programme from ground levels, with use of a stepladder only.

4 - SAMPLE CONTEXTS

All samples will be removed from contexts visible on the surface of the monument, and most will be from core rubble contexts made visible by historic masonry collapses (see figures).

The coordinates (x, y and z) of fixed samples will be recorded by hand measurement from fixed building features, and by photograph. Although high volumes of wall facing stone has been lost in many contexts, each wall displays enough facing stone (and often in the lowest courses) to enable lateral context measurement from adjoining internal and external wall faces.

The only clearly measurable features to which coordinate heights can be related, however, are the lintels of the intramural passage in the south-west wall and the plinth splays in the north-west wall. Datum levels will therefore be recorded relative to these features.

Sample contexts will be annotated onto plan drawings of the site for the final report, and it has been agreed that data from the recent RCAHMS/HES measured survey can be used for this purpose. Sample contexts will also be recorded by scaled photograph.

5 - SAMPLE QUANTITIES

2 to 5 small mortar samples, each of approximately 50 x 50 x 50mm, will be sought. This is likely to include a core sample from each of the four walls

10-25 very small mortar samples with relict-fuel, generally up to approximately 0.5g or 1cm^3, will also be sought.

In addition, there are large volumes of loose mortar available around and upon the south-east wall, samples of which may have good research potential for microcharcoal and binder C-14 measurement. At the south end of the SE wall, in particular, a large number of core mortar fragments have been broken away and exposed by the collapse of a large tree. This mortar is clearly SE core but is now loose and ex-situ, and so collection of this material for further analysis is also proposed (see figures).

6 - SAMPLE REMOVAL

Samples will removed by Mark Thacker. Mortar samples will be removed using a masonry hammer and chisel, and a strong knife. No samples will be removed where the masonry is considered fragile or where sample removal is considered likely to spall face stones or accelerate the deterioration of the monument in any way.

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 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 is likely to be undertaken over two days. Mark Thacker, and any accompanying assistant, will wear standard construction site PPE including high-visibility vest, steel toe boots, hard-hat and impact-resistant glasses. An information sign will be erected to inform the visiting public of the works but, as visitor numbers are probably very low, fencing of the monument during sampling is not considered necessary.

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.

10 - FIGURES

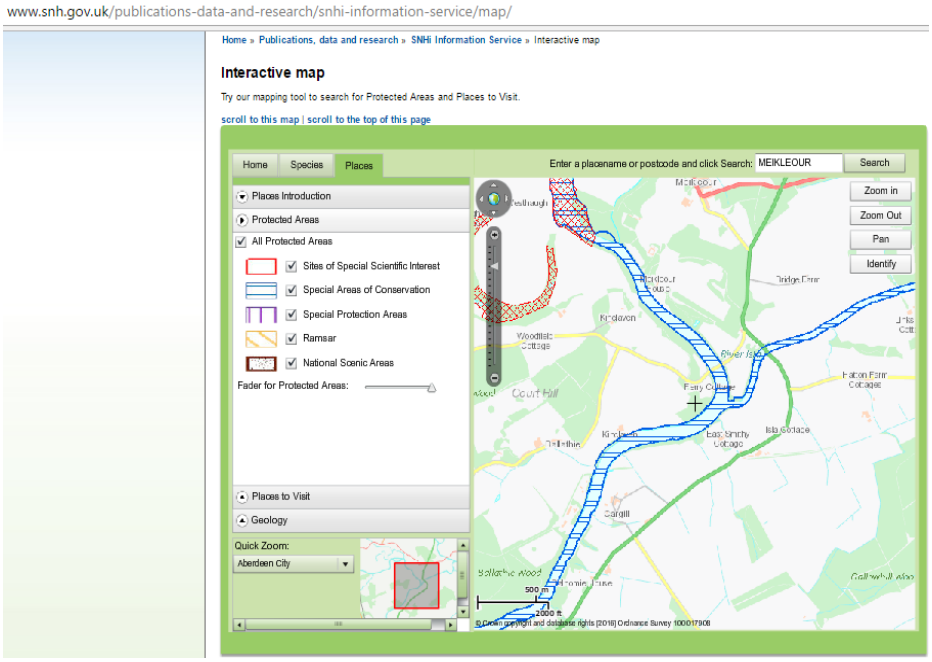

Figure 1 (above) – Screen shot of SNH protected areas; Kinclaven Castle is marked by the cross + and is not in a protected area. Accessed October 2016.

Figure 2 (above) – Kinclaven castle; wallhead of south-east wall includes contexts with quanities of detached core mortar fragments. No Scale; photograph M. Thacker.