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The medieval castle of Dun Aros: buildings archaeology and chronological consistency on the shores of the Sound of Mull

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ABSTRACT

An investigation of Aros Castle (NM 56287 44989) was undertaken which included low-level survey of the site's north-west block followed by lab-based analysis of a mixed assemblage of building material samples. The study presents the first independent evidence relating to the chronology of building construction on the site and reveals the wide range of techniques and materials exploited during that process. The results are consistent with surviving documentary, architectural and art-historical evidence, and highlight the importance of the site's masonry structures for the mediation and display of Clan Donald power during their later medieval floruit as Lords of the Isles and Earls of Ross.

INTRODUCTION

THE CASTLE SITE

Aros Castle is located on the east coast of the Inner Hebridean island of Mull, western Scotland. A place called 'Arroys' is shown in this location on the marine chart of Scotland reportedly made during an early 16th-century voyage undertaken by King James V (Nicolay 1583; Adair 1703), and 'Arroÿs Cast.' with a stylised symbol is shown on Abraham Ortelius's (1580) *Scotiae tabula* later that same century. The geography of the site is important, since Aros lies on the east side of a narrow isthmus which joins the island's large landmasses to the north and south, and separates the Sound of Mull from Loch na Keal on the island's west coast (RCAHMS 1980: 173). Indeed, the *Mula Insula* map published in Joan Blaeu's (1654) mid-17th-century atlas, informs us that the district of 'Arrois' encompassed much if not all of this isthmus (Illus 1), on both sides of the wide river from which the castle's name apparently derives (Aahus: mouth of the Aa) (*OPS* 2.1: 323–6). Situated on a steep-sided but flat-topped promontory above a wide bay into which that river discharges, the castle site provides extensive views across the Sound of Mull towards the mainland peninsula of Morvern.

The topography of this maritime region is defined by geological processes and can be usefully divided into three zones separated by the Sound of Mull and Loch Linnhe seaways. The rocky outcrop on which Aros Castle was constructed is composed of basaltic rocks formed during the same Tertiary period of igneous activity which covered much of the rest of the island, and extends in a North Atlantic arc from north-east Ireland, through Arran, Ardnamurchan, Skye and the Faroes, to Iceland and Greenland (Richey et al 1961: 41, fig 17). Processes of erosion have cut through that blanket of Tertiary and Triassic material to form the Sound of Mull, separating the island from adjacent mainland peninsulas and revealing an underlying series of Mesozoic period sediments on the west Morvern coast around

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Illus 1 Detail from the Blaeu 1654 atlas showing the district of Arrois spanning both sides of the bridged river. (Reproduced with the permission of the National Library of Scotland)

Lochaline and Inninmore (Hesselbo et al 1998). To the south-east, these two units are separated from the Old Red Sandstone and Dalradian geologies of Grampian Scotland by the Great Glen fault, which runs along Loch Linnhe to the north of the island of Lismore, and cuts across south-east Mull (Stephenson & Gould 1995: 2–3). From the largely igneous environment surrounding the Aros Castle site, the closest sedimentary deposits of limestone and sandstones available to medieval construction teams are the Triassic series at the Gribun in Mull (15km to the west) and the Mesozoic formations at Morvern (12km to the south-east), while Dalradian metalimestones outcrop around Loch Spelve (south-east Mull) and more extensively on the island of Lismore.

Volcanic geologies often form fertile soils, and agricultural land on the Isle of Mull is dominated by pasture. Indeed, palynological evidence from south-central and northern and western sites suggests that woodland cover on the island has always been limited (Walker & Lowe 1985, 1987; Lowe & Walker 1986; Tipping 1994) and 'Over the past 4000 years, woodland stands have been largely eliminated from the landscape of Mull to be replaced progressively by grass and heathland communities and extensive tracts of ombrogenous blanket mire' (Walker & Lowe 1987: 346). The largely treeless environment surrounding Aros Castle site on the 1st edition Ordnance Survey (1882) map appears consistent with this narrative, and neither the 19th-century (McArthur 1843) nor late 18th-century (McArthur 1791–9) Statistical Accounts for the united post-medieval parish of Kilninian and Kilmore (within which the castle was now situated) mention woodland at all.

Various early modern descriptions, however, suggest that the relatively sheltered east coast of Mull was characterised by more extensive woodland cover. Visiting the island in 1688, William Sacheverell described Mull as 'surrounded by high mountains covered with woods' (1859: 97), and tree depictions on Mull's north-east coast and in Glen More are a conspicuous feature of the Blaeu map (Illus 1). Blaeu (1654: 123) also reported that the island generally contained '*sylvas frequentes*', a description which echoes an anonymous account of 1595 which noted that 'Thair is mony woods … in this Ile' (Skene 1890: 435). Even by the 19th century, the Ordnance Survey 6-inch map (1882) depicts broadleaf woodland along many of the watercourses feeding the Aros River, with more extensive areas of mixed

Illus 2 Oblique aerial photograph of the Aros Castle site highlighting the largely complete east and north walls of the NW block. (RCAHMS 1978 SC_948761 © Crown Copyright: HES)

woodland 2–3km to the south at *Airidh Mhic Dhomhnuill* and *Toll Doire*. These descriptions are consistent with MacVean & Ratcliffe's (1962) reconstruction of Scotland's pre-clearance woodland distributions, which suggested that an oak and birch woodland would have emerged from these igneous geologies away from the island's more exposed western coasts (see also Birks & Williams 1983: 283), although palynological study has suggested the principal arboreal taxa elsewhere on the island have been alder, birch, elm, oak and pine (Walker & Lowe 1985, 1987; Lowe & Walker 1986), a relatively diverse community redolent of the rich semi-natural woodlands surviving in neighbouring Morvern.

By the time the location of 'Arrois Cast.' is identified on Blaeu's (1654) atlas, however, it is probable that the principal buildings constructed on the site were in decline. Characterisation of Aros as a 'castell' in an anonymous early 17th-century document titled 'Houses in the Isles' might suggest these structures remained relatively impressive (Raven 2005: 273), and they were presumably still serviceable in 1608, when a court was held on the site under the jurisdiction of 'Lieutenant over the Isles' Lord Ochiltree (Gregory 1836: 322–4). Ochiltree, however, would subsequently report that 'the house of Aros … was not worthy of the keiping or of ony chargeis or expenssis to be bestowit

thairupoun', and before the end of the century Sacheverell [1688] commented that these structures were 'ruinous, old, useless, and never of any strength' (1859: 99; RCAHMS 1980: 177).

The variation in nomenclature between 'house' and 'castell' adopted by these early modern commentators will resurface in the language of more recent scholars later in this paper. But while these eyewitness accounts clearly suggest that significant dereliction of surviving upstanding structures had taken place during this 17th-century period, historical evidence for the chronology and patronage of initial building construction on the site is much more indirect. Aros Castle emerges into the documentary record in a list of Scotland's western islands, presented in a chronicle widely attributed to an eastern Scottish cleric called John of Fordun, which reports that Mull contains 'two castles, Doundowarde (Dowart), and Dounarwyse (Aross)' (Skene 1872: 40). Recent scholarship has suggested that the 'core narrative' of this text has its origins in a series of late 13th-century manuscripts compiled before 1285 (collectively dubbed *Gesta Annalia I*), although these were collated and expanded upon before 1363 (*Gesta Annalia II*) with further additions up to around 1385 (Broun 2007). The description of Rothesay in the island list as a 'fair and impregnable royal castle' clearly indicates this line is one of those very late 14th-century additions, since this was a Stewart site and Robert II didn't accede to the Scottish crown until 1371 (Duncan & Brown 1957: 203); but it is unlikely that the wider passage is a first-hand 14th-century account and the developmental complexity of the chronicle allows that the castles highlighted might well relate to a much earlier period (Scott 1979). This is certainly true for Rothesay Castle, which is strongly associated with other 13th-century historical evidence (Thacker in prep). It would be imprudent therefore to use absence from the island list as negative evidence for a buildings post-14th-century construction, but the late references within this passage do provide a reasonable *terminus ante quem* (TAQ) for the pre-existence of some kind of structure at those island sites which are described – including 'Dounarwyse'.

Outside of this chronicle, the earliest surviving contemporary documentary evidence identifying Aros relates to various 15th-century charters. This includes a grant from the Lord of the Isles to Hugh MacDonald for lands in Sleat (Skye) and the Outer Isles, which royal confirmation in 1495 reports was initially sealed at Aros, although this probably took place in 1469 rather than the previously suggested 1409 (*ALI*: no. 96; *HP I*: 48 n1, 96–9; *contra RMS II*: no. 2286). John Macdonald also sealed a charter at Aros in 1464 in his capacity as Earl of Ross (*ALI*: no. 86), but the earliest surviving document relating to the site is also the earliest surviving charter from the Lords of the Isles written in Latin; wherein Donald MacDonald confirmed the chapel of the Holy Trinity in Uist to Inchaffray in 1410, from the '*castrum nostrum de dun Aros in Mulle ...*' (*ALI*: no. 18).

Seventeenth-century Clan Donald histories present a narrative which is broadly consistent with this documentary evidence and describe how Aros Castle served as an important centre for the mediation of MacDonald power during their 14th–15th century floruit as Lords of the Isles and sometime Earls of Ross. A preoccupation with status is clearly evident in the account of a 'great feast' held at the castle around 1460, which was attended by 'most of the Islanders, and many of the Mainland People' … including the Laird of Ardnamurchan, MacFinnon and MacQuire … MacLean, MacLeod of Harris … MacNeill of Barra … [and] … MacLeod of Lewis' (*HP I*: 45). Importantly, although the castle is not directly mentioned, this narrative also suggests that an ecclesiastical building of some kind had been constructed in Aros before the late references included in Fordun's chronicle, in a section describing how the early 14th-century clan chief Angus Óg crossed 'the Sound of Mull to Aros [from Ardtornish] to solemnise the festival of Pasch [Easter] there' (*HP I*: 21–2). MacPhail has challenged the identity of the MacDonald protagonist in this story and highlighted some confusion between Angus and his son and heir John in a later passage (*HP I*: 23 n2). But whichever is the case, that the MacDonalds held both sides of the Sound in this early 14th-century

period is consistent with a 1336 royal charter granting a huge area of western Scotland to John MacDonald, including the '*insulam de Mulle*' (*ALI*: no. 1), and a subsequent indenture agreed with the Lord of Argyll (John MacDougall) in 1354 which quitclaimed the '*totam insulam de Mule*' to the MacDonald Lords of the Isles (*HP I*: 75–8). Indeed, most scholars have accepted that the distribution of landholdings evident in these 14th-century documents can be extrapolated back to the mid-13th-century (Duncan & Brown 1957: 205) and suggested that MacDonald control of these island estates followed soon after Bruce's victories of 1306 (*HP I*: 76). No contemporary documentary evidence describing the 13th-century pattern of secular lordship on Mull survives, however, and although we can be confident that the island fell within the formal jurisdiction of Alexander MacDougall's 1293 Sheriffdom of Lorn, Mull is not specifically listed in the legislation text (*RPS*: 17/2/1293) and Iona appears to have been patronised by Clan Donald from an early date.

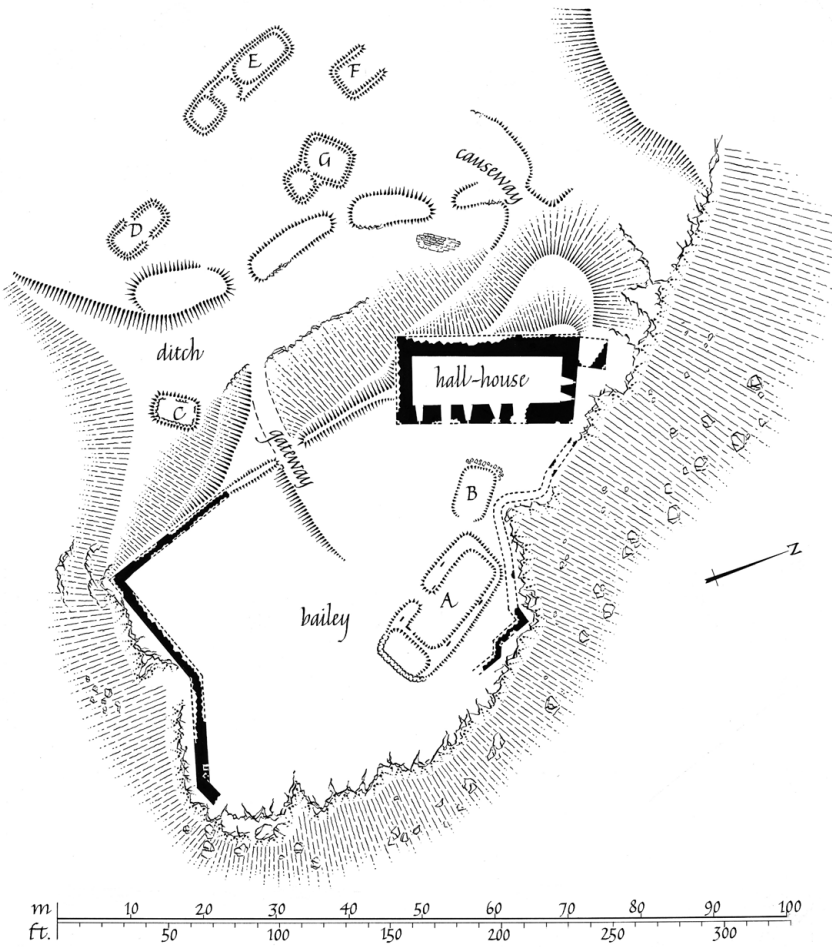
THE CASTLE BUILDINGS

The flat-topped summit of the Aros Castle site displays the upstanding remains of various masonry structures, and the principal ruins as they survived by the early 19th century were described by George and Peter Anderson in their 1834 guide to Scotland's Highlands and Islands. Following a preamble which notes the prevalence of lime-bonded and 'Gothic' arcuate masonry buildings on Scottish castle sites (Anderson & Anderson 1834: 310–11), these authors describe Aros Castle as:

> a massy oblong, measuring thirty paces by twelve, and about forty feet high, and appears to have comprised but a single apartment, lighted by a few large sharp-pointed windows. A spacious esplanade extends from the front of the rock, round which there seems to have been an enclosing wall. Only two walls of the castle and part of a third are standing … (ibid: 313–14).

The Andersons' description is consistent with the late 19th-century Ordnance Survey (1882) map of the area, which shows the outline of a large rectangular structure in the north-west of the site adjoining a level irregularly shaped enclosure to the east. Indeed, since this brief account is also a largely accurate description of the visible remains as they survive on the site today, it would appear that the north-west block at Aros had suffered significant collapse between the 17th and 19th centuries, which then stabilised. Drawings and photographs presented by the RCAHMS (1980: 173–7; Illus 2, Illus 3) illustrate that the south and west walls of the 25.3 × 12.5m north-west building were largely reduced to ground-floor level by the late 20th century, although the north and east walls of this structure remained substantially upstanding to just below parapet height of around 10m (evidenced by surviving sections of wall-walk) with the remains of a multiphase latrine tower protruding from the north-west angle. This concise account characterised the masonry of the building as 'basalt rubble roughly brought to courses and well bonded with pinnings', with architectural features framed by dressings cut from Carsaig (south-east Mull) and Inninmore (Morvern) sandstone (RCAHMS 1980: 174). These features included two entrances and at least five slit windows at ground-floor level with splayed arisses, while the first-floor walls contain the surviving remains of two much larger lancet windows, one of which at least was two-light and retains frame fragments displaying splay, fillet and cavetto mouldings with a central glazing check (RCAHMS 1980: figs 206–7). The RCAHMS account also highlighted the turf-covered footings of two buildings within the adjacent 'bailey' enclosure, including a rectangular structure measuring 20.7 × 9.1m first reported by Hugo Millar and John Kirkhope (1964) during a plane table survey in 1963, although by this later period the surrounding curtain wall was limited to degraded fragments which only survived up to around 1.2m high (RCAHMS 1980: 176; Illus 3).

In the absence of excavation, most previous scholars have adopted a multidisciplinary typological approach to their interpretations of Aros Castle, informed by the surviving historical



Illus 3 Plan drawing of the Aros Castle site presented by the RCAHMS. (DP354985 © Crown Copyright: HES)

evidence relating to the site, its location, and the architectural form of the upstanding masonry buildings. As a result, many of these narratives have implicitly privileged the more substantially upstanding north-west building in their evaluations, and indeed the description presented by the Andersons highlights how some observers have regarded the north-west block alone as the castle proper, with the 'esplanade' enclosure somewhat subsidiary. Focusing on the coastal context, MacGibbon & Ross (1889: 125) suggested that the castle had been 'early secured as a place of defence' due to its 'command' of the neighbouring Sound of Mull but, with a description of the enclosure wall curiously absent, they then characterised the north-west block as a 14th-century 'simple keep' and ascribed the site to their 'Second Period' of Scottish medieval castle construction. Drawing on the historical evidence discussed above, the RCAHMS (1980: 35, 177) characterised the north-west building as a 'hall-house' of 13th- or early 14th-century date, but didn't discuss the chronology of the wall enclosing the 'bailey', before suggesting 'the castle was probably built by one of the MacDougall lords of Lorn, who seem to have held Mull throughout the greater part of the 13th century' (see also *ALI*: xxvii). Echoing this interpretation, Martin Coventry (1995: 55) reported that 'Aros Castle consists of a 13th-century hall house … [which]

… may have been built by the MacDougalls, but at the beginning of the 14th century … passed to the MacDonald Lords of the Isles'.

The contrasts in 'castle' and 'house' descriptors employed in these various publications parallel those of earlier accounts, as we have already noted, but also reveal interpretive tensions around the various functions surviving buildings were expected to serve in different periods; and these distinctions have important epistemological and chronological implications. Indeed, the 'hall-house' nomenclature employed by the RCAHMS above emerged into Scottish scholarship during the 1950s (Stell 2015), and interestingly, given the primacy accorded to the north-west block at Aros, a defining feature of this building class was their unenclosed 'free-standing' character (Cruden 1960: 91; cf Sweetman 1998: 14). It is salient, therefore, that Millar & Kirkhope (1964) were well aware that the area to the east of the multi-storey block had been enclosed when they initially imposed this hall-house nomenclature onto the north-west building in the early 1960s, while subsequent interpretations of this structure have been supported by comparison with a remarkable range of largely unenclosed buildings from across the country. The RCAHMS, for example, compared the building to another of MacGibbon and Ross's 14th-century 'simple keeps' at Ardtornish Castle (Morvern) and suggested these buildings represented 'two of the largest known Scottish hall-houses' (RCAHMS 1980: 35). Dunbar (1981: 92) then argued that a more refined late 13th- or early 14th-century constructional chronology was likely and, following Simpson (1961), compared the north-west block to three very widely distributed Scottish 'hall-house' buildings surviving at Rait (Moray), Tulliallan (Fife) and Lochranza (Arran). Taking a more regional approach and applying his own 'hall-castle' terminology, Tabraham (1997: 37) situated Aros within an Argyll group which otherwise included the 'free-standing' structures of Carrick and Skipness, and noted that many of these buildings are thought to range between the late 13th and late 14th century.

Where greater interpretive weight is placed on historical sources, however, this can raise uncertainties as to which structure or even site is being referred to. David Sellar's (2000: 202–4) suggestion that Aros was one of the three castles King Alexander II insisted the MacDougalls surrender in 1249, for example, clearly situates significant construction within the early 13th century or earlier and is the earliest interpretation of the site considered thus far. But while reference to the RCAHMS discussion of the north-west block implies that this is the building concerned, that association is not unequivocal. Indeed, outwith the architectural-historical paradigms adopted by most previous scholars, very little physical evidence has been presented to support the 13th- and/or 14th-century constructional interpretations imposed on the site, and discussion of the relationships which might exist between its constituent buildings has been limited. The RCAHMS (1980: 174–6) did usefully highlight the lack of bonding between the north-west garderobe tower and main body of the north-west block at first-floor level, to suggest that the former structure had been partially reconstructed, and their interpretation that this tower was 'evidently an original feature of the castle' at least implies that the building is otherwise single phase and primary. But there is no discussion of potential relationships between these structures and the more fragmentary enclosure walls in this account, and physical evidence for the constructional chronology of the north-west building itself is limited to the use of timber embrasure lintels suggested to represent 'a method of construction frequently employed in West Highland castles of 13th-century date'.

Subsequent discourse, however, was already largely prefigured by the survey summary presented by Millar & Kirkhope (1964) which reported that 'the masonry of the hall-house is of the West Highland style, seen at Mingary etc', while the first-floor windows had 'been of late Pointed form, having a central branching mullion, similar to those at the W. end of St Andrews Cathedral, Rait Castle, and St. Brendon's Chapel, Kintyre'. Indeed, Ian Fisher (2005: 91; Dunbar 1981: 49) would also turn to the chapel of Kilbrannan at Skipness for comparison to suggest that the first-floor windows in the north-west

block at Aros were late 13th century at the earliest (Fisher 2005: 91; Dunbar 1981: 49), and comparative analysis of masonry styles prompted David Caldwell and Nigel Ruckley (2005: 107) to argue that the enclosure wall was the earlier of the two upstanding castle structures surviving on the site. Evidence for Caldwell & Ruckley's (2005: 120–1 n36) suggestion that the late 14th-century royal castle at Dundonald in Ayrshire may have been the archetype for construction of the north-west block at Aros is essentially architectural-historical, and limited to their 'superficial resemblance' and 'almost identical … size', as well as a familial relationship between its patron King Robert II and John Macdonald (first Lord of the Isles). But this also very effectively draws attention to the lack of unequivocal evidence for an earlier constructional date, and currently represents the youngest chronological interpretation for construction of this medieval building in the Aros Castle historiography.

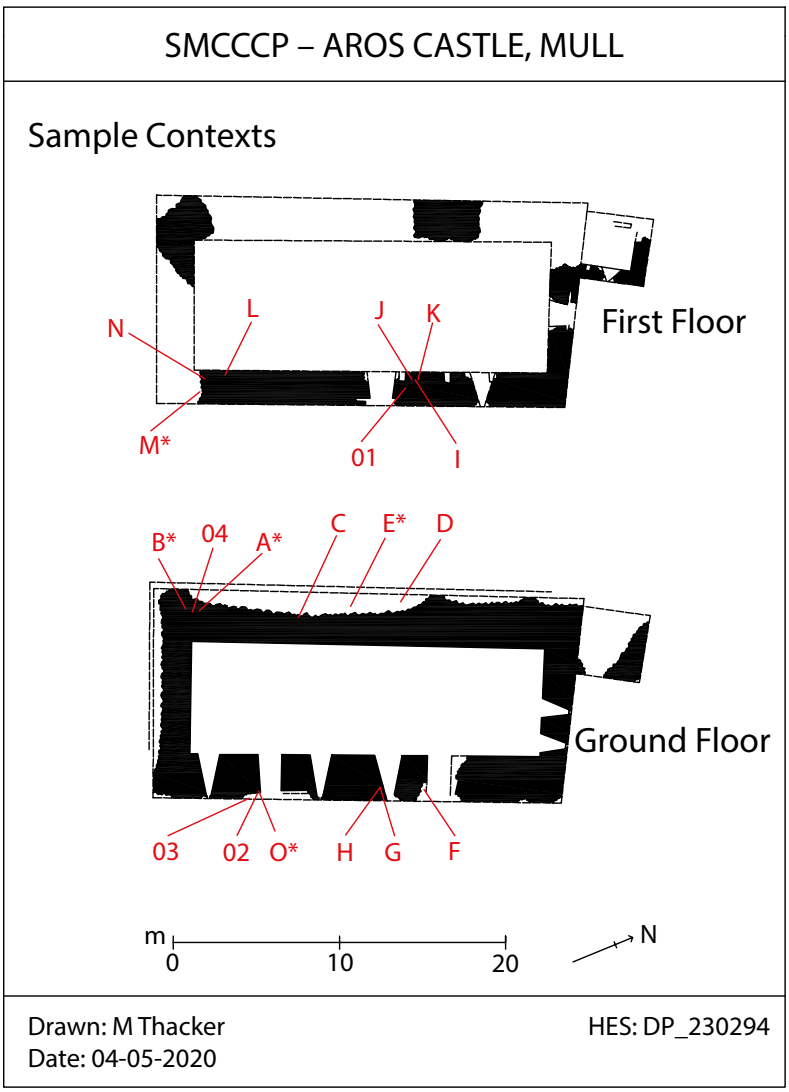
These 21st-century discussions now appear as heirs to Millar & Kirkhope's archaeological approach to the site although, with the castle at Aros situated some miles from the medieval parish church site of Kilcolmkil (*OPS* 2.1: 323–6), it is notable that the RCAHMS (1980: no. 266, 128–9) also ascribed a 13th-century interpretation and probable Inninmore provenance to dressed sandstone architectural fragments surviving at the nearby burial ground and chapel site of *Cill an Ailean*. Indeed, *Cill an Ailean* is located only 1.8km to the west-north-west and, in the absence of evidence for an ecclesiastical building on the castle site itself, may well be the Aros chapel within which Angus Óg MacDonald was suggested to have celebrated Easter – after crossing the Sound from Ardtornish in the early 14th century. The comments of the RCAHMS on potential quarry sources increase in significance with the re-emergence of a materials turn across Scottish archaeological discourse, but the continued lack of independent chronological evidence relating to construction at Aros Castle is salient, and it is against this background that the site was included within the pilot phase of the Scottish Medieval Castles & Chapels C14 Project (SMCCCP). Following recent lab-based analysis of materials from another putative 'hall-house' structure at the Argyll site of Castle Fincharn (Thacker 2017; 2020a), the main aim of this study was to investigate how such analyses might inform our interpretations of the north-west block at Aros Castle and to assess the potential for further work on the site.

METHODS

The emerging methodology adopted during this pilot-phase study was predicated on lab-based analysis of upstanding material samples from contexts informed by an initial programme of masonry survey (Thacker 2016a). These lab-based investigations included: petrographic analysis of thin sections prepared from all mortar, stone and aggregate samples; archaeobotanical analysis of all mortar entrapped relict limekiln fuel (MERLF) samples; and radiocarbon analysis of a selected MERLF sub-assemblage.

Masonry survey at Aros Castle was limited to observations made from ground level, although the turf-covered debris filling the inside of the north-west block allowed access to some higher levels of masonry internally. The combination of substantial upstanding survival and complete collapse which characterises this structure was also a significant advantage in allowing examination and sampling of surviving masonry materials from exposed wall core and facing contexts.

The location of selected in-situ samples was hand-measured in three planes (x, y and z), from fixed building features and datum lines on each elevation (ESM 2.0), with aggregate sample contexts recorded by handheld GPS. Fixed in-situ samples were removed using hand tools only and all samples were placed in sealed and labelled sample bags and stored in rigid containers. The sample assemblage included four fragments of mortar (ACM.01–04) and 15 fragments of probable MERLF from fixed in-situ features within the north-west block (ACM.A–O; Illus 4). Two fragments of stone (ACM.S1 & ACM.S2) and single fragments of mortar (ACM.05) and MERLF (ACM.P) were also collected from loose ex-situ locations probably associated with this same



ILLUS 4 Ground-floor and first-floor plan drawings of the north-west block at Aros Castle with in-situ sample location measurements plotted. Sample codes have the ACM prefix removed and those marked with an asterisk represent MERLF fragments selected for radiocarbon analysis. (Plan drawings after RCAHMS 1980 DP_230294 © Crown Copyright: HES)

building. All in-situ potential MERLF samples and three of the four in-situ mortar samples were removed from core masonry contexts, with a single mortar fragment (ACM.03) also removed from the wall face (bedding context) to enable further comparative analysis. A loose fragment of mortar apparently consistent with material visible within the enclosure wall was collected from the ground adjacent to that feature (ACM.06) and two representative samples of aggregate were collected from the nearby foreshore (ACM.B1 & ACM.B2).

Consolidated and slide-mounted 30μm thin sections were prepared from all mortar, stone and aggregate samples by Mike Hall (University of Edinburgh) and examined in polarised light

using a Leica DMLM polarising microscope with image capture by LAS V4.0 software. Archaeobotanical analysis of the MERLF assemblage was undertaken with Mike Cressey (CFA Archaeology, Musselburgh) and included fracturing of wood-charcoal fragments to expose transverse sections for examination in reflected light to ×40. Samples were identified to genus level with reference to standard anatomical literature (Schweingruber 1990), morphology was characterised, and an estimation of age was suggested.

Five wood-charcoal samples from the wider MERLF assemblage were selected for radiocarbon analysis on the criteria of short-lived taxonomy and building context, and all selected samples were single entity fragments removed from in-situ constructional mortars in wall core contexts in the north-west block. This sub-assemblage was submitted to the Scottish Universities Environmental Research Centre (East Kilbride) where the samples were subject to acid-base-acid (ABA) pretreatment and graphitisation, followed by AMS radiocarbon analysis (Dunbar et al 2016). For this report, radiocarbon determinations have been calibrated by the probability method against the IntCal20 atmospheric curve (Reimer et al 2020), using OxCal v4.4 software (Bronk Ramsey 2009).

RESULTS

MASONRY ANALYSIS

The structural remains encountered at Aros Castle were consistent with those reported by previous authors, with the site dominated by the upstanding east and north walls of the north-west block and its protruding north-west garderobe tower. The external faces of the more fragmentary south and west walls, however, are now also obscured by plant growth (Illus 5).

The masonry of this structure is lime-bonded and fragments of mortar surviving to 35mm thick indicate all wall faces were previously coated (including, at least partially, the sandstone dressings). The loss of that coating material has revealed stonework generally comprised of three different igneous rock types, with larger blocks of fine black basalt, smaller fissile pinnings and snecks of a coarser brown dolerite/gabbro and some minor use of rounded red granite in core contexts. Most of the stone dressings are now missing, but the surviving evidence suggests all main walls, windows and doorways were framed with dressed sandstone and occasional blocks are also evident in general wall face and core contexts. This includes a coarse-grained poorly sorted sandstone with some exposed quartz grains ranging up to 12mm, as well as a much finer white coloured material, suggesting sources deriving from at least two different geological sources.

A similar range of stone-emplacement techniques is evident in the north and east of the main building and north-west tower (Illus 6, 7 & 8). The lowest courses of these features have been constructed of very large basalt rubble blocks surrounded by smaller fissile snecks and pinnings in reasonably accurate formal courses 400–500mm high. In the external face of the east wall, these courses rise from south to north parallel to the external ground level and are coeval with all ground-floor sandstone windows and the south ground-floor entranceway. A cross-sectional view of this wall face reveals that the face stones of these basal courses are often massive blocks, which bond into the wall from 150mm to over 400mm deep in an alternating pattern of stretchers and bonders. The wall face is thereby keyed into the wall core, where the rubble stone also displays a consistently bimodal and layered distribution comprised of large blocks levelled-up with much smaller stones. The mortared course levels visible in the external face of this wall extend back through the rubble core, such that two to three bimodal core layers have been required to reach the same course height in these lowest courses. This core layering is also visible at a higher level in the east wall, where internal face blocks have been lost, and can be examined in some detail in a large block of masonry tumble located to the west of the building – which has presumably fallen from the now collapsed west wall (Illus 9; ESM 1.0).

ILLUS 5 The north-west block at Aros Castle from the west. Scale 500mm

ILLUS 6 External east elevation of the north-west block at Aros Castle. Scale 500mm/2m

The loss of almost all external face blocks precludes characterisation of the masonry style adopted in the south and west walls of this north-west building, and any direct stratigraphic relationship with the more substantially upstanding east and north walls was obscured by large

ILLUS 7 Area of external east elevation highlighting assortment of masonry styles at ground-floor and first-floor height. Scale 500mm/2m

ILLUS 8 External north elevation of north-west block. Note larger blocks in lowest courses

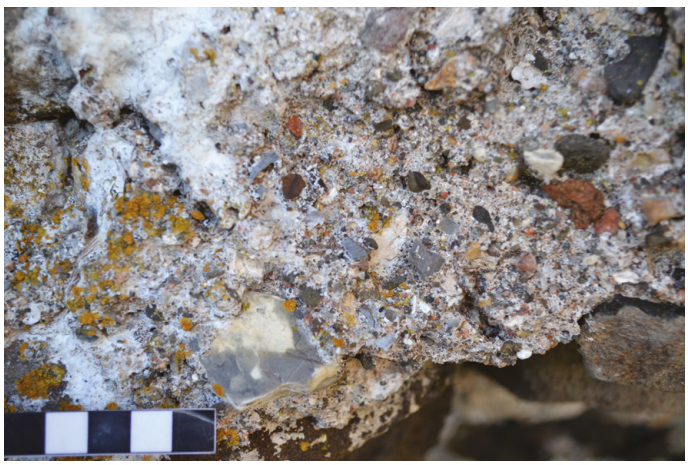
areas of collapse and overgrowth at the south-east and north-west angles. The collapse has exposed large volumes of constructional mortar, however, and superficial in-situ examination suggests these are compositionally consistent throughout the lower courses of the building. A striking textural contrast is evident between the mortar at the face of the east wall (which appears relatively fine and well-bound to a depth of around 200mm) and the mortar surrounding the deeper core rubble (which appears more coarse, open-textured and voided), but the overall compositional consistency, depth of mortar at the wall face, and lack of clear stratigraphic horizons suggest that these textural contrasts are likely to have resulted from different post-deposition taphonomical pressures rather than multiperiodicity. This primary mortar is labelled Mortar 1 and described below:

- General description: Mortar 1 is a distinctive and yellow coloured lime mortar.
- Carbonate inclusions: Mortar 1 contains a high concentration of large probable limestone inclusions to 40mm+. These inclusions display a range of characteristics from sub-angular grey-blue clasts with visibly crystalline texture to more highly altered sub-rounded clasts (Illus 10).
- Non-calcareous inclusions: Mortar 1 is lithic-tempered with a poorly sorted mixture of rounded/sub-rounded lithic clasts to 30mm.
- Carbonaceous inclusions: Mortar 1 contains a high concentration of carbonaceous probable relict limekiln fuels, at least some of which present botanical characteristics consistent with wood-charcoal.

Illus 9 Large fragment of masonry tumble to the west of the north-west block. Sample ACM.S2 was collected from the loose rubble at the foot of this fragment

A change of technique is evident in the external face of the east wall between the ground-floor slit windows and the much larger first-floor window, wherein the stone has been more irregularly laid, with smaller rubble blocks, which eventually then resolves to more regular undulating courses (Illus 6 & 7). Viewed from inside the structure, the mortars associated with this higher masonry present high concentrations of probable limestone and wood-charcoal limekiln relicts similar to Mortar 1, but some locally high concentrations of discoloured shell fragments (*C edule* and *O edulis*) are visible in some locations, including around the skewed north-east ground-floor entranceway. These carbonate materials can appear contextually discrete and compositionally mutually exclusive, although elsewhere an intermixing of shell-rich and limestone-rich materials was noted.

The masonry of the enclosure wall is challenging to characterise, due to a combination of fragmentary survival and surrounding plant growth. This structure is also lime-bonded, however, and where core mortar is visible this appears consistent and superficially similar to Mortar 1 of the north-west multi-storey building. The occasional use of sandstone blocks in the wall face of this enclosure wall is also notable.



Illus 10 Mortar 1 in core of east wall of north-west block. Note the large sub-angular probable limestone kiln relict close to the scale strip. Scale 10mm

PETROGRAPHIC ANALYSIS

TABLE 1
Summary of mortar sample thin section evidence

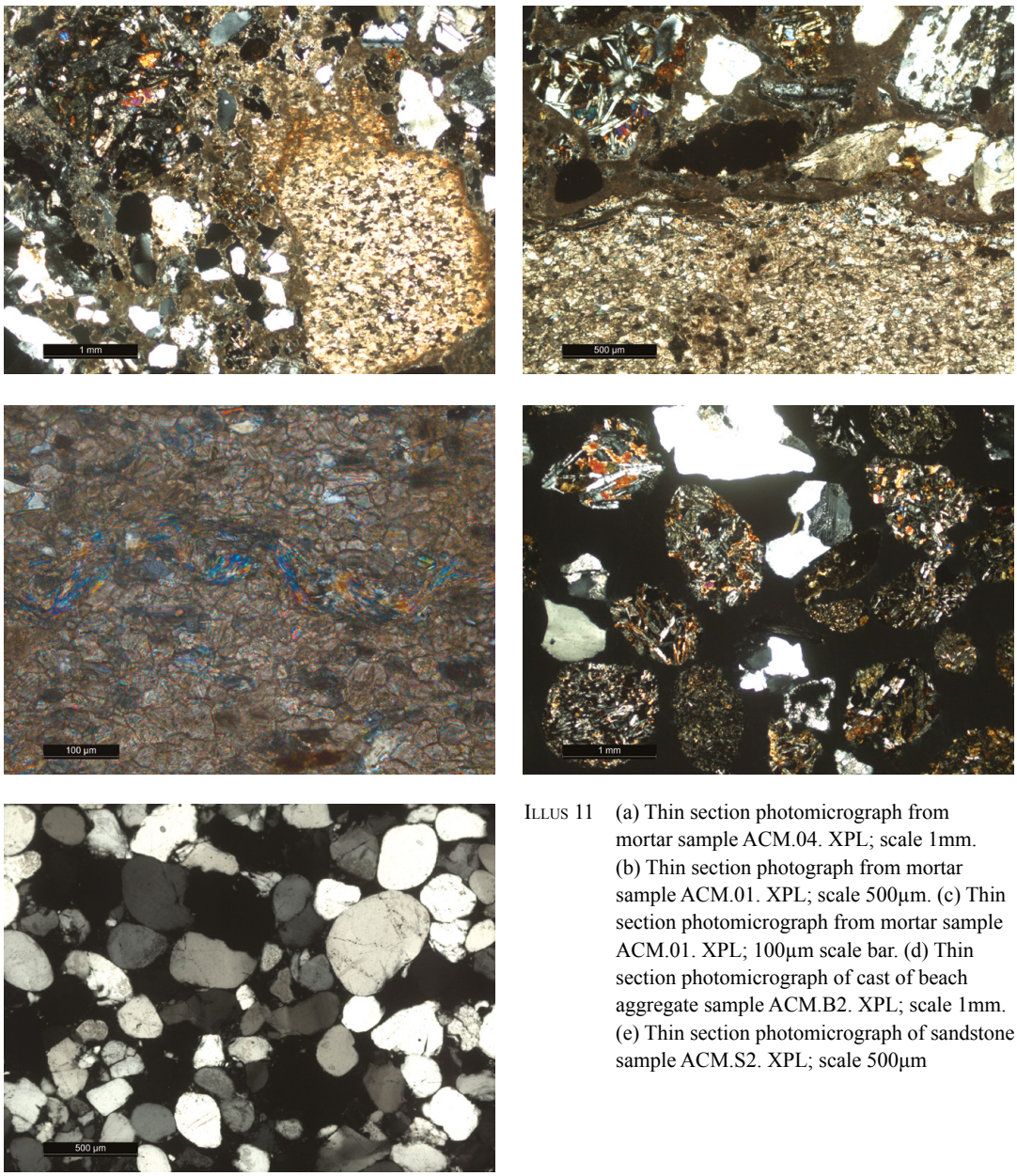
Sample code	*Carbonate inclusions*		*Non-calcareous lithic inclusions*	*Carbonaceous inclusions*
	Geogenic	*Biogenic*		
ACM.01	Metalimestone with altered sparry veining and oriented quartz and mica intraclasts	None	Poorly sorted sub-rounded igneous rocks and minerals to 5mm. Basalt/gabbro, granite; quartzose	Low concentration wood-charcoal
ACM.02	Elongate metalimestone with micritic grain boundaries and veins, and oriented quartz and mica intraclasts	None	Poorly sorted sub-rounded igneous rocks and minerals to 12mm. Basalt/gabbro, granite	None noted
ACM.03	Elongate sub-angular to sub-rounded metalimestone with quartz and mica intraclasts and altered micritic textures	None	Poorly sorted sub-rounded igneous rocks and minerals to 12mm. Basalt/gabbro; micaceous quartzose; quartzofeldspathic	None noted
ACM.04	Sub-rounded/irregular, elongate and highly altered metalimestone with quartz, mica and some calc-silica reaction products	None	Poorly sorted sub-rounded igneous rocks and minerals to 14mm. Basalt/gabbro, micaceous quartzose	Low concentration wood-charcoal
ACM.05	Metalimestone with sparry veining and altered textures	n/a	n/a	n/a
ACM.06	Sub-angular/irregular metalimestone with quartz and mica intraclasts. Highly altered micritic textures	None	Poorly sorted sub-rounded igneous rocks and minerals to 7mm. Basalt/gabbro, granite, schist	None noted
ACM.B1	None	None	Poorly sorted sub-rounded igneous rocks to 12mm. Basalt/gabbro; granite; schist	None
ACM.B2	None	None	Well-sorted sub-rounded igneous rocks and minerals to 4mm. Basalt/gabbro, micaceous quartzose grains	None

TABLE 2
Summary sandstone sample thin section evidence

Sample code	*Summary description*
ACM.S1	Sub-feldspathic arenite; moderately poorly sorted angular/sub-rounded quartz with feldspar, mica and rock grains from 0.05 to 0.6mm. High concentrations of iron oxides/clay/organic material
ACM.S2	Quartz arenite; poorly sorted, rounded/sub-rounded and often fractured quartz from 0.2 to 1.6mm. Very low levels of iron oxide (Illus 11e)

Thin section descriptions are presented in Supplementary Files (ESM 3.1–3) and are briefly summarised below and in Tables 1 and 2.

All mortar thin sections displayed composite materials composed of a fine (lime) carbonate matrix supporting a poorly sorted range of carbonate and non-calcareous materials, with some carbonaceous inclusions also noted. All mortar thin sections are included with variously high concentrations of geogenic carbonate clasts which present a spectrum of evidence for textural alteration (Illus 11a–b). Where least altered these clasts are more angular and retain a polycrystalline texture, dominated by oriented elongate calcite crystals separated by triple-point junctions, included with a low concentration of fine quartz



Illus 11 (a) Thin section photomicrograph from mortar sample ACM.04. XPL; scale 1mm. (b) Thin section photograph from mortar sample ACM.01. XPL; scale 500µm. (c) Thin section photomicrograph from mortar sample ACM.01. XPL; 100µm scale bar. (d) Thin section photomicrograph of cast of beach aggregate sample ACM.B2. XPL; scale 1mm. (e) Thin section photomicrograph of sandstone sample ACM.S2. XPL; scale 500µm

and mica (Illus 11c) and cut by wider veins of coarser calcite. Evidence for alteration typically includes progressive loss of angularity, crystal structure, and the associated optical properties (initially at grain boundaries and along veins), to form sub-rounded and irregular grains composed of very fine (cryptocrystalline) brown coloured carbonate material. As this micritic carbonate approaches optical continuity with the surrounding (lime) matrix, so the grain boundaries become more incoherent and ultimately the distinction between relict lime-source and mortar matrix is lost. This range of textural evidence is consistent with a quarried metalimestone lime source (cf Hughes & Cuthbert 2000).

The rounded (detrital rather than quarried) shape and predominantly igneous character of the non-calcareous component in all these mortar thin section grains is consistent with the aggregate samples collected from the nearby foreshore (Illus 11d). No marine shell materials (altered or otherwise) were noted in these sections, and the lack of metalimestone evidence in these foreshore materials is consistent with interpretations that the evidence in the mortar samples represents its use as a lime source.

Two mortar thin sections also presented evidence of carbonaceous inclusions and in both cases these were characterised as wood-charcoal probable MERLF fragments. No evidence for an alternative fuel source was noted in the assemblage.

The stone thin sections present clearly contrasting microstructural textures, suggesting they have been quarried from different lithostratigraphic sources (Table 2).

ARCHAEOBOTANICAL ANALYSIS

The MERLF assemblage is completely dominated by fragments of wood-charcoal and a narrow range of four different taxa were identified (Table 3). This includes: 50% (8/16) *Betula* sp, 25% (4/16) *Fraxinus* sp, 12.5% (2/16) *Corylus* sp and 12.5% (2/16) *Quercus* sp. Fourteen of these fragments were characterised as roundwood (all except ACM.H and ACM.J) although no terminal ring or bark evidence was noted.

TABLE 3
Summary of MERLF sample assemblage evidence

Sample code	*Taxa*			
	Betula	*Corylus*	*Fraxinus*	*Quercus*
ACM.A*	×			
ACM.B*	×			
ACM.C			×	
ACM.D			×	
ACM.E*		×		
ACM.F	×			
ACM.G		×		
ACM.H			×	
ACM.I	×			
ACM.J				×
ACM.K	×			
ACM.L				×
ACM.M*	×			
ACM.N			×	
ACM.O*	×			
ACM.P	×			
Total	**8**	**2**	**4**	**2**

RADIOCARBON ANALYSIS

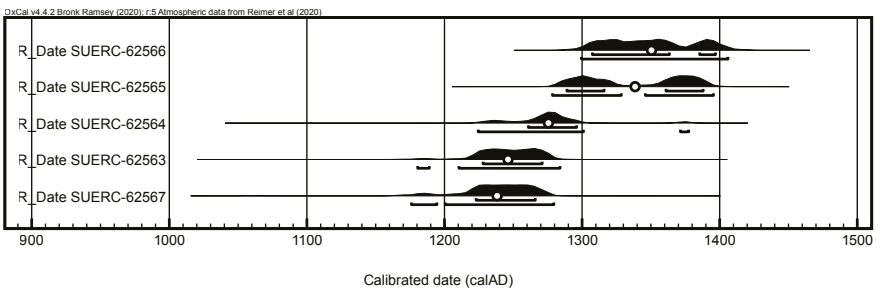
The five MERLF samples selected for radiocarbon analysis returned determinations ranging between 804BP ± 34 (ACM.O; SUERC-62567) and 607BP ± 34 (ACM.M; SUERC-62566) (Table 4). The dataset is not statistically consistent at 5% significance level (T′ = 24.6, T′(5%) = 9.5, ν = 4) (Ward & Wilson 1978) and these determinations calibrate to a range of date distributions (Illus 12); from 1170–1280 cal AD (95% probability) probably 1220–1270 cal AD (68% probability; SUERC-62567; ESM illus S4.5), to 1290–1410 cal AD (95% probability) probably 1300–1400 cal AD (68% probability; SUERC-62566; ESM illus S4.4).

DISCUSSION

Interpretation of the medieval built environment generally relies on evaluating the relationships

TABLE 4
Site context, sample character and radiocarbon results returned by selected MERLF samples from the north-west block at Aros Castle

Site context			*Sample character*			*Radiocarbon results*			
Phase	*Feature*	*Code*	*Taxa*	*Annual rings*	*Terminal ring*	*Lab code*	*$d^{13}C$ (‰)*	*^{14}C age (BP)*	*Calibrated date ranges (cal AD)*
1	West wall ground floor	ACM.A	*Betula*	≤10	No	SUERC-62563	-25.8	787 ± 34	1220–1280 (68%) 1180–1290 (95%)
1	West wall ground floor	ACM.B	*Betula*	≤10	No	SUERC-62564	-26.9	736 ± 34	1260–1300 (68%) 1220–1380 (95%)
1	West wall ground floor	ACM.E	*Corylus*	7	No	SUERC-62565	-26.3	657 ± 34	1280–1390 (68%) 1270–1400 (95%)
1	East wall first floor	ACM.M	*Betula*	4	No	SUERC-62566	-25.4	607 ± 34	1300–1400 (68%) 1290–1410 (95%)
1	East wall ground floor	ACM.O	*Betula*	4	No	SUERC-62567	-26.6	804 ± 34	1220–1270 (68%) 1170–1280 (95%)



ILLUS 12 Plot of unmodelled calibrated radiocarbon dates. Arranged in date order

between different types of evidence and constructing a narrative underpinned by variously explicit or implicit assumptions. Although working in a historical period, contemporary documentary evidence describing the construction of a particular medieval building is rarely encountered, and so we are generally concerned with *consistencies* between wider historical narratives, landscape contexts, indirect documentary sources, art-historical typologies, architectural comparanda, and the determinations returned by lab-based independent analyses such as radiocarbon dating. Critical evaluation of the physical scale (region, site, building, feature, sample, thin section or microscopic grain) and relative chronology of the evidence is fundamental to wider interpretation, and is the focus of the following discussion.

On a very broad scale, the architectural-historical relationships between Scottish castles and national events were often predicated on the perceived martial character and coastal locations of these buildings, which were frequently suggested to have enabled defence or 'control' of the adjacent seaways (cf Raven 2005: 278–9). Informed by widespread evidence for pointed Gothic architecture, for example, Anderson & Anderson (1834) suggested these castle buildings were

associated with the increasing power of the Scottish crown and regional lords following the late 13th-century collapse of Norwegian influence in the region, while the 14th-century interpretation of the north-west block proposed by MacGibbon & Ross (1889: 125) was informed by an architectural model in which such Scottish 'keeps' represented a regressive return to Norman architecture commensurate with a country 'impoverished by war and famine [and] … reduced to great misery' (MacGibbon & Ross 1889: 16–19). The RCAHMS (1980: 173) suggestion that particular architectural features of this structure were designed to mitigate the vulnerability of this 'strategic' site to landward assault reveal that Aros Castle was still being interpreted within a military paradigm in the late 20th century, although the role of castles as centres of regional administration is more likely to be emphasised in this latter period. Indeed, this allowed the RCAHMS (1980) and Munro & Munro (*ALI*: xxvii) to draw upon early to mid-14th-century charter evidence relating to control of the island of Mull, to suggest that Aros Castle was a 13th-century MacDougall construction, even though the site itself is not recognised in contemporary MacDonald charters until the early 15th century and Fordun's chronicle remains the earliest direct castle reference.

The entry in this chronicle therefore provides a valuable historical TAQ for castle construction at Aros; but it is not currently possible to demonstrate that this process began much before the late 14th century on documentary evidence alone (cf Stell 2006), and remaining uncertainties regarding the constructional sequence on site limits interpretation further. If the enclosure walls were constructed before the north-west block, as MacGibbon & Ross (1889) suspected and Caldwell & Ruckley (2005) propose, this would strongly suggest that the enclosure dates to before the castle reference in Fordun's chronicle and allows Sellar's (2000) suggestion that castlellation of the site pre-dates 1249. But if this enclosure wall was constructed during the same period or later than the north-west block, in a relationship similar to developments at Skipness Castle (Graham & Collingwood 1923; RCAHMS 1971: no. 314, 165–78) and demanded by early 'hall-house' classifications, that would suggest the north-west building might pre-date Fordun and put Sellar's (2000) early 13th-century interpretation in considerable doubt. Preliminary analysis of the enclosure walls undertaken during this study suggests that some similar materials have been exploited in both structures, but the lack of secure evidence for a relative chronology currently precludes adopting the *c* 1385 additions to Fordun's chronicle as a TAQ for the construction of either building.

Where historical evidence relating to a building's constructional date is limited, an architectural-typological approach to interpretation is often implemented, whereby the earliest securely dated example of the building type (on another site) is adopted as a *terminus post quem* (TPQ), and chronological precision depends on subsequent design longevity. That buildings dating from the 12th to the 17th century have been classified as 'hall-houses' in Scotland would initially suggest the term has limited interpretive potential, therefore, and it is in any case debatable whether this nomenclature should be applied to the north-west block at Aros Castle, given the probability that the first floor was divided into two rooms (RCAHMS 1980) and relationships with the enclosure wall and other structures remain unresolved (cf O'Keeffe 2014; Dempsey 2017; Thacker in prep). While the hall-house term does little to inform our interpretations, the various late 13th- to late 14th-century secular structures to which the north-west block has been likened are all reasonable architectural comparanda for this two- to three-storey elongate masonry structure (RCAHMS 1980; Dunbar 1981: 92; Tabraham 1997: 37; Caldwell & Ruckley 2005).

A similar typological issue emerges with art-historical dating of the mouldings displayed in the north-west block window frames, since these are composed of commonly encountered north-west European Romanesque elements, and a lack of later Gothic templates such as the sunken-chamfer (Morris 1978; 1979) limits interpretation. Evidence that the first-floor east window was divided by bar tracery is much more significant, however, since a post-1270 phase at

Elgin Cathedral is the earliest closely datable example of this 13th-century technique surviving in Scotland (Hart 2010; Fawcett 2011: 106, 175), and the supporting evidence associated with the repeatedly cited late 13th- to early 14th-century structures at Rait Castle, St Andrews Cathedral and Kilbrannan is also convincing (Millar & Kirkhope 1964; RCAHMS 1971: no. 277, 112–20; Tabraham 1997: 45; Fawcett 2011: 189–90). Indeed, it is notable that the most useful comparanda for these windows are associated with ecclesiastical buildings, which can often be ascribed to more precise constructional chronologies on art-historical and architectural-historical grounds, and the high quality of the detailing at Kilbrannan is all the more striking since the same team of masons are suggested to have constructed the (secondary) enclosure walls of the neighbouring castle (Graham & Collingwood 1923; RCAHMS 1971: 113; Fawcett 2011: 196). Whether hall, chamber, castle or house, the patron of the north-west block windows at Aros appears to have been drawing on ecclesiastical architecture to display their secular authority, and this building is clearly an uncomfortable fit with the 'meagre' communal accommodation and complete absence of architectural ornament which characterise MacGibbon & Ross's (1889: 19) 'simple keeps'.

The buildings analysis undertaken for the current project revealed no obvious evidence to suggest that these Decorated first-floor windows are inserted features and, although contrasts in the fabric of the building have been highlighted, a taphonomic explanation for these differences (rather than significant multiperiodicity) is currently preferred. It is important to remain aware of the limitations in this evidence currently, since access for this study was restricted to observations from ground level, the south and west sides of the north-west block are very fragmentary, only two ex-situ stone samples were collected, and no shell-rich mortar fragments were removed. But comparative thin section analysis has revealed no significant compositional contrasts in the mortar assemblage removed from the building, and this included examination of in-situ samples removed from core and face bedding contexts (ACM.02 & ACM.03), from west and east wall locations (ACM.04 & ACM.02) and from varying heights (eg ACM.02 & ACM.01). Indeed, the thin section evidence is remarkably consistent across the current mortar assemblage and, with widespread evidence for the sorting and formal layering of rubble stone also strongly suggesting that the wall faces and core have been raised in tandem, it is striking that imported sandstone blocks are evident in both of these more general masonry contexts (Illus 9). Informed by this evidence for structural and compositional consistency, the contrast in mortar texture noted in the lower courses of the east wall of the north-west block can be confidently attributed to a higher rate of post-construction mortar dissolution in the masonry core, and while the localised evidence for high shell fragment concentrations elsewhere in this feature is more problematic, the intermixing of these biogenic inclusions with geogenic probable limekiln relicts suggests that this represents localised contrasts in aggregate temper compositions rather than a (perhaps more chronologically significant) contrast in lime source. Indeed, this evidence suggests that discoloured shell fragments elsewhere should be interpreted with increased caution. The contrast in masonry styles noted in elevation appear to represent a deliberate concern to place the largest blocks in these lowest courses, however, and a somewhat similar pattern of stone emplacement has been noted at the nearby late 13th- to early 14th-century castle of Achanduin (Thacker 2020b). Ultimately, accepting the upper levels of the garderobe tower may have been reconstructed, the main block at Aros Castle is currently regarded as single phase.

A huge quantity of mortar would have been required to bind and coat the massive masonry walls which dominate the upstanding building fabric surviving on the Aros Castle site, and the petrographic evidence examined in this study suggests a metalimestone source was exploited to manufacture building lime for construction of the north-west block and enclosure walls. It is somewhat surprising that no bioclastic textures suggestive of the limestone outcropping in Lochaline were noted in this study, since this material outcrops at a foreshore location relatively

close by (Ordnance Survey 1875), lime manufactured from Lochaline limestone had an excellent reputation in later periods (McLeod 1791–9: 276; McLeod 1843: 169; Thacker 2016b), sandstone quarried from this district was already being used in construction of the north-west block (see below), and administrative control of Morvern and Mull often appears to be held by the same kinship group (at least in the later medieval period). It is probable the metalimestone exploited for mortar manufacture at Aros Castle was quarried from a Dalradian outcrop south of the Great Glen fault and, although prompting further political questions, comparative analysis of the Aros evidence with mortar samples from the castles at Coeffin and Achanduin suggests the island of Lismore is a possible source. Compositional similarities between the non-calcareous temper in the Aros Castle mortars and nearby foreshore aggregates suggest the mortars in the north-west block and enclosure walls were mixed close to the castle site, however, suggesting that quarried limestone was transported to Aros by boat and fired very close by. Indeed, the high proportion of *Betula* in the MERLF assemblage suggests birch wood was the principal fuel used to fire those kilns, and this is also consistent with the ecological evidence from elsewhere on Mull discussed above.

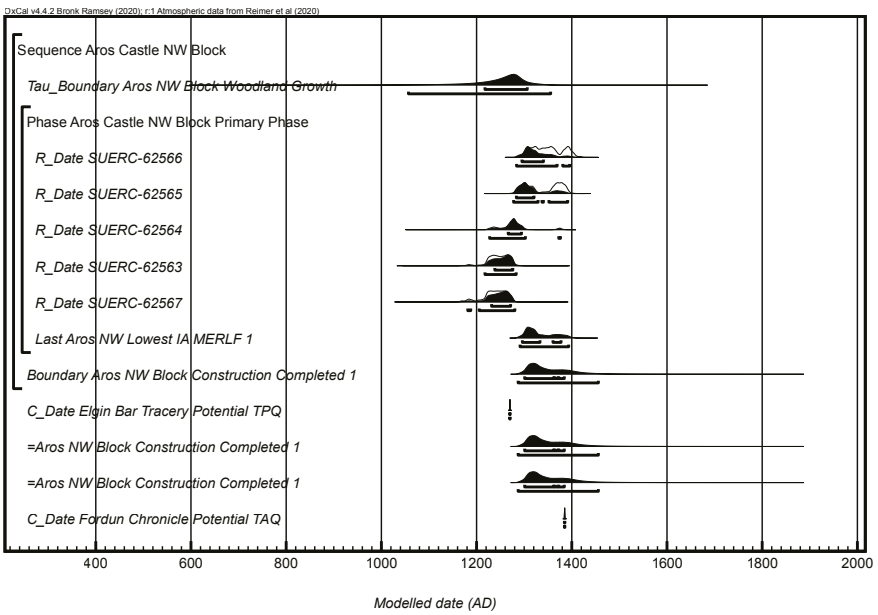
Analysis of the sandstone evidence surviving on the Aros site remains at a preliminary stage, but masonry survey and petrographic thin section analysis of two loose samples associated with the north-west block supports previous interpretations that multiple freestone sources had been exploited (cf RCAHMS 1980: 174) and the microstructural character of sample ACM.S1 appears consistent with on-site interpretations suggesting the ground-floor window dressings were of Inninmore (Carboniferous) provenance (cf Everett et al 2015). The rounded grains which characterise sample ACM.S2 are more consistent with previous descriptions of (Cretaceous) Lochaline White Sandstone, however, and present a textural contrast with ACM.S1 and with the Jurassic sandstones from Carsaig reported elsewhere (Hickman 1961; Albornoz-Parra et al 2015). Given textural variations within these geological sources (Everett et al 2015: 42–3; Albornoz-Parra et al 2015) and widespread reliance on colour and grain size for resource identification (Pettijohn et al 1972), much more comparative analysis on the sandstone evidence from Aros and other SMCCCP sites is required. This evidence does suggest different resources from across the district were being simultaneously exploited by the construction industry in this period, however, and it is notable that recent investigation has also revealed that multiple sandstone sources were used at nearby Lismore Cathedral (Thacker 2019). Indeed, the ex-situ filleted edge-roll mouldings and dog-tooth enrichments discovered at Lismore (in probable Carsaig and Inninmore sandstone) might be further compared with those from the Aros chapel of *Cill an Ailean*.

The hardening of the lime mortar manufactured to construct the north-west block at Aros Castle would have rapidly bound its component materials to the surrounding masonry, providing a direct link between mortar deposition and building construction and precluding later intrusion. Radiocarbon analysis of its MERLF materials is therefore likely to return results which are no later than the completion of the building phase from which they were removed. Increasing estimate precision thereafter relies on evaluating the likely proximity of each determination to the constructional event, and to this end the range of determinations returned by the Aros assemblage clearly highlights the interpretive value of a comparative multiple analyses approach. Indeed, although reasonably short-lived taxa were selected for radiocarbon analysis (in the absence of bark evidence), the lack of statistical consistency in the current dataset clearly suggests that the earlier determinations are affected by residuality, drawing attention to the two latest determinations which calibrate to very similar date ranges spanning the late 13th to early 15th centuries (SUERC-62565 & SUERC-62566; Table 4; ESM illus S4.3 & S4.4). The MERLF samples to which these determinations relate (ACM.E & ACM.M) are both the highest in their respective elevations (ESM 2.4) but derive from different taxa (*Corylus* and *Betula*; Table 3), from core contexts on opposite

sides of the building (Illus 4), and ACM.E was removed from a material consistent with Mortar 1 and has returned a determination which calibrates to 1270–1400 cal AD (95% probability) probably 1280–1390 cal AD (SUERC-62565; 68% probability; Table 4; ESM illus S4.3). A wiggle in the calibration curve has decreased precision in these latest results (Illus 12; ESM illus S4.3 & S4.4), but these are likely to have captured something of the building's construction, and modelling all five determinations in a single exponential phase (Illus 13; ESM 4.2, Model 1) has generated an End Boundary constructional estimate of *1285–1460 cal AD* (*95% probability*), probably *1300–1385 cal AD* (*68% probability*; *Aros Castle NW Block Construction Completed 1*; illus S4.6).

The different types of evidence currently available for our interpetation of the north-west block at Aros Castle are remarkably chronologically consistent (Illus 13). The chronological consistency between the art-historical dating of the first-floor window tracery and the radiocarbon evidence from the surrounding general masonry fabric of this building is particularly striking (ESM, table S4.2) and, since both suggest the building was not constructed until the very late 13th century or later, is perhaps the most significant evidence to emerge from this study. The lack of a clear TAQ to frame the upper end of this building's chronology continues to be a significant obstacle to interpretive precision, although there is a 76% probability (including all of the 68% probability HPD interval) that the constructional estimate generated by Model 1 pre-dates the *c* 1385 additions to the chronicle attributed to Fordun (ESM, table S4.3). Taken together, therefore, documentary sources, architectural comparanda, art-historical features, material sources, masonry style and radiocarbon evidence are all consistent with a very late 13th- or more probable 14th-century constructional date.

Further work is required to establish if earlier constructional fabric survives at Aros Castle,



Illus 13 Plot of distributions and potential TPQ and TAQ historical dates from Model 1. Plotted in OxCal v4.4 (Bronk Ramsey 2009) and calibrated using the IntCal20 atmospheric curve (Reimer et al 2020), the MERLF radiocarbon measurements have been situated within a single bounded exponential phase. The Boundary distribution '*Aros NW Block Construction Completed 1*' represents the estimated date at which construction of that phase was completed

and whether or not the site might be related to MacDougall administration of Mull and the surrounding region. If in the interim we accept the RCAHMS interpretation that the north-west block was divided into a solar and hall, however, there is mounting chronological evidence to suggest that it was within this building that charters relating to lands across the Hebrides were sealed and feasts were held during the 14th- and 15th-century floruit of the MacDonald Lords of the Isles. A bright lime-coated building with traceried windows more commonly seen in larger ecclesiastical buildings during this period, this structure's elevated coastal position on the shores of the Sound of Mull was surely selected as much to be seen as to see.

The current lack of evidence for significant later phases of construction on the Aros site is therefore striking, particularly since the castle continued to be used as a nexus for regional administration in the Isles and nearby mainland following the Clan Donald forfeit. Indeed, the list of clan leaders invited to attend Lord Ochiltree's 1608 court, when the 'house of Aros' was reportedly 'not worthy of the keiping', is resonant of those who under somewhat different political circumstances had attended the 'Great Feast' (perhaps in the north-west block) almost a century and a half earlier. For some, the remains of this once fine site might stand as testament to the rise of the MacDonalds, but the flat-topped promontory on which the castle is situated was still known as *Creag a'Crochadaire* or 'Hangman's Rock' (MacLennan 1925: 104, 107) in the late 19th century (Ordnance Survey 1882), long after both the Lordship of the Isles and the Castle of Dun Aros had collapsed.

CONCLUSION

The above study has presented the first independent evidence relating to the chronology of masonry construction at Aros Castle, and this is remarkably consistent with other types of evidence relating to the site and its surviving buildings. Eyewitness accounts described ruined castle buildings on the site from the 17th century, a site known as Aros Castle can be located on map sources from the 16th century, charter evidence associates a site of this name with the MacDonald Lords of the Isles from the 15th century, a chronicle source indicates a castle with this name existed in Mull by the late 14th century, and surviving art-historical and radiocarbon evidence suggests at least one of the upstanding buildings surviving on the site was constructed during the very late 13th century or later. It remains possible that the Aros Castle site was enclosed in an earlier period, but current evidence suggests the north-west block had a relatively short lifespan which coincided most strongly with the 14th- and 15th-century historical floruit of Clan Donald as Lords of the Isles and sometime Earls of Ross.

Evidence has been presented to suggest building materials from across the region were exploited during the initial construction of this building including: metalimestone from south of the Great Glen fault; sandstones from Morvern and South Mull; and rubble blocks, wood fuel and foreshore aggregates from around Aros itself. The exploitation of materials from all three geographical zones introduced at the start of this paper can be explained, in part, by the predominantly igneous environment surrounding the castle site, but this also hints at the drawing in of resources from across the region in a period when the Sound of Mull and its attendant lime-coated buildings were a significant locus for lordly display.

The investigation described in this paper was a very early SMCCCP study, which once again demonstrated that materials analysis can provide valuable evidence for our interdisciplinary interpretations of Scottish medieval seigniorial buildings. Further analysis of the upstanding structures and materials surviving on the Aros Castle site is now required, to increase precision in the radiocarbon data associated with the northwest block (Thacker forthcoming), further inform our understanding of that building's structural phasing, establish a constructional chronology for the enclosure wall, and confirm the provenance of the full range of masonry materials associated with both structures. Excavation would inform these interpretations still further, but the

unconsolidated upstanding masonry fabric already exposed on the site – a fossilised environment above the ground – still retains significant archaeological potential.

Supplementary material: available online at https://doi.org/10.9750/PSAS.150.1325

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ABBREVIATIONS

ALI: Acts of the Lords of the Isles 1336–1493, 4th series, vol 22. Ed. J Munro & R Munro. 1986. Edinburgh: Scottish History Society.

HP I: Highland Papers I. Ed. J MacPhail. 1914. Edinburgh: Scottish History Society.

OPS: *Origines Parochiales Scotiae: The Antiquities Ecclesiastical and Territorial of the Parishes of Scotland*, 3 vols. Ed. C Innes. 1851–5. Edinburgh: W H Lizars.

RMS II: *Registrum Magni Sigilli Regum Scotorum: The Register of the Great Seal of Scotland AD 1424–1513*. Ed. J Paul. 1882. Edinburgh: HM General Register House.

RPS: *The Records of the Parliaments of Scotland to 1707*. Ed. K Brown. University of St Andrews. http://www.rps.ac.uk/. Accessed 12 December 2019.

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