

Scottish Medieval Castles & Chapels C-14

Project

Proposed mortar sampling strategy at Duffus Castle, Moray



SC14-DCM-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	Duffus Castle, Moray
NGR	NJ 1892 6725
Document reference	SC14/DCM/PRE/02
Subject	Proposed Sampling Strategy
Previous reports	SC14-DCM-PRE-01 (Preliminary Survey)
Fao	Historic Environment Scotland
Compiled	M Thacker (last revision 04/11/2016)

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1 -INTRODUCTION

During the recent non-intrusive rapid survey of Duffus Castle, primary constructional mortar was noted within various masonry contexts within the west keep (see SC14-DCM-PRE-01).

Preliminary characterisation suggested this material had high archaeological potential and so a programme of further survey, sampling and materials analysis was proposed. This document has been drafted to inform the subsequent Scheduled Monument Consent application.

2 - STATUTORY PROTECTION

Duffus Castle is a Scheduled Ancient Monument and HES property 'in-care', but is not subject to any statutory environmental protection. (Jennifer Heatley, SNH, pers. Comm.; see figure 1 below).

3 - ACCESS TO FABRIC

It is possible to complete the proposed survey and sampling programme from ground levels with a stepladder, but a more comprehensive programme of analysis would be possible if access to higher levels of the monument were made available. As Duffus Castle is a property in the care of Historic Environment Scotland, the potential for enabling safe access to particular higher levels of masonry will be discussed with the HES conservation architect responsible for the site.

4 - SAMPLE CONTEXTS

Contexts considered to be associated with the original construction of the west keep and (if possible) curtain wall will be the focus of the sampling strategy, as these are relevant to the most significant research questions. It is envisaged that the majority of samples will be removed from contexts 1-5 of the west keep already identified in the preliminary survey (see SC14-DCM-PRE-01). More contexts may be included, however, depending on further survey and especially if access to higher levels of masonry is possible.

Sample context coordinates (x, y and z) will be recorded by hand measurement from fixed building features, such as wall faces, and from level datum string lines. Sample contexts will also be recorded by photograph. If stone-by-stone elevation drawings are made available then these will be annotated on site. Sample contexts will be annotated onto plan drawings of the site for the final report.

5 - SAMPLE QUANTITIES

1 to 4 small mortar samples, each of approximately 50 x 50 x 50mm, will be sought. This is likely to include: 1-2 samples from the west keep; but may also include 1 sample from the curtain wall; and 1 sample from the later range.

15-25 very small mortar samples with relict-fuel, generally up to approximately 0.5g or 1cm³, will also be sought. Almost all of these are likely to be removed from the masonry of the west keep, although in the unlikely event that samples are identified elsewhere, then these might be removed also.

All samples will be from contexts visible on the surface of the monument, and most will be from core rubble contexts made visible by historic masonry collapses (see contexts 1-5 in SC14-DCM-PRE-01).

6 - SAMPLE REMOVAL

Samples will be removed by Mark Thacker using a small masonry 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 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 will be undertaken over 1-2 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. It is proposed that each localised area of the monument is isolated from the public with warning tape and cones as sampling proceeds (further advice on this will be sought from the site conservation team). It is understood that heritage management may request that Mark is accompanied by a member of the site conservation team, but if that is not practicable then he will be accompanied by his own assistant. Mark is a qualified stonemason licensed 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.

