HISTORIC ENVIRONMENT SCOTLAND | ÀRAINNEACHD EACHDRAIDHEIL ALBA

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STATEMENT OF SIGNIFICANCE

BROCH OF GURNESS (AIKERNESS BROCH)

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Cover image: General view of the Broch of Gurness. © Laurence Winram.

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HISTORIC ENVIRONMENT SCOTLAND
STATEMENT OF SIGNIFICANCE

BROCH OF GURNESS (AIKERNESS BROCH)

Contents

1. SUMMARY

1.1 Introduction

Gurness is an Iron Age monument on Mainland Orkney, comprising the remains of a broch surrounded by a complex of smaller buildings, all within an outer circuit of ditches and ramparts.

Brochs are a prehistoric building type unique to Scotland, and are typified by a circular ground plan with massive drystone walls capable of rising to tower-like heights – although in the case of Gurness, that height has been reduced to about four metres. Intra-mural passages or galleries, stairways and chambers also characterise brochs, and these features at Gurness survive in particularly interesting forms. Brochs began to be constructed (on current evidence) at a date between 400 and 200 BC.

Though usually referred to "The Broch of Gurness", and formerly "Aikerness Broch", the remains on site include much more than the broch itself. It is one of the most complex sites of its type and has produced evidence of use over an extended period, ending in the Viking period.

The site was excavated during the 1930s and taken into State care in 1931 under a Guardianship agreement. During the excavation of what was then a grass-covered mound, a number of later structures were removed to access the underlying broch and the "village" around it. The two most complete of these, a multi-roomed house and part of an elongated rectangular building, have been rebuilt near the Visitor Centre.

The site sits on the edge of a low cliff, looking north across the sea to the island of Rousay: there is a notable concentration of broch sites along the shores of Eynhallow Sound.

The site is accessed by a short walk from a parking area. It is staffed during the summer, with a visitor centre and a small museum containing a selection of artefacts.

(Note: this statement uses "broch" to refer only to the central circular structure, and "site" when referring to the overall assemblage of structures.)

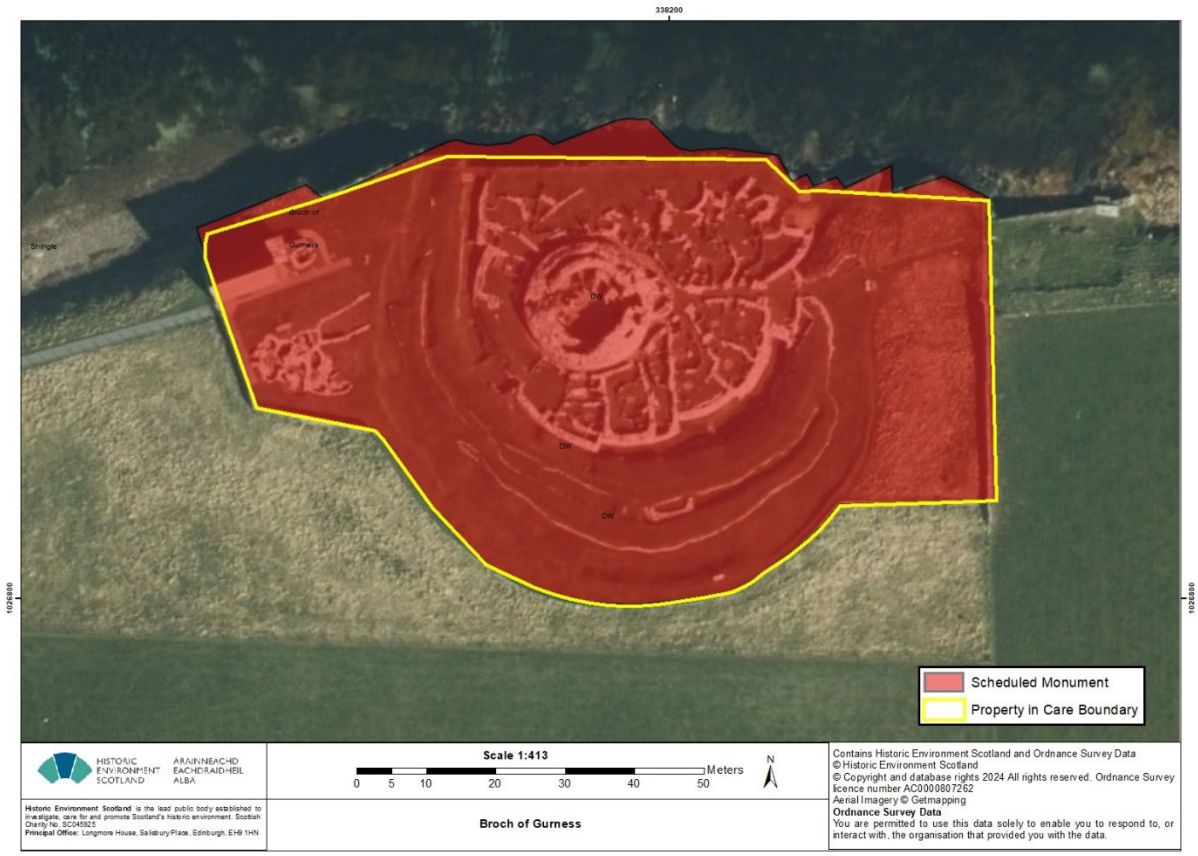

Figure 1: Broch of Gurness Scheduled Area and Property in Care Boundary. For further images, see Appendix 2. For illustrative purposes only.

1.2 Statement of Significance

Gurness is of national importance as one of the first, and the most complex, north Scottish Iron Age sites to be comprehensively excavated. The inter-relationship of the various structural elements has the potential to be of great importance for Iron Age studies, but certain aspects of the construction sequence cannot be firmly established on present evidence.

No direct dating evidence has emerged so far to place a firm date on any aspect of Gurness's original construction, although artefactual finds support a building date no later than the final century BC for the broch itself. It has been suggested that the surrounding ditches and ramparts have a significantly earlier origin than the broch and other structures: this is debatable. It may also be that the deep, stepped, underground chamber or "well" pre-dates the broch.

Within the broch's interior, elaborate stone-built partitions, tanks, stairs and other features are clearly secondary to the broch's construction. Outside the broch, a substantial level area between the broch and the inner ditch contains the remains of at least a dozen smaller structures. These are usually described as houses, though they may also have served other purposes, for example as workshops or as storage. These buildings are

demonstrably later than the broch and, in their final form at least, are also later than the inner ditch around the site: how much later is not clear, in either case.

Important artefactual evidence from the site includes fragments of amphora (storage jar) of a type manufactured in Spain during the 1st century AD, while the final phase of use of the site is evidenced by brooches and other objects which accompanied pagan Viking burials of the 9th or 10th century AD.

The circumstances of the excavation (conducted in the 1930s, under two directors and without comprehensive recording) and the long period which elapsed until an archive-based report was published in 1987, have proved problematic. The lack of firm evidence to determine the early stages of the site's history have led to the existence of alternative site chronologies: the differences between these schemes are potentially of great significance for interpreting the intentions of the builders of the broch and the other elements of the site. These matters are discussed further in Appendix 3.

Key aspects of the site's significance include the following:

- The exceptionally high quality of the masonry of all periods, and in particular the structural use of large upright flagstones – made possible by the good quality of stone available locally as well as by the builders' skills, this has contributed to the survival of many details of architecture which are not represented on the majority of Iron Age sites. (Though it must be borne in mind that much of what is visible has been consolidated so thoroughly as to be almost rebuilt.)
- While the site's layout is not unique, the plan is particularly elaborate, with an outer circuit of partly rock-cut ditches and walls enclosing a sizeable flat area on which the broch and its surrounding features stand.
- The "village" complex surrounding the broch, which, while not without parallel, is one of the most extensive such complexes so far excavated.
- The presence within the broch of an elaborate underground structure or "well", one of a group of such structures which occur on Orkney broch sites (and in one case on a site without a broch[1]) – this may suggest a ritual aspect and may be of significance in respect to the siting of the broch.

The above features all tend to suggest that Gurness may have been of above-average importance during its occupation.

[1] Minehowe, Mainland Orkney

- The architectural details of the broch tower itself, which suggest it may be an early example, at least for Orkney.
- The importance of the remains as they survive and the potential for further exploration to add useful evidence bearing on its construction, occupation and modification over time.
- The site's near-continuous use over approximately 1000 years, including into the period after which Viking settlers first reached Orkney.
- The site's contribution to the field of broch-studies and the Iron Age. For instance, its context, siting and relationship to other archaeological and landscape features can be compared to other sites of similar period (especially as there are several other brochs nearby), the degree to which it typifies, or is exceptional to, the generality of broch sites; and how it has been referenced in developing theories of Iron Age architecture, society and economy, and in particular comparisons between the possible role of brochs in Orkney as opposed to elsewhere.
- Its use and presentation as an Ancient Monument. Gurness has an interesting history of discovery and exploration, which is not fully recorded. The surviving remains testify to a history of well-intended alteration during conservation works, but the incomplete documentation of these efforts offers a warning against reading too much significance into the precise details of the splendid stonework which is visible today.

The following pages give a fuller background to the site and go on to discuss the various aspects of its significance.

A range of Appendices includes a detailed Description of Gurness and the various sequences which have been proposed for it at Appendix 3, and an overview of Brochs – Theories and Interpretations at Appendix 4.

2. ASSESSMENT OF VALUES

2.1 Background

Introduction-Brochs and 'broch villages'

Brochs have been the subject of much study and attempts to understand them have given rise to numerous theories about their genesis, purpose, context and relationships to other Iron Age structures. The best-preserved examples are striking and distinctive sights. For the purpose of this document, the term "broch" is used to refer to what some researchers have called "fully formed" or "tower" brochs.

Broch towers are characterised by their conformity to certain design elements which make them seem a very cohesive group (near-circular ground plan, hollow or galleried wall construction, single narrow entrance passage, staircase within the wall thickness, stacked voids, tower form). Dating evidence is scarce and most reliable dates relate to periods of occupation rather than necessarily of construction. However, recent radiocarbon dates from sites in South Uist and Shetland (sampled within walls or under the structure) indicate construction some time before 100 BC and between 200 and 400 BC respectively.[2] There are no precise broch construction dates from Orkney, but indirect evidence suggests some brochs (including Gurness) were standing at least as early as the first century BC, and probably earlier.

Brochs are a building type unique to Scotland; their remains occur most frequently in the north and west, rarely in the south. It is not known how many brochs were built, so much depends upon survival rates and upon adequate investigation. Estimates for potential broch sites range from 150 – 600 sites; however most have not been investigated and criteria for assessing the sites vary. It is generally agreed that about 80 sites currently identified meet the definition for broch used here, though there may be many more which might yet be proven, if sufficiently investigated.

In some areas, brochs are frequently found to be surrounded by significant external areas of settlement in the form of small houses, often termed "broch villages". This phenomenon is at its most marked in Orkney and eastern Caithness, with two examples in southern Shetland. Elsewhere, such villages seem to be rare, with any external structures confined to just one or two small houses. Gurness has long been seen as the type site for such villages, with at least 12 external buildings.

Gurness also displays one of the finest examples of an outer enclosure: these are not infrequent, with examples occurring in most areas where brochs are found, but usually consist of a single ditch, with or without a wall or rampart. Gurness, with two diches and two ramparts, has one of the most elaborate outer perimeters so far excavated.

There are competing theories as to the social context which gave rise to brochs, and their use and meanings for Iron Age society. As yet there are no agreed conclusions and a fuller account of these themes is given at Appendix 4.

Descriptive overview

Gurness is set above a low cliff on the northern side of the promontory of Aikerness, and overlooks the waters of Eynhallow Sound, which separates the main island (Mainland) of Orkney from the island of Rousay. There are

[2] Parker Pearson and Sharples 1999, 355: Dockrill et al 2015, 59-60

at least ten brochs along the shores of the Sound, including **Midhowe Broch,** which is visible from Gurness.

The northern side of the site has been affected by coastal erosion: if we can assume it was originally more or less symmetrical in plan, then about 25 percent of the total enclosed area has been lost.

The principal elements of the site are as follows (see Appendix 3 for more detail):

- A pair of ditches, the inner one more substantial than the outer, between which lie a pair of two broad walls or ramparts with a narrow space between them (which is not itself a dug ditch).
- A circular broch, which probably stood much taller than it does today, with internal stone-built features. There is evidence that the broch suffered from structural instability and was reduced in height, probably not long after it was built.
- A deep underground chamber or "well", within the broch.
- A "village" of at least a dozen smaller buildings occupying most of a level area immediately around the broch: these abut against each other. The best preserved of these are on the southern side of the broch: they were modified over time and in their final form their outer walls were joined up to form a perimeter wall, which is particularly well-constructed and impressive at either side of the entrance-way which leads through the outer ditches. One small area within the village, on the south side, appears to have been left free of houses from the beginning. The perimeter wall around the village is built out over the inner lip of the inner ditch.
- Two structures which were removed during excavation and reconstituted on the west side of the site.
- A stone-lined Viking grave, on the east side of the site.
- A small 1930s building which houses a Visitor Centre and museum, and other modern features such as information panels and ramped paths.

British Empire connections

Recent research into the relationships between the Properties in Care of Scottish Ministers and the British Empire[3] has highlighted that the Broch of Gurness has 'property' empire connection[4] as it was owned by the Balfours of Trenabie. The Balfours of Trenabie obtained significant wealth, and subsequently land, through the involvement of John Balfour (1750-1842) with the East India Company. On his return to Britain in 1790 he is thought to have doubled the already extensive fortune he had made while in the Company's service in southern India. On his death, the bulk of his £180,852 fortune passed to his great-nephew David Balfour (1811-87), who invested heavily in agricultural improvements on his estates. From the 1870s, the estates became divided between different members of the family. By 1874, Colonel James William Balfour, who was part of the family, was in possession of Aikerness estate, where the broch was located. There can be no doubting that the passing on of the empire-derived wealth did play a role in preserving Orkney's ancient heritage. David Balfour, for example, took particular interest in Maeshowe, with subsequent generations placing other sites into care.[5] To what extent this influenced the preservation of the Broch of Gurness is unclear.

Discovery[6]

Gurness was believed to be a broch from the early days of antiquarian study (it appears on Petrie's 1866 list of Orkney brochs[7]), but it was then a rather shapeless grass-covered mound. In 1929 Robert Rendall, working with the tenant farmer, demonstrated its character by digging into the top and fortuitously striking the western wall of the broch, at the point where the later stone stair rises up against the inside wall of the broch. Rendall followed the advice of Dr Hugh Marwick, Secretary of the Orkney Antiquarian Society, not to expand his excavation but to seek expert help. James S. Richardson, the Inspector of Ancient Monuments for Scotland, was invited to visit the site, which he did in June or July 1929.

Excavation and structural consolidation

With Richardson's assistance, a donation was secured to begin investigation (£200 from T. B. Macaulay, founder of the former Macaulay Land Research Institute near Aberdeen[8]) and the Society of Antiquaries of

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[3] Full report can be downloaded from HES website: Surveying and Analysing Connections between Properties in Care and the British Empire, c. 1600-1997 (historicenvironment.scot)

[4] 'Property' connection describes land or buildings owned by either an established propertied family which participated in the Empire, or a recent enriched family which, through involvement in colonial activities, acquired the means to secure property. See Mullen *et al* 2024, 30-31 for a full definition of typology.

[5] Mullen *et al* 2024, 46-48.

[6] This section and the next are based on Hedges 1987, 1-14

[7] Petrie 1874 (paper delivered in 1866)

[8] In 2011, the Macaulay Institute merged the Scottish Crop Research Institute to form the James Hutton Institute)

Scotland was persuaded to take matters forward. They purchased the mound and appointed their Secretary, James Hewat Craw, to oversee excavations, which began in 1930.

Craw supervised four seasons of work before his sudden death. In 1930 he excavated the broch interior and laid down trial trenches outside, establishing that the remains were more extensive than had been realised. In 1931 more land was acquired and excavation began outside the broch: this exhausted the initial funds. Realising the importance of the site, Richardson arranged for it to be taken into State care in 1932, and from then onwards the State (H M Office of Works) took over funding and responsibility for the whole site.

By 1933 Craw had completed excavation inside the broch, cleared most of the "village" buildings except for an area on the south-west where complex later buildings lay high up in the mound, established the line of the perimeter wall on the outer side of the village buildings and cleared the entrance-way which runs into the site from the east.

The year before his death Craw had established what seemed to be a logical sequence for the history of the site.[9] (Craw had undertaken a phenomenal amount of work at this time: in 1932 and 1933, as well as supervising excavations at Gurness, he was also supervising work at Midhowe chambered cairn on Rousay.[10] Next to the cairn at Midhowe, J. G. Callander was excavating the broch at Midhowe at the behest and expense of the landowner Walter Grant.[11] Richardson of the Office of Works appears to have prompted all three projects: Gurness, Midhowe Broch and Midhowe Cairn.)

After Craw's death in September 1933, Richardson took over, but was often absent, leaving direct oversight to a group of assistants, none of whom seems to have had any archaeological qualification or much experience of excavation. Richardson appears to have adopted Craw's ideas on the site sequence without significant change. Further land was acquired around that already purchased by the Society of Antiquaries, and the outer ditches and ramparts were cleared. In addition, the complex structures in the south quadrant, which Craw had been reluctant to tackle, were excavated and removed, so that the whole area around the broch could be laid out at a single level. The final seasons were largely occupied with consolidating the stonework of the site, ready for display.

From the first season onwards, consolidation of the stonework proceeded hand in hand with excavation. While eminently sensible in many ways, this practice obstructed archaeological investigation: for example, structures in the broch interior were consolidated quickly, because they were extremely

[9] Craw 1934 (paper given at Congress in London, 1-6 August 1932)
[10] Callander and Grant 1934
[11] Reynolds and Ritchie 1985

fragile, preventing the excavators from removing most of the floor levels on and into which the flagstone partitions were set.

Photographs survive which show how comprehensively some of the walling was rebuilt, but written records were sparse, as was the case for excavation. Annotated sketch plans and sections do survive, with lists of finds, though understanding of stratigraphy seems to have been patchy.

Excavation ceased after the summer of 1939 due to the outbreak of war, but by then most of what was thought likely to be revealed had been cleared and the focus was on consolidation, so to some extent a natural endpoint had been reached. Richardson had considered returning after the war to resolve the partial remains of houses on the north side of the village, between the broch and the sea, but never did so. More by chance than design, a few limited but potentially significant areas were left wholly or partially unexcavated.

Richardson eventually wrote the first of a series of guide booklets,[12] but he never seems to have attempted to produce a full excavation report. That long-postponed task was undertaken in the 1980s by North of Scotland Archaeological Services; a group of professionally-trained archaeologists living in Orkney and led by John Hedges.[13] The work, commissioned by Scottish Development Department (Ancient Monuments / Historic Buildings and Monuments) was not easy, and the absence of detailed archive records led to some issues over the quality and reliability of the results, and in particular in the chronology proposed for the site, which differed markedly from that given by Richardson.

Following the extensive works of the 1930s, subsequent consolidation of the site has been largely restricted to keeping the stonework in good condition: in effect, the maintenance of what was done up to 1939 through the replacement of stone pinnings and occasional replacement of stones which have fractured through natural weathering or visitor impact.

In the latter half of the twentieth century, measured survey and photographic recording took place on several occasions, in support of site management and interpretation activities, and a generous selection of documentation is available, mainly in the collections of Historic Environment Scotland, the modern successor to the Office of Works.

There is the intention for the site to be recorded by terrestrial laser scanning as part of the Rae Project, in order to provide an objective digital record which will underpin site management and any future conservation work as required.

[12] Richardson 1948
[13] Hedges 1987

2.2 Evidential values

The evidential value of Gurness is exceptionally high for what its constructional details, physical fabric, location and setting can tell us about the Iron Age and later periods, for the important range of artefacts recovered during excavation, and for its potential to yield further information through ongoing research.

While its superficial appearance seems "authentic" and its landscape setting remains largely intact, it is evident that the consolidation and laying out of Gurness for public access has involved significant changes. Insofar as Gurness has been reconstructed *as a monument*, it is clear that the character of the stonework has been significantly changed, most notably by the use of large quantities of mortar in the 1930s to secure rebuilt walls which were originally of drystone construction. It is clear that much of the walling and many of the upright slab features have been rebuilt. As a result, and due to the lack of detailed records, it is not entirely clear how far the neat stone facing of many features, such as the sides of the ditches near the entrance-way to the site, truly reflects what was discovered. Photographic evidence of the 1930s campaign points to the real possibility that Gurness may now be much "better" built than it was when first constructed in the Iron Age.

The primary significance of Gurness lies in what the site, always remembering its heavily excavated and consolidated state, demonstrates about the plan and form of brochs and about the clusters of structures which sometimes surround them. This is discussed below (2.4 Architectural and Artisitic values).

The landscape setting of the site is also of considerable importance: the shores of Eynhallow Sound hold one of the densest concentrations of brochs, which is of importance for considerations of how brochs (and their associated communities) related to each other and to their natural environment. The site also offers some potential for further excavation and the use of other investigation techniques, which might provide additional knowledge about its sequence and about its Iron Age and later context, including insights into changing environmental conditions and land-use over time.

While the 1930s excavations removed much, we do not know the full extent of these excavations and undisturbed Iron Age deposits are likely to survive in several areas, including the inside of the broch, where it appears that the excavators did not clear down to the natural ground surface. Archaeological deposits may also survive within the blocking of the wall galleries, within the ditch fills and under the ramparts. Likewise, there may be deposits buried beneath the walls of the upstanding, consolidated, structures. Finally, there is some evidence to suggest that there may be archaeological material below the area outside the boundary of the area in State care, to the south of the site.

While the whole site should be regarded as archaeologically sensitive, the areas of greatest archaeological potential within the area in State care are likely to be:

- Within the broch: (a) the area below the paved floor, especially the south side of the interior and (b) the floors of the stone-packed wall-galleries.
- Beneath the wall of the broch, which appears to be of large stones forming a basal course or plinth, but without any foundation trench. While accessing the area below the wall foot would be very challenging, it is not impossible that evidence for construction-contemporary activity might be preserved there and could add to the very small corpus of broch construction dates.
- Within the ditches, especially below the "gatehouse": structure which was built out over the ditch at the point where the site is entered, and below the perimeter wall which marks the outer edge of the houses to the south of the broch. The lower fill of the inner ditch produced evidence for bronze-working in the form of casting moulds.
- Below the ramparts, which appear to have been dumped onto the existing ground surface.
- In the eastern area of the site outside the ditches, near to the displayed Viking grave.
- In the area to the south of the site, beyond that in State care.

There have been a number of recent excavations at broch sites in Orkney, but only one, Howe near Stromness, has so far led to published evidence (albeit indirect) bearing upon the date of construction of an Orcadian broch – in this case most probably in the late second century or early 1st centuries BC.[14] That is the same broad date suggested for the broch at Gurness, though the site biography of Howe appears very different, with a long succession of pre-broch structures beginning in the Neolithic. So far, the evidence from Orkney does not rule out the idea that all the brochs there may have been constructed over a relatively short period.

A number of excavations have demonstrated that Orkney had thick walled sub-circular structures much earlier in the Iron Age, so when the elaborate architectural features of the brochs towers were developed, their

[14] Ballin Smith 1994, 37

construction could draw upon long experience of building solid stone roundhouses.[15]

The location of Gurness can also offer some evidence towards understanding its original purpose. It is set near to the coast, overlooking the strait which divides Orkney Mainland from Rousay. It would have been clearly visible to anyone approaching by sea. It sits within an area of land which would have been suitable for arable cultivation, although this is not the best land locally available, but is some distance from moorland for rough grazing. Assuming the use of local marine resources was important, Gurness was ideally situated to access these.

Gurness is inter-visible with several other broch sites and if it once stood taller, this would have brought several more into view. Eynhallow Sound is one of the locations where the idea of brochs forming a defensive chain seems most plausible.

Finally, away from the site itself, it is important to stress the value of the surviving artefactual evidence, which is stored (and partly displayed) by the National Museum of Scotland and Tankerness House Museum in Kirkwall. While most of the material is not well-contexted, there would still be much to be gained from thorough re-examination of this using modern scientific techniques.[16]

One highlight among the artefacts must be the fragments of amphora (storage jar), one of which is from just below the final level of paved floor within the broch. Finds from the Roman world are scarce but not unknown from brochs, especially in Orkney: however, most are the sort of portable objects which might have found their way through many hands to Orkney: brooches for example, a few coins and fragments of the distinctive bright red Samian ware pottery. The Gurness amphora fragments are different: they are visually unattractive and do not seem likely collectable items as fragments. It is hard to see them as anything other than parts of a vessel which reached Gurness intact and was then broken on site, and thus as evidence for contact with a supply chain which in the 1st century AD linked Orkney to north-west Spain, where this amphora type was made and presumably filled. It is not at present possible to say what was being traded: olives and wine have been found in similar vessels in a number of

[15] Sites at Bu near Stromness, Pierowall Quarry in Westray, Quanterness near Kirkwall and most recently Swandro in Rousay all have thick-walled early Iron Age roundhouses set into the remains of Neolithic chambered cairns. The only example known outside Orkney is Clettraval in North Uist (Western Isles).

[16] The catalogue of artefacts in Hedges 1987 was thorough, but the analysis was not comprehensive for a variety of reasons: not least the fact that the authors and specialists were pre-occupied by the Howe excavations which were in progress at the same time. Indeed, the decision to undertake a retrospective excavation report for Gurness was strongly influenced by the opportunity and potential to calibrate the long-unpublished results from Gurness with the newly commenced work at Howe, to shed more light on both sites (Noel Fojut, personal comments).

locations in Spain and Portugal, where they are most frequently found,[17] and in ancient shipwreck sites.

2.3 Historical values

The primary historical importance of prehistoric sites such as Gurness is their ability to illustrate the capabilities of Iron Age society and ways of living and to help in constructing narratives about life in the Iron Age.

Brochs are such striking and singular structures that it remains a constant frustration that, despite an abundance of theory and interpretation (see Appendix 4), we know little for certain about who built these structures or for what purpose (or purposes: it is possible not every broch was built with identical intentions). Consequently, their value for the development of explanatory narratives is a collective one. No individual broch, however closely investigated, would be capable of answering all of the questions which might be posed about brochs, and for many purposes, data from a large number of sites is necessary.

The structures around the broch at Gurness appear more readily comprehensible, but even their classification as dwelling places is not without reservations: they may at times have served as workshops (including for metal-working) or for storage. Likewise, the idea that the ditches and ramparts are solely for defence is not the only possibility: they might have been built to enclose a special (or sacred) space and have functioned as much symbolically as physically. This thought might offer a link to the underground chamber or "well" within the broch, which may pre-date the broch's construction.[18]

Our understanding of the nature of the society and circumstance that gave rise to Gurness, and caused its layout to change over time is largely conjectural. So far as can be gleaned from excavated finds, the material culture of Gurness does not stand out strongly from the generality of finds in other Iron Age sites. Nor are there particular classes of find from Gurness with its "broch village" which are not found in brochs which stood as isolated towers. There are, however, hints from some sites of dietary differences, suggesting that, on "village" sites, those who left their rubbish inside brochs had a richer diet, with more meat from large animals and a

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[17] Archaeology Data Service, Roman Amphorae: a digital resource - Haltern 70 (archaeologydatservice.ac.uk) (accessed 11 February 2019 – the amphora type is Haltern 70) Fitzpatrick 1989 makes a case for this find as evidence supporting the claimed submission of Orkney to Claudius in AD 43, immediately after the invasion of southern England. While this is perhaps over-stating the case given the uncertainty of the final date of production of this type of amphora, and the fact that amphorae may have been re-used: nonetheless, it seems highly probable that this vessel probably reached Gurness no later than the end of the first century AD.

[18] Armit 2003, 108-11 outlines the case for the ritual significance of these elaborate underground constructions, which often seem unconvincing as everyday water sources.

greater use of pig meat. These differentiations may be original to the founders of each settlement, or they may have emerged over time: the evidence we have is in almost every case for periods *after* the broch at the centre of each village was already standing.

Recent work[19] analysing the resources needed for broch construction suggests that each broch represents the work of a substantial workforce over a short period of time, probably somewhat larger than a single extended family or local community might afford. It is generally agreed that brochs (and some other enclosed constructions), were created in a social context in which two factors were significant: defensibility and impressiveness. Even in its reduced state, the broch at Gurness certainly appears impressive to modern eyes, and while defensible, especially with its external ditches, it does not appear to have been constructed to withstand a prolonged siege: presumably the warfare of the broch period consisted more of small-scale raiding rather than extended campaigns.

Stuart in 1857 expressed things pithily when considering the stimulus behind the building of brochs: "there must have been something peculiar in the circumstances of the inhabitants to have given rise to these peculiar erections."[20] We are still far from understanding what this peculiarity might have been. It is entirely possible that there was some short-lived phenomenon which led to the rapid building of many brochs over a relatively short period of time, only for them to become redundant thereafter. It may also be, that despite their relatively uniform architecture, not all brochs were intended to serve the same purpose. In which case there may be no single solution to the question of what brochs were for.

Gurness, of course, is more than just the central broch. The fact that the site was occupied for such a long period - with a village growing around the broch even as it fell slowly into disrepair - may indicate that the site was particularly favoured. Whether this was due to its location alone (which, while well-placed for the exploitation of sea and land resource, is not exceptional for Orkney), or whether the site had some other feature which enhanced its importance is not clear. Perhaps the so-called "well" might be such a feature, if it did indeed once serve a ritual purpose, even though it appears to have gone out of active use quite early, sealed over in the first re-modelling of the broch's interior. The evidence for metal-working may also indicate an above-average significance: moulds for bronze artefacts, including pins and what may be spear-butts, were found low down in the inner ditch fill, suggesting that manufacturing was integrated into the life of the broch and surrounding village. There is also the possibility that the metal-working may be associated with the "well" as

[19] Barber 2018
[20] Stuart 1857, 192

was the case at the site of Mine Howe, with the broch being established on a site which was already of importance.[21]

It has even been suggested by some writers that if society in Iron Age Orkney developed to the point where there was a single "king" or high chief, then it was at Gurness that this ruler lived, with the complex of buildings and managed access to them being one of the ways in which power was exercised and displayed.[22]

Lastly, and not negligibly, Gurness is a dot on the map of known brochs and other Iron Age settlements, and the distribution patterns to which it contributes, in relation to other sites of similar date and to the wider landscape, have considerable potential to contribute to explanatory narratives which seek to understand the nature and function(s) of brochs and of the society in which they were built and how this changed over time.

2.4 Architectural and artistic values

The details of broch architecture have been much studied and discussed (see Appendix 4 for an extended account).

The origin and emergence of the broch, with its distinctive architectural features, have long provoked strongly polarised debate; principally between those who argue for a long, gradual process of experimentation across a wide range of structural types culminating in tower brochs, and those who argue for the appearance of the tower broch as an act of creative inspiration. There is an ongoing debate between those who see brochs emerging in the north and those who see them emerging in the west, with the north probably in the ascendant at present.

Orkney has produced a number of very solidly-walled round houses with early Iron Age dates which may have played a role in the genesis of the broch idea. The features which brochs share with other types of structure, such as blockhouses (in Shetland) and galleried duns (in western Scotland) have been regarded by some as ancestral stages towards the broch tower, and by others as later borrowings from the broch architecture. Therefore, the relative construction dates of all of these different classes of structure is a key gap in knowledge: much more data is needed from more sites. That said, both northern and western schools of thought concur that, once

[21] Gurness is not a unique example of a broch with close associations with high-status metal working, and other broch sites also seem to have been deliberately located on top of, or adjacent to, sites of earlier ritual significance (for example, Howe).
[22] Armit 2003 117-8; see also Foster 1989 for a discussion on the control of access to architectural spaces as a means of exercising power, which specifically references Gurness.

perfected, the broch phenomenon spread rapidly, with brochs swiftly being erected in most suitable locations within their regional landscapes.

The broch at the centre of Gurness has an interesting plan: it has an intra-mural space which runs around the entire ground-level, expanding to form opposed “guard cells” flanking the entrance passage. This feature, shared with Midhowe broch, is relatively infrequent in Orkney brochs, being more associated with brochs in the west than in the north. It has been suggested that this might make Gurness an early example of a broch, either for Orkney in particular or perhaps for brochs in general. Unusually for a ground-galleried broch, there is no access to the ground level gallery from the broch’s central courtyard.

Above this unusual ground level, the broch at Gurness currently stands to just under 4m in total height, with clear evidence for a second gallery level running around within the wall thickness, accessed by a raised doorway in the inner wall face and then a stone stair. There is a scarcement ledge corbelled out all around the inner wall-face at about 3.6m high – all features of a classic broch tower, as well as evidence that it once stood much higher.

In addition to the ground plan, several features are architecturally noteworthy about the broch at Gurness:

- The very clear evidence that the broch began to subside soon after construction, with the walls slumping and distorting. In an apparent attempt to combat this, the occupants packed most of the intramural wall spaces with stone. This seems to have failed, and the upper levels of the broch were then taken down to a safer height. While many brochs are believed to have collapsed, Gurness is without doubt the best location to see the effects of such a collapse, and to ponder its meaning: was the broch badly built, or taken over-ambitiously high for its hollow wall-base to bear? We are unlikely ever to be certain.
- The extremely elaborate internal stone fittings within the inner space of the broch, partly comprised of large slabs of sandstone erected on end and including two short stairways. These features tend to divide the space into two almost equal parts. They are clearly later in date than the construction of the broch tower, and there is evidence to suggest that they may have been rebuilt more than once – as well as heavily rebuilt during the 1930s excavation and consolidation works. Their relationship to the other features of this part of the site suggests they were inserted after the broch tower had been reduced in height. The primary floor of the broch may yet be concealed beneath at least two later layers of slab paving, the more recent of which may have been inserted around AD 100.

- The deep, partly rock-cut chamber or "well" which descends 4m below the broch courtyard, is one of several in Orkney: that at Gurness is only surpassed by that at Mine Howe. It has been suggested that such chambers may be more than wells: possibly spaces in which unknown rituals rook place. It has also been suggested that they may pre-date the brochs within which they have been found (with the exception of Mine Howe, which is not below a broch). It may or may not be coincidental that other broch sites known to have such features also tend to have one or more external ditches, although none so clearly visible or large in scale as at Gurness. They also tend to have evidence of metal-working in bronze and/or iron.

The village of smaller houses which surrounds the broch at Gurness is one of the best-preserved of such villages, and one of the largest,[23] and its plan has certain distinctive features. Most notable is the sharing of common walls between individual houses: this has led the suggestion that Gurness was a "planned" village: at the very least, it must imply that the roofing of these houses required careful collaboration between the occupants or users of the individual structures. This is unusual: other broch villages which have been explored in Orkney, a few in Caithness, and two in Shetland, all had free-standing houses which did not usually share walls with one another.

The final architectural aspect of Gurness which is of particular note is the re-built late Iron Age / "Pictish" period structure, called the Shamrock house. This is of a cellular form, known elsewhere in Orkney and beyond, and has strong similarities with the less well-preserved "passage houses" at Jarlshof in Shetland. Its capacious interior but entirely unspectacular exterior (it was probably partly sunken into the mound of ruins) is a marked contrast from the showy monumentality of the broch which occupied the site 500 years before. A most unusual feature was the presence, probably within this house, of a small stone slab bearing three symbols, two of which are of common Pictish type. The fragment of an elongated, rectangular structure which stood nearby was also removed and rebuilt. It is possible the latter was part of a longhouse of Viking date.

Design

The detailed design features of individual structures at Gurness are discussed above and in Appendix 3.

Additionally, the orderly appearance on plan of the broch, the ditched enclosure and the "village" at Gurness has been offered as evidence for deliberate design of the site's initial layout, in effect to a "master plan"[24]

[23] That at the broch of Lingro, also in Orkney, seems to have been even more extensive – MacKie 2002, 242-4 and plan 232.
[24] Hedges 1987

though this interpretation has been challenged.[25] The "master plan" scenario sees the ditched enclosure created first, with the broch built within it shortly afterwards and work beginning at the same time on the surrounding village, all to a pre-conceived design.

There is however little in the way of evidence from the surviving records to support this interpretation: the construction order proposed for the southern houses in the village, beginning furthest from the broch's entrance and working towards it, may well be a characteristic of the 1930s consolidation of walling rather than of original construction.

More convincing, perhaps, in terms of whole-site design, is what appears to be a later comprehensive re-construction of the village, in which all six houses in the southern part of the village are extended outwards into the inner edge of the inner ditch, along with the construction of a well-built perimeter wall and elaboration of the entrance way through the ditches, aligning with the entrance to the broch. This work may coincide with the reduction in height of the broch tower consequent upon its incipient collapse, and may represent a deliberate re-distribution of living and working areas around the site.

South of the broch, there is a clear space of about forty square metres within the village, which appears to have been maintained throughout the early centuries of the village. This "dead" area, when every other part of the enclosure's ground surface was covered in building remains, may have been reserved for some special purpose, perhaps an activity which had to take place in the open air or required sunlight. (There is a not dissimilar clear area within the enclosed area around Clickimin broch in Shetland, there lying to the south-east of the broch.)

Construction

The broch is constructed in tabular slabs and blocks of sandstone, of the Rousay Flagstone series within the Devonian Middle Old Red Sandstone.[26] This is a superb raw material; easy to work and to build with, lending itself to high-quality drystone work. It is assumed that this was quarried from the adjacent foreshore.

However, the stone is prone to failure under stress, and also tends to delaminate once exposed to weathering: both of these weaknesses have contributed to the decay of features at Gurness, particularly lintels and upright slab-built features, so that many of those on site today are in fact recent replacements, since the site came into State care, and not the original Iron Age build.

Early settlement of the broch structure, soon after construction, led to outward slippage and bulging in the lower broch wall, which was

[25] MacKie 1994
[26] Mykura 1976, 77-80

combatted by filling the ground-level wall-spaces with stone: this can clearly be seen on site. It is not clear whether the root of the problem was outward movement of the foundation layers or crush-failure of stones under compression.

All of the walling that is visible today has been comprehensively consolidated, and in many places effectively rebuilt. While the positions and lines of walling seem to have been faithfully preserved, along with the general character of the stonework (for example large or small blocks, thin or thick), the lack of a comprehensive detailed record makes it hard to know how closely the site today matches that which was revealed during excavation. Extensive use of mortar to stabilise the rebuilt walls has further altered the character of the construction.

Despite these reservations, it is clear that Gurness was exceptionally well built, and as displayed it shows many small details, albeit often reconstituted, which are lacking or less-well developed on other sites, such as the use of the thin upright slabs within the broch interior and the many small cupboards and recesses in the houses of the surrounding village.

Artists' representations

Gurness has been the subject of a number of display schemes, and at time of writing (February 2019) is about to be provided with a new set of on-site interpretation boards and a new display within the visitor centre / museum building.

These will replace material of early 1990s vintage which, along with much interpretation from the 1990s and early 2000s, has been criticised by some commentators for presenting strongly domestic / agricultural images of everyday life in and around brochs, without sufficient emphasis on either industrial activity (such as metal-working) or on any defensive dimension.

2.5 Landscape and aesthetic values

Gurness is a well-manicured and cared-for site, set in an attractive coastal location, above a low cliff on the northern side of the promontory of Aikerness, overlooking the waters of Eynhallow Sound, which separates the main island (Mainland) of Orkney from the island of Rousay. There are at least ten brochs along the shores of the Sound, including **Midhowe Broch,** which is visible from Gurness, and from the site it is possible to look out to the west to the uninhabitated island of **Eynhallow** which bears the remains of a medieval church, also in State care.

The waters between Eynhallow and both the Mainland of Orkney and the island of Rousay are often rough, marking a tide-race at the west end of the Sound, and the noise of the waves sometimes reaches as far as Gurness. The sounds of wind, sea and calling seabirds are a feature of any visit.

For those with knowledge of the wealth of archaeology on the island of Rousay, including its series of Neolithic chambered cairns[27] (which lie farther back in time from Gurness than Gurness lies from the modern day), the presence of that island just across the water adds to the pleasure of a visit.

2.6 Natural heritage values

The area immediately around Gurness is not designated for the protection of species or habitats.[28]

However, parts of nearby Rousay and Eynhallow and their surrounding waters are designated, primarily for the protection of seabirds. The species of interest, along with many others, are frequently seen from Gurness, either on or flying over the sea, and the provision of good access has made the site popular with bird-watchers. Typical species include fulmar *Fulmaris glacialis*, arctic tern *Sternus paradisaea*, arctic skua *Stercorarious parasiticus* and common guillemot *Uria aalge*. All of Orkney's breeding gull species commonly appear at Gurness, as do cormorant *Phalacrocorax carbo*, shag *Phalacrocorax aristotelis*, and great skua *Stercorarius skua*. A wide range of ducks can be seen, particularly in the winter months, while eider *Somateria mollissima* and shellduck *Tadorna* breed nearby. Waders such as curlew *Numenius arquata* and redshank *Tringa totanus* are common along the shoreline, again with a wider variety of species in winter months.[29]

2.7 Contemporary/use values

Gurness is valued by contemporary communities primarily for value as a tourist site, one of many which together make up Orkney's "heritage offer". Additionally, the road and carpark provide easy access to an attractive area of coastline, with opportunities for gentle walks and nature-watching, so there are also benefits in terms of health and well-being which do not depend solely on the heritage dimension.

Photographic images of the broch have been used widely in archaeological reference works and in general guidebooks, with both the aerial overview and the seaward aspect particularly favoured as images.

In the present day, accessing the broch involves a very short walk from the adjacent parking area, past the neat 1930s stone visitor centre / museum building. Prior to this, a visit by the former access route involved a 1.5km

[27] Many of which are also in State care and are accessible to visitors.
[28] NatureScot website (accessed 16 February 2019)
[29] Noel Fojut, personal observation.

walk from the far side of Aikerness beach, with perhaps more of a sense of adventure and exposure to the vagaries of the elements.

Most visitors to Gurness, whether independent or in organised tour groups, also visit some of the many other heritage sites in West Mainland Orkney, particularly those making up the Heart of Neolithic Orkney World Heritage Site (**Maeshowe**, **Stones of Stenness**, **Ring of Brodgar** and **Skara Brae**) and often take in Birsay (**Earl's Palace** and sometimes **Brough of Birsay**) as part of a coastal circuit. Gurness is not well-equipped to deal with very large groups, lacking adequate shelter and toilet facilities, and is not usually taken in by the very large parties which land from cruise liners anchored in Kirkwall Bay and doing "Orkney in a day".

The cumulative effect of the many heritage sites in Orkney makes a strong contribution to Orkney's image for visitors, and is heavily drawn upon in national and international advertising campaigns. Images of Gurness have appeared in such material, usually not identified by name.

On-site interpretation is provided by a series of interpretation boards, with additional information and a small sales and ticketing point located in the on-site visitor centre just inside the boundary of the site. There is a charge to visit the site when this is open, and a Historic Scotland colour guide booklet is available, shared with Midhowe broch.[30]

3. MAJOR GAPS IN UNDERSTANDING

A wide range of unanswered questions surround brochs in general, despite two centuries of excavation, study and theorising (see Appendix 4). Sites such as Gurness, where brochs are found in combination with other structures and as part of long-lasting sequences of occupation, can help to set brochs into their wider Iron Age context, and in so doing can shed on the whole period, balancing an over-emphasis on brochs alone.

This section lists some key questions about Gurness which relate to our understanding of the wider Iron Age in the north, and seeks to assess how far Gurness retains potential to make future contributions towards answering broader research questions:

- When was the broch built, and how does it relate in time to other structures on its site, particularly to the "well" and to the outer ditches? There is probably no surviving stratigraphic connection between the broch, the "well" and the ditches, it is possible that dating evidence for each may lie buried, below the broch's current floor, under the massive wall-base or in the ditch sediments: accessing, or even assessing the potential for this would involve disturbance to the historic fabric. Likewise, the same areas might

[30] Fojut 1993, 2001

conceal evidence of pre-broch structures but there is no surface trace of any. It has been suggested that Gurness originally had a wooden structure set within the broch, and that sufficient of the original floor may still survive under later paving to test this hypothesis and potentially thus date the primary construction of the broch.[31] It is not impossible that the "well" may be the primary structure, perhaps associated with metal-working, with the broch built around it. The ditches could possibly have surrounded the "well" or been added later – possibly even some time after the broch and village were already in place. (See Appendix 3 for alternative possible sequences.)

- How does this relate to the construction date and pre-construction history of other brochs? This cannot be addressed without answers to the previous question, and also dating evidence from more brochs. A number of other brochs have produced evidence for pre-broch activity, including massive wooden roundhouses (Càrn Liath in east Sutherland and Buchlyvie in Stirlingshire, southern Scotland) and also for the construction of brochs on much earlier remains, including a Neolithic chambered cairn (Howe of Howe, near Stromness, Orkney). The excavated sequence at the latter site influenced that proposed for Gurness,[32] but may not be a reliable guide: different broch sites doubtless have different "biographies".
- Is the broch at Gurness typical, in so far as a typical broch exists? The overall ground plan of Gurness lies within the middle range of dimensions, but is unusual for north Scotland in having had a hollow wall from the ground level, a feature more common in the west. It has other features which are common to all brochs, such as a raised scarcement ledge, stone staircase within the wall thickness, narrow entrance passage and signs of a chamber above the entrance. One of the unusual features of Gurness, which it shares with only a few other known broch sites, is clear evidence for collapse of the stonework early in the life of the broch, followed by repair.
- Was Gurness built by (and for) long-resident local inhabitants or recent incomers? This cannot be definitively answered on the basis of existing evidence. Most current opinions would favour Orkney as the most likely place of origin for brochs, although quite why they arose remains the subject of competing theories. Evidence may emerge, from new excavations or analysis of artefacts, to shed more light on this question, but at present the provisional answer would be that Gurness (and other Orkney brochs) was built by people already living in Orkney rather than by new immigrants.

[31] MacKie 1987, 305-6 and offers speculative reconstructions of how the primary floor and associated wooden structure may have looked.
[32] Hedges 1987

- Were specialist architects involved? If so, the evidence from Gurness is that they were not very good at their job: the early partial collapse of the broch tower suggests its base was insufficient for the height to which it was built, and that this led to a need to rapidly reduce it in height. It is possible that skills learned in Orkney led to the development of skills which were subsequently used to build brochs elsewhere. Orkney had a long tradition of building elaborate structures in drystone before brochs emerged, and it has been suggested that Gurness was a relatively early experiment which demonstrated flaws, which were eliminated in later brochs by making their bases more solid. Once perfected, wherever that was done, it has been suggested that the building of brochs spread rapidly.
- What can be said about the social and territorial organisation of those who built Gurness? A great deal can be said, but little can be proved. Most would support the existence of an elite within Iron Age society, who would have directed the activity of each group and conducted relationships with neighbouring groups and perhaps further afield. A chiefdom model seems to fit best, perhaps analogous to later Highland clans, with a chief and a few senior individuals leading a "client group" bound by kinship ties. There seems to be no evidence for a more layered society akin to medieval feudalism. While (in theory) each broch site might represent an isolated independent group, it is perhaps more likely that groups worked together, perhaps sharing leadership in times of crisis. It has even been suggested that brochs were first built as defences and lookout points in response to a crisis - perhaps the actual threat or strong fear of invasion - and were never intended to operate as long-term residences, though in many cases they were later adapted for this purpose. This idea forms the core of one of the two main competing sequences proposed for Gurness (see Appendix 3). However Gurness may have begun life, the site certainly became the long-term residence of a sizeable group of people, perhaps 100-200 at peak, for several centuries.
- How did the inhabitants of Gurness survive day to day, in terms of subsistence? There is clear evidence of mixed farming, with grinding stones (querns) for processing grain (probably barley) and bones of domesticated animals, including a significant number of cattle. While the excavation techniques of the 1930s might not have retrieved fishbone anyway, more recent broch excavations in Orkney have tended to suggest that the sea was less significant as a source of food than might be expected.
- What stimulated the building of brochs like that at Gurness: what were brochs actually for? Although we can say what happened to brochs – how they were used after they had been constructed and what other uses were made of the sites of brochs – we cannot know

what was in the minds of the builders. All we can do is look at the structures and their locations and surmise. At the two extremes of many explanations which have been offered are (at the “soft” end) the gradual emergence of a society in which leading individuals gradually exerted more and more control over resources and gained in status, competing with their neighbours in displays of monumental building, until the broch became the “must-have accessory” of its day and (at the “hard” end) a quasi-military and highly organised response to an urgent threat (or the perception of such a threat), either by long-resident islanders or by newly-arrived conquerors determined not to be displaced by late-comers. The “soft” and the “hard” are far from irreconcilable: manipulation of public attitudes through more recent history has seen instances when fear of some real or imagined external threat had been one means by which an elite has gained and exerted control over its fractious client populace.

- What do the “biographies” of sites like Gurness tell us about changes in society over time? Gurness is one of a number of Iron Age sites, concentrated in Orkney, Caithness and southern Shetland, where an increasing concentration of later Iron Age settlement, and by implication, power, takes place over time. Many broch sites seem to have been abandoned without growing, as Gurness did, into a more substantial settlement. This suggests that society changed considerably during the middle Iron Age. Firstly, settlement became more communal: moving from a pre-broch norm of being relatively dispersed across the landscape in quite small groups, perhaps of family size, to a post-broch norm of living in more nucleated, village-type, settlements, presumably controlling larger areas of land and organised at a scale larger than the single-family unit. Exactly what brought this about is not clear: it has been suggested that the appearance of brochs marks a period of unsettled times. Construction of brochs may have required, and helped to drive, more centralised authority. Secondly, brochs seem to have become outmoded by the end of the 2nd century AD and were either abandoned or absorbed, reduced and reworked in settlements – of which Gurness is the prime example – where “monumental” architecture was decreasingly required. Houses of the later Iron Age were comfortable enough, but smaller in scale and often semi-subterranean. It has been suggested that these changes represent a relaxation, a gradual re-adjustment to normality after a period of crisis marked by the building of brochs. In parallel to the reduction in scale of buildings seems to have come an opening of trading connections beyond the local area, with some broch-based communities – after brochs themselves had begun to decay – developing connections to the Roman world. Gurness is one such site. One final point to note is that by the time the Viking settlers

arrived in Orkney in the 9th century AD, settlement seems once more to have dispersed back into the wider landscape, with even a once-populous centre such as Gurness reduced to at most a single family-sized farmstead.

- What can we say about environmental change and land use during the period when brochs were constructed and used? Gurness was dug before modern techniques of environmental analysis had developed, but evidence from other broch sites suggests that climate changed relatively little over the period during which Gurness flourished and declined. This means that changes in how people lived came for other reasons. At the site of the Howe, on the south-west side of Orkney Mainland, it was noted that the proportion of different domestic animal bones changed over time: with the broch, came a reduction in cattle proportionate to sheep and the appearance of more pig. After the broch, sheep continued to be more numerous than before it, while the numbers of pig declined sharply. Sheep were also kept for longer before slaughter – which also coincides with evidence for weaving, so perhaps wool became more important. It has also been suggested that dairying became more important in later times than previously. There may be deposits on site at Gurness, most possibly in the ditches, which might be examined to see if similar patterns occur.

Additionally, as a site which was the subject of a ten-year excavation campaign and which was, and remains, one of the most extensive sets of stone-built prehistoric structures in Scotland to have been consolidated for public display, Gurness has the potential to offer evidence towards more recent questions, including:

- Does Gurness help to illustrate how conservation philosophy and practice have developed over time, especially for drystone prehistoric constructions? Undoubtedly: being a product of a single extended phase of work, Gurness encapsulates the conservation approach of the 1930s: major excavations went hand-in-hand with structural consolidation, leading to a need to make rapid decisions about what to preserve, what to rebuild, what to remove and what to discard. These decisions once made were irrevocable, and much information was undoubtedly lost due to what would now be considered inadequate recording. Set against this is the fact that a

project on this scale and ambition would be unlikely to happen today – and certainly not funded entirely by the State.[33]

- Does Gurness help to illustrate changing patterns of archaeological theory? Very much so. When the site was dug, diffusionist models of social change were in vogue. It was assumed that all major societal changes in Orkney and the north more widely were driven by outside influences – settlers or even invaders arriving. Brochs were seen as indicators of troubled times, as defences first and foremost, as chieftains' residences secondarily. When the archives were revisited 50 years later, the report which emerged was couched in the fashionable language of the early 1980s, which sought to privilege local origins and interpreted brochs essentially as indicators of status: symbols of power and possession of land, the centres of high-status farming estates. The truth probably lies somewhere in between.

4. ASSOCIATED PROPERTIES

Associated properties managed by HES

- **Mousa** (broch, Shetland)
- **Clickimin** (broch and associated remains, Shetland)
- **Jarlshof** (broch and associated remains, Shetland)
- **Ness of Burgi** (fort, Shetland)
- **Midhowe** (broch and associated remains, Orkney)
- **Dun Carloway** (broch, Western Isles / Comhairle nan Eilean Siar))
- **Càrn Liath** (broch, Highland)
- **Dun Dornaigil** (broch, Highland)

[33] There have arguably only been two comparable excavations since: The Howe (1978-82) where, as was always intended, the site was flattened and buried after excavation, and Old Scatness in Shetland, where a site of similar scale to Gurness was excavated using a mixture of State, EU regional development and local authority funding. Old Scatness is the nearest analogy to Gurness in its extent and has other similarities. Like Gurness, a decision was taken to dig it, essentially for research: there was no urgent threat. Unlike Gurness, the excavations stopped earlier, before even approaching the primary fill of the broch tower. Like Gurness, the desire to develop a site which was capable of acting as a tourism resource came increasingly to dominate decision-making (and at Old Scatness this need has yet to be fully addressed). Unlike Gurness, and perhaps most importantly, the excavation results were published fully and promptly, underlining the biggest problem of Gurness, which is that we do not know what was lost along the way, or why most decisions were made.

- **Dun Beag** (broch, Highland)
- **Dun Telve** (broch, Highland)
- **Dun Troddan** (broch, Highland)
- **Edin's Hall** (broch and associated remains, Scottish Borders)

Other associated sites

A sizeable number of other broch sites can be visited in Orkney, in addition to **Midhowe** (Rousay) which is also in State care. The best examples, in descending order of surviving structural detail are as follows: all are unconsolidated, and care should be taken regarding slip and trip hazards on site, as well as coastal cliffs near to several:

- Borwick (West Mainland)
- Burrian (North Ronaldsay)
- Howe of Hoxa (South Ronaldsay)
- Burroughston (Shapinsay)
- Burray East (Burray – nearby is a second broch, largely ruined: Burray West)
- Dingieshowe (East Mainland – more for the setting than the structure)
- Lamb Head (Stronsay – ditto)

At time of writing (2019) the University of the Highlands and Islands Archaeology Institute has been undertaking seasonal excavations at a broch and external village at The Cairns (South Ronaldsay): however, it is not at present intended to make this site publically accessible once these excavations cease.[34]

5. KEYWORDS

Broch; Iron Age; Ground-galleried; Intra-mural stair; Guard cell; Entrance passage; Inter-visibility; Village; rampart; ditch; Pictish; Viking; burial; trade; Orkney

[34] UHI, The Cairns (archaeologyorkney.com) (accessed 11 February 2019)

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Note: Footnotes throughout the text offer page numbers where appropriate. If no page number is given, this indicates that reference is being made to the general thrust of the publication cited rather than a specific point of detail.

APPENDICES

APPENDIX 1: TIMELINE

Note: this is an attempt to create a simple best-fit timeline between several alternative scenarios, none ruled out by clear evidence on site or in the excavation archives.

Table 1: Iron Age (mid)

Date	Event
No later than 1st century BC	Broch tower constructed. Ditches *may* also be dug at the same time, and the internal "well" is also of this date – although the "well" *could* pre-date the broch. Metal-working is taking place soon after the inner ditch is dug – it is not clear when this activity ceased. Subsidence in broch wall-base soon after construction. First houses built in village. Broch interior re-fitted, "well" paved over.
c. AD 100 – based on amphora presence	Broch remains unstable and is reduced in height. Broch interior re-fitted again. Village houses expanded outwards, with their edges linked to form a perimeter wall. Elaboration of entrance way leading through ditches towards the broch.
by possibly AD 200	Broch effectively abandoned , but village continues in use for several centuries, though perhaps reduced in numbers of occupants – eventually to a single house at any one time. Ditches are no longer kept clean and gradually fill in.

Table 2: Iron Age (late)

Date	Event
by ? AD 700	Mound gradually builds up, as new houses are built on top of the ruins of old ones: "shamrock" house is built .

Table 3: Viking

Date	Event
by possibly AD 850	Possible early Viking presence in “shamrock” house. Construction of possible longhouse.
AD 900 – AD 1000	Pagan Viking burials Site abandoned (not long after AD 900)

Table 4: Modern

Date	Event
1866	Site noted as a possible broch
1929	Site “rediscovered”
1930s	Site excavated under Craw (1930-3) and Richardson (1934-9) and consolidated. Visitor centre / museum built.
c. 1970	Original parking and path from far side of bay at Aikerness
1987	Retrospective excavation report published by Hedges
1990	New access route and parking beside site provided

APPENDIX 2: IMAGES

Figure 2: Gurness, broch interior immediately after emptying (c. 1934) to demonstrate how far today's neat stonework represents comprehensive reconstruction (SC 1214992) © Crown Copyright: HES.

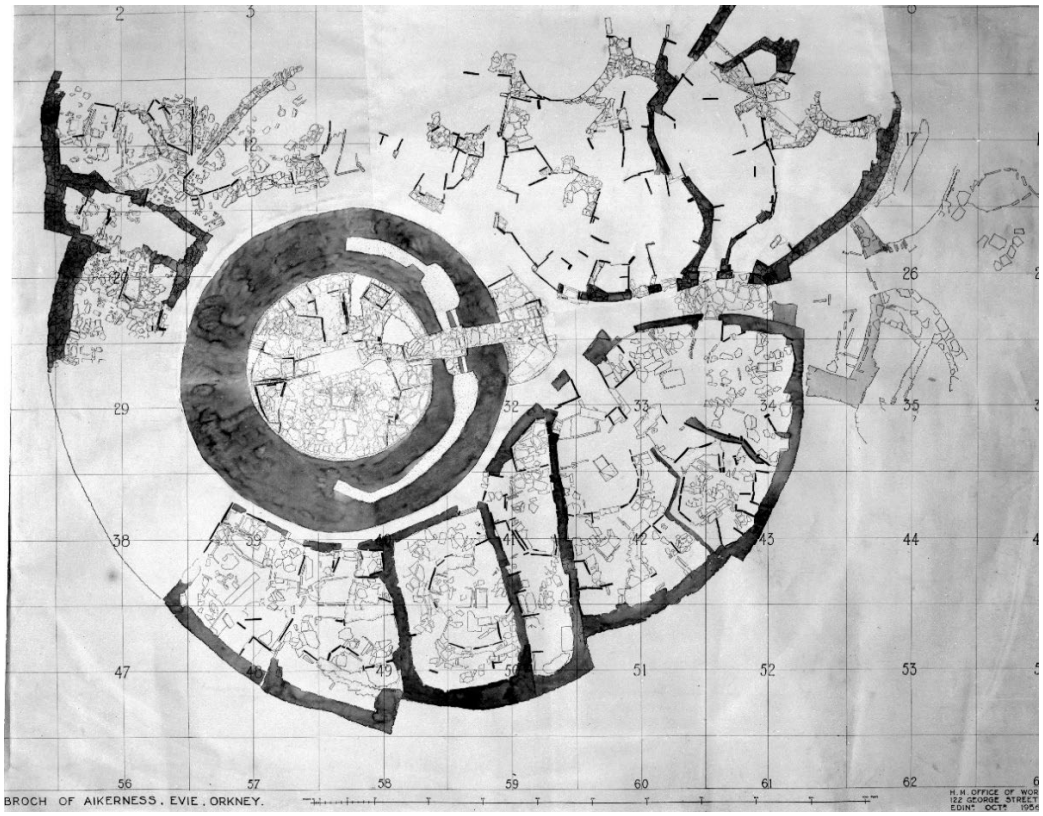

Figure 3: Gurness, the emerging plan (c. 1937) (SC 1217660) © Crown Copyright: HES.

Figure 4: Gurness, aerial view (008-001-008-266-R) © Crown Copyright: HES.

Figure 5: Gurness broch, ditches and Eynhallow Sound (008-000-062-846-R) © Laurence Winram.

Figure 6: Gurness broch interior (008-001-013-807-R) © Crown Copyright: HES.

Figure 7: Gurness broch, "well", looking down (008-001-013-805-R) © Crown Copyright: HES.

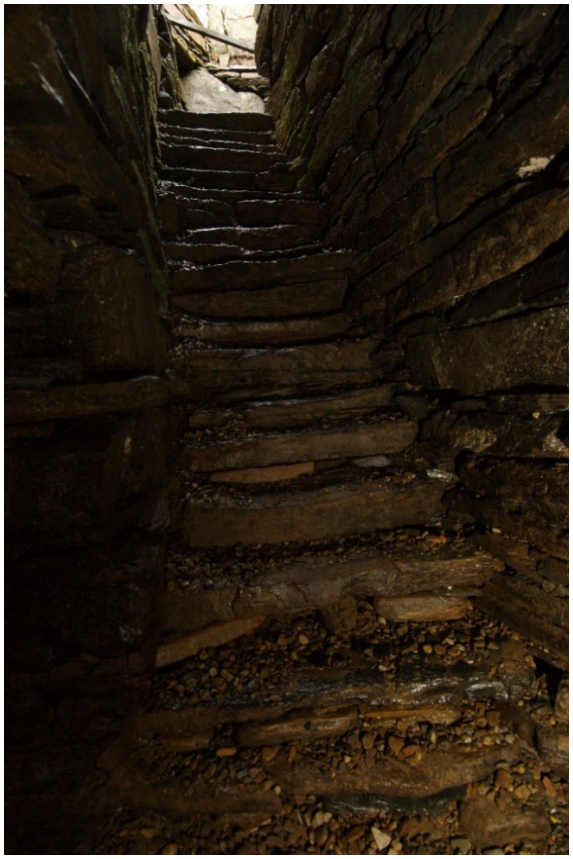

Figure 8: Gurness broch, “well” looking up (008-001-013-803-R) © Crown Copyright: HES.

Figure 9: Gurness, entrance way through ditches towards broch (008-000-062-847-R) © Laurence Winram.

Figure 10: Gurness, sample external building in the “village” (008-001-013-833-R) © Crown Copyright: HES.

Figure 11: Gurness “village” showing perimeter wall and entrance way (008-001-013-831-R) © Crown Copyright: HES.

Figure 12: Gurness, “shamrock” house (008-001-013-825-R) © Crown Copyright: HES.

Figure 13: Gurness, longhouse (with broch in background) (008-001-013-823-R) © Crown Copyright: HES.

Figure 14: Gurness, Pictish symbol stone (008-001-013-801-R) © Crown Copyright: HES.

APPENDIX 3: BROCH OF GURNESS: DESCRIPTION AND ALTERNATIVE SEQUENCES

Gurness is a very complex site and is already well-described in published sources.[35] This section does not seek to repeat those descriptions. Instead, it offers a short description, identifies the key features and then examines the different sequences which have been proposed, which have had a great influence on "broch period" research in Orkney and beyond.

Description

The broch is circular on plan, 19.2m in diameter externally and 10.3m internally. It presently stands to a maximum height of just over 4m. At ground level, a narrow cavity or "gallery" runs completely around within the thickness of the broch wall. Near to this gallery's intersection with the entrance passage into the broch, it expands to form two wider chambers, or "guard cells", which open into the entrance passage behind where a door would have been located.

[35] In descending order of detail: Hedges 1987; MacKie 2002; Fojut 1993 / 2001.

The lintelled entrance passage is on the east side of the broch. It is 4.5m long and partway along it is a rebate in the stonework, which would have held the frame of a door. A pivot stone for the doorpost is still in place, and a bar-hole lies just behind the frame, running through into the right-hand guard cell.

On the south side of the interior wall-face of the broch a doorway 1.8m up gives access to an intermural stair, of which only nine steps survive. There is clear evidence of an upper-level gallery running around inside the wall thickness, separated from the ground-level gallery by a lintelled floor which forms the ceiling of the ground-level gallery and the guard cells. A corbelled scarcement ledge runs around the interior wall-face at about 3.6m above current ground level, and presumably served to support a raised floor at this height. The broch's galleries are largely packed with stone, apparently in an attempt to rectify instability in the broch's structure which developed soon after construction.

Within the broch's interior space are a number of stone compartments and other features, partly constructed of large, upright, slabs; these include two stone stairways which rise towards the broch wall. (These features appear to be secondary insertions. They have all been heavily repaired and in places entirely rebuilt.) A carefully-constructed underground chamber, perhaps a "well", descends for 4m below the floor. This construction (which is now closed by a metal grid) appears to be an early feature, as it was sealed by the layer of paving which underlies many of the internal stone fittings. The precise relationship between the broch and the "well" is not known, because it is by no means certain that the excavators reached the primary floor level of the broch.

Around the broch lie the remains of at least 12 stone-built structures, represented by walls which in most cases do not stand more than a metre tall and which radiate out from it. The group of six on the south side of the broch are the best-preserved and feature small wall-cupboards, stone-lined floor tanks and hearths. The houses stand adjacent to each other, sharing side walls, while their outer walls join to form a continuous "parapet" wall which juts out into the inner ditch. Between the houses and the broch is a narrow passageway which gives access to each structure and leads towards the entrance through the outer ditches on the east side of the site. On the north side of the broch, remains of a similar number of houses which appear to have been broadly similar in detail and in layout can be seen, but have been severely affected by coastal erosion and may possibly be somewhat later in date than those to the south. In front of the broch's entrance, the two passageways which gave access to these small houses join, to run eastwards towards the entrance causeway through the ditches. Outside the entrance to the broch are two small chambers of unknown purposes. Where the causeway passes through the inner ditch, walling has been inserted into the edge of the ditch to flank a "gatehouse", which is

built over an infilled stretch of the ditch: this walling joins to the “parapet” wall which marks the outer edge of the houses.

The outer ditches are impressive, even though partly infilled. The inner ditch is the more substantial, being up to 7m across and over 2m deep in places: it is partly cut into bedrock. In places it is lined with stone, and has been reduced in width by the insertion of later stonework, especially on its southern arc. The only surviving gap is at the east end, and although this has been much altered, it appears to here that access was taken into the enclosed area in the Iron Age, as it is today. Outside the inner ditch is a broad area on which stand two low embankments, partly stone-faced. These ramparts are less impressive in scale than the inner ditch: the gap between them is not a ditch, but simply an area of original ground surface. Beyond the outer rampart is the outer ditch, which is shallower and less broad. It is also partly dug into bedrock, but seems mainly to be cut into the glacial clay which overlies the bedrock.

On the west side of the site, outside the outer ditch, are two structures which have been reconstituted, having been removed from the higher levels of the site mound during exploration in the 1930s: they originally lay above what is now the southern part of the “village” and appeared to have been partly excavated into the mound. The more impressive structure is known as the “shamrock” house, and has an oval central area with small rooms or “cells” opening off it. Access is via a narrow passage. Such houses occur on a few other sites (notably Jarlshof in Shetland) and belong to the late Iron Age, the period often known as Pictish – an attribution firmly supported at Gurness by the discovery of a small slab inscribed with Pictish symbols. Early Norse artefactual material was found in the “shamrock” house. Nearby are the walls of a simple sub-rectangular structure, which may be the remains of a bow-sided longhouse of early Norse date: unfortunately, this was damaged during the excavations before its significance was appreciated. On the eastern side of the site, outside the defences, a stone-lined pit marks the grave of a woman who was buried there in Viking times, one of several graves found during excavation. These burials probably occurred after the end of the site’s occupation.

Following the 1930s excavations, a neat mortared stone building was constructed on the west side of the site to serve as a visitor centre and small museum. The west end of the site boundary, where the public gate is situated, is walled, but the majority of the site boundary is formed by post- and wire fencing. A number of interpretation panels are set around the site: these are soon to be updated (2019). A large parking area was constructed in 1990 to the immediate west of the site, replacing a much longer access on foot.

To summarise the main features visible on site are:

- A circular broch, which probably stood much taller than it does today, with internal stone-built features: there is evidence that the

broch suffered from structural instability and was reduced in height, probably not long after it was built.

- A deep underground chamber or "well" within the broch.
- A "village" of at least a dozen smaller buildings occupying most of a level area immediately around the broch: these abut against each other. The best preserved of these are on the southern side of the broch: their outer walls join up to form a perimeter wall, which is particularly well-constructed at either side of the entrance which leads through the outer ditches.
- A pair of ditches, the inner one more substantial than the outer, between which lie a pair of broad walls or ramparts with a narrow space between them (which is not itself a dug ditch). The perimeter wall around the village is built out over the inner lip of the inner ditch.
- Two structures which were removed during excavation and reconstituted on the west side of the site, the "shamrock house" and the "longhouse".
- A stone-lined Viking grave, on the east side of the site.
- A small 1930s building which houses a Visitor Centre and museum, and other modern features such as information panels and ramped paths.

Competing sequences

The original excavators offered a construction sequence which formed the basis of several generations of guide leaflet, from 1948 onwards; this was then challenged in the retrospective excavation report published in 1987, which has formed the basis for site guides since then.

1) James Hewat Craw / James S. Richardson 1930s
Outer walls and ditch(es) constructed, with wall along the inner edge of innermost ditch, and more or less at the same time the broch is built as a tall free-standing tower in the centre of the site. *[Notes: (a) Richardson seems to assume that the "well" was dug within the broch after the latter was already standing. (b) There is no evidence for the stratigraphic relationship of the three key elements, ditch, the broch and the "well", so no way of being certain which might be the earliest. (c) Richardson assumed a wooden internal structure for the broch, according to his later guide leaflet.]*

The broch tower becomes unstable soon after construction and is propped up by packing stone into its internal galleries.

This effort fails, so the broch is reduced in height and a new floor and new internal fittings in stone are added, including stone stairs to reach the new (lower) wall-head. The "well" is sealed off (but not filled in).

At more or less the same time as these broch alterations, the outer "village" is constructed, as part of which the inner edge of the innermost ditch is infilled and a "bastion" wall built, which forms the outer wall of the houses in the village which lie to the south of the broch (what happened to the north of the broch is largely lost due to coastal erosion). Modifications are made at the outer end of broch entrance passage.

Minor modifications continue to village and broch, which gradually decay to form a large rubble mound, with new buildings being built over the ruins of old.

The "Shamrock" house is built into top of mound.

The site is abandoned.

Viking settlers re-occupy the site, building a longhouse and making burials.

Final abandonment.

2) John W. Hedges and team, working from archive material, early 1980s
The outer ditch(es) and walls are built first, with some sort of structure(s) within (no traces of which survive) – possibly some time before the broch. *[Notes: (a) As above, that there is no stratigraphic evidence one way or the other to place the broch, the "well" and the inner ditch in order of construction.]*

The outer ditches are recut and re-faced in stone. The broch is constructed (as a tower) with work on the "village" around it starting at same time – part of an overall "masterplan" for the site. The interior fittings in the broch's central space are of stone and reach up to the 3.6m-high scarcement ledge of the broch, on which some sort of raised floor sat. *[Note: As MacKie pointed out in his 1984 review, the reason why Hedges asserted that the original broch's internal fitments were of stone is entirely unclear.]* The village houses are built in sequence, and quickly one after the other, starting furthest from the broch entrance but leaving a distinct area clear on the south-west side of the site. *[Note: Hedges does not appear to have considered that the consolidation of these houses might have proceeded in that direction, and that the butting wall-joints might be a product of 1930s rebuilding rather than an Iron Age feature.]*

The broch starts to slump and is first propped up, then quickly reduced in height, with new internal fittings and a new floor added, though some of the fittings from the original interior may be retained. *[Note: There is no clear evidence to support the idea of original fittings surviving through this period of change.]* The "well" is sealed off. Modifications are put in place at the outer end of broch entrance passage. As the pre-planned building

programme proceeds, the houses in the village are altered to extend outwards over the inner edge of ditch, which is re-faced with the "bastion wall" to permit this, and at the same time the "gatehouse" is added to the entrance-way through the ditches towards the broch.

Extensive modifications are made over several centuries to the village and the reduced broch, which leads to a steady build-up of levels, especially to the south and west. The ditches cease to be maintained and are partly filled in.

The Pictish period "cloverleaf" house is built into top of the growing mound, and a ?Viking longhouse is built nearby – it is possible both are in use at the same time.

Viking burials occur at several points across the mound.

Site is abandoned by AD 1000.

3) Proposed revised sequence (revisiting 1) and 2) above, and taking in suggestions from MacKie (1984, 2002) and others)

Outer ditches are dug, possibly with the underground chamber or "well" at centre of the enclosed area: bronze-working may take place early in the site's history. *[Note: analogy with Mine Howe]*

Broch is erected as a free-standing tower around the "well", with original inner fittings in wood. *[Note: it is hard to explain the scarcement ledge otherwise.]*

Broch begins to subside and is propped up (by filling cavities within the wall thickness). It continues to fail, so the wooden inner structure and roof are removed, and the tower is taken down to a safe height. A new floor (which seals off the "well") is laid inside the broch and upright stone fittings are inserted, with a stone stair leading up to the new wall-head and possibly a raised loft space under a new, lower, roof. At the same time (and possibly using the stone made available by the broch's reduction) the rapid construction of the surrounding "village" commences, possibly working from the furthest points away from the broch entrance, but leaving a space on the south-west side clear (for unknown purposes). The entrance to the broch is elaborated, with new structures outside it and a chamber dug down from the new wall-head level near the entrance passage.

As this work is in progress, a decision is taken to extend the new structures out over the inner lip of the main ditch, which requires walling to be inserted. It may be at this time that the entrance-way from outside the ditches is elaborated, with a stone gateway and flanking wall. About now, the broch's inner floor has continued to sink, collapsing the stone stair, so another new floor is inserted (possibly around AD 100 based on amphora sherds) and a new stair is built, partially over collapsed rubble, with repairs and alterations made to the flagstone compartments within the broch.

The main focus of activity shifts to outside the broch, which is gradually allowed to fill with rubble, and access is now taken to the broch's wall-head from outside the broch. Over time, levels build up in the "village" too, with a succession of new houses being built on top of the remains of earlier ones, especially to the south and west of the broch ruin. The number of houses in use at any one time appears to reduce at this time: there is possibly only a single house in occupation at any one time during the final centuries of the Iron Age. The most complete of these late buildings is the "Shamrock" house (which was removed and rebuilt nearby to allow access to the levels below during excavation).

Not long after the "Shamrock" house, an elongated bow-sided house is built, possibly by Viking settlers. [Note: There may have been more buildings of this period which were not recognised by the excavators as they stripped the turf.]

Finally, there were several burials of a pagan Viking character before or after the mound was abandoned as a place of habitation, most likely no later than AD 1000.

APPENDIX 4: BROCHS: THEORIES AND INTERPRETATIONS

a) Defining brochs

For the purpose of this and other similar documents, the term "broch" is used to refer to what some researchers have called "fully formed" or "tower" brochs. There is no way of knowing exactly how many such structures once stood to heights approaching Mousa's 13 metres plus, only that the visible surviving remains of many sites do not rule this out.

Dryden first attempted to define brochs in 1872:

> A broch is a circular tower formed of wall 10 to 16f thick at the base, enclosing a court from 24 to 38f diameter, with one entrance from the outside into the court. The usual thickness of wall is about 15f, and the usual diameter of the court about 28f. All were in outline truncated cones – that is, the outside of the wall "batters" or inclines inwards. The wall is also decreased in thickness towards the top by set-offs inside. The chambers of the broch proper are in the thickness of the walls, but there are usually partitions in the court of later construction. The original height of these towers of course varied, and except Mousa, we have no broch more than 20f high, but Mousa is still 40f high and was somewhat more. No mortar was used in them, but probably the chinks were stopped with moss or mud just as in modern Shetland cottages.[36]

[36] Dryden 1872, 200

There have been a number of definitions over intervening years, of which, that by MacKie in 1965, refreshed in 2002, remains the most influential. MacKie offered a tight definition of brochs, to distinguish them from other drystone structures of broadly similar date. For MacKie, for a structure to be classed as a broch required five essential characteristics which must all occur in combination: (1) a circular ground-plan, (2) a thick wall, (3) large size, (4) a ledge (or scarcement) on its inside wall face and (5) at least one "hollow wall feature" from a list of four: (5a) an upper gallery (that is, a hollow wall at a level higher than the ground level), (5b) a chamber over the entrance passage, (5c) a void or voids in the inner wall-face and (5d) an intra-mural stair at an upper level.

MacKie noted that some "classic" features of brochs, such as their narrow and well-built entrance passages, occur in other types of structure. He also excluded from broch-defining characteristics the possession of a hollow wall at the ground level only, and also the possession of a stair which starts at ground level unless it rises to a much higher level.

As MacKie noted, relatively few of the c.600 sites referred to as brochs can be shown to possess this set of features, and he proposed that "probable" brochs could be defined as possessing features (1) to (4) but not demonstrably possessing any of the hollow wall features, with possible brochs having "no diagnostic features exposed but which seem likely from their situation to be brochs".[37]

The features of MacKie's "brochs" and "probable brochs" are known to be present at no more than 15 percent of the 600-plus suggested broch sites in Scotland, and there is no knowing how many of the remainder might, or might not, reveal such features on excavation. This means that Scotland is known to possess at least 80 brochs but could in fact possess many more, not to mention sites lost or destroyed over the centuries before antiquarian interest.

Stepping back from technical structural definitions, it is common practice, where a broch has proved on excavation to be surrounded by a complex of smaller structures and sometimes also by outer walls and ditches, to refer to the entire site simply as a broch. For example, the Broch of Mousa is a (more or less) solitary broch, whereas the Broch of Gurness comprises a broch surrounded by an extensive settlement and set within large ditches.

Brochs are unique to Scotland, and one of Scotland's few "endemic" prehistoric architectural forms. Their greatest concentration is in Orkney, Shetland, Caithness and East Sutherland, with more examples scattered rather more thinly across the Western Isles, Skye and the adjacent mainland, a few further south on the west coast and a handful of outlying examples in central, south-west and south-east Scotland.

[37] MacKie 2002, 1-2

b) A brief account of broch studies

Brochs have been the subject of more research and discussion than perhaps any other type of ancient monument. It is necessary to review these antiquarian and archaeological debates in some detail, because the significance of Mousa (and other brochs in State care) lies to a considerable extent in how each site offers, or could offer, evidence in support of competing definitions of "broch-ness" and towards competing narratives about the origins, date, nature and purpose of these enigmatic sites. The outcome of a huge amount of study appears to be that very few of the key questions about brochs have been resolved, while at the same time new and even less answerable questions have been stimulated. All narratives rely to some extent on assumptions, and the most which can be hoped is that these are made explicit.

The word "broch" was being used by antiquarians alongside "brough", "burgh" and "Picts' House / Castle" by the early 1800s, and the "broch" spelling was formally adopted by the Society of Antiquaries of Scotland in the early 1870s, though older usages lingered for a generation. Initially it signified a structure which was either, like Mousa, a tall-standing tower, or which had a lower height but showed sufficient structural detail for its similarity with surviving tall-standing examples to be asserted with confidence.

It is worth noting in passing that "broch" does not seem to have been in popular usage for this class of structure: the only pre-1800 use of "broch" was in relation to the town of Fraserburgh, where Scotland's first planned "new town" was created in the late 1500s and early 1600s, and referred to as "Fraser's broch" or "Fraser's burgh",[38] suggesting that broch was a northern synonym for burgh. The nickname Broch is still in popular use today, especially in local newspapers, where it allows for a larger typeface and more striking headlines than does Fraserburgh.[39] And in the Western Isles and wider Gaelic-speaking area, the term "broch" was not used locally, even though the Old Norse root "borg" appears as "barp"- and "borve" in many place-names. The word dùn, a generic Gaelic word for fort, was used exclusively for all man-made prehistoric sites which appeared to be of a defensive nature.

As archaeological research and fieldwork progressed, the number of "possible" broch sites has risen to about 600,[40] although as time passed, the majority of sites so designated were usually no more than large grass-covered mounds of masonry of approximately the right dimensions, which in their physical appearance and siting appeared to informed observers

[38] Oram et al, 5
[39] One memorable headline from the Press and Journal, in 1980: "Broch man told lies to gain credit"
[40] Armit 2003

less like a large burial cairn and more like a broch – a rather unsatisfactory approach, but one which persists in modern research.

A recent estimate is that only about 150 of 600+ "possible" broch sites show any details of built masonry at all, with about half of these, 70 or 80, either surviving as towers or showing sufficient structural evidence to suggest they could once have achieved such a height.[41] That said, when "possible" broch sites have been tested by full or partial excavation, or otherwise disturbed, they do prove more often than not to reveal features allowing them to be counted as brochs.[42] Additional "possible" sites continue to be added, and in some cases demonstrated to be brochs.[43] In summary, Scotland has at least 80 brochs, but may have many more.

It has been accepted from the early days of serious study that few other brochs had ever stood quite as tall as **Mousa** and the other partially surviving towers such as **Duns Telve**, **Troddan** and **Carloway**, though views vary radically as to just how many were towers at all. Scott in 1947 argued that only a dozen or so tall towers had ever existed across Scotland, with the rest simple solidly built low-rise farmhouses.[44] Graham immediately disputed this, based on data from Royal Commission surveys, and his view, that the majority of brochs were tall enough to be imposing, if not as lofty as Mousa, has tended to prevail since then.[45]

Attempts to define "true" or "tower" brochs as distinct from a wider class of drystone forts and duns have tended to centre on the presence of specific constructional features: near-circular ground plan, hollow or galleried wall construction, single narrow entrance passage, staircase within the wall thickness, a wall thick enough to have supported a sufficient height to act as a defence, etcetera.[46]

Although early commentators tended to agree that brochs were originally unroofed towers, over time, opinion has shifted to the extent that most commentators, while disagreeing about details, accept that brochs contained significant internal fittings, typically including one or more raised floors and some form of a roof, and that timber was the major component of these "now vanished" elements. However, such features are in all cases inferred, based on what makes best sense of surviving stone-built features, such as scarcement ledges. Initially, it was suggested that broch roofs were "obviously" annular, lean-to structures leaving the centre for the inner space open to the sky (for light and smoke to escape).[47] More recently,

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[41] Barber 2018
[42] For example, Cloddie Knowe, trial trenched in 1988 (MacKie 2002 p 82)
[43] For example, Channerwick, revealed in winter 2013/14 SCAPE, Channerwick Broch, Shetland (scapetrust.org) accessed 6 September 2018 (illustration also shows Mousa used as the archetype of a broch)
[44] Scott 1947
[45] Graham 1947a and 1947b
[46] MacKie 2002, 1-2
[47] Curle 1921, 90-92

broch reconstructions have tended to feature conical roofs sitting on the wall-head or just below it, with the weight taken by stout posts.[48] Fojut (sceptically) and most recently Romankiewicz (more optimistically) are among those who have recently published on possible roofing structures.[49]

Physical evidence for such features is extremely rare amongst excavated broch sites, and even at the only two brochs where evidence of really substantial floor-set timber posts has been found, Dun Troddan (Highland)[50] and Leckie (Stirlingshire),[51] these cannot conclusively be confirmed as having been constructed at the same time as the brochs.[52] The need for caution is emphasised by the substantial post-rings found at Buchlyvie (Stirlingshire)[53] and Càrn Liath (Highland – Sutherland)[54] which in both cases can be shown to relate to pre-broch roundhouses.[55]

If all brochs were indeed fitted out in timber, this would have interesting implications for wider relationships and poses the question of how quality timber for construction was obtained by those living in relatively treeless areas such as Shetland or the Western Isles.[56] The earlier view, that brochs as first constructed were not intended to be roofed, still has adherents, who offer an alternative view of brochs as a network of defensive lookout towers built in response to the threat of raiding or invasion. Smith has recently re-opened this debate by suggesting that Mousa and some other (although not all) brochs were never intended to be roofed.[57]

c) Broch origins

The date and antecedents of brochs have been pushed progressively earlier. The idea that brochs were built by the Danes or Vikings[58] persisted for some decades, despite the outright rejection of this idea by Scandinavian antiquarians as early as 1852.[59] The alternative, that they were built by the native population as watch-towers against the Vikings, was also popular[60] and led to them being called “Picts’ House” or “Pictish Castle”. However, by the 1880s, it had become generally accepted that

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[48] For example, that by Alan Braby, widely reproduced, for example, in Armit and Fojut 1998, 15
[49] Fojut 2005b, 194-6; Romankiewicz 2016, 17-19
[50] Curle 1921, 90-92
[51] MacKie 2007, 1312-3 (see also MacKie 2016 for more detailed account)
[52] Fojut 2005b, 192-3
[53] Main 1989, 296-302
[54] Love 1989, 165
[55] In this respect, the conjectural plans offered by MacKie for Dun Carloway are perhaps unhelpful. MacKie 2007, 1204
[56] Fojut 2005b, 196-9
[57] Smith 2016, 15
[58] Fergusson 1877, 630-9
[59] Worsaae 1852, 233
[60] Stuart 1857, 191-2

brochs were somewhat earlier, dating to what had come to be termed the Iron Age and constructed at a time when the Romans were actively expanding their Empire, further south.[61]

As the discipline of archaeology developed, and in the absence of direct dating evidence, efforts were made to fit brochs into wider perspectives. The idea of a series of "cliff castles" along the west coast of Britain, originating in Cornwall and gradually spreading north as they increased in architectural sophistication and complexity, was proposed,[62] and led to the dominance of various "diffusionist" models, in which brochs were seen as the strongholds of an incoming elite.[63] Elaborate "family trees" of Iron Age fortification across western Europe were drawn up, culminating in the broch, and these carried some influence well into the 1980s.[64]

The discovery, in excavated broch sites, of some types of artefacts with similarities to those found in southern England and Brittany was held to support this idea, with any thought that their presence might have arisen through trade being rejected. Clarke and others warned that many of the artefact types cited were much more broadly distributed and in some cases near-ubiquitous[65] in the middle Iron Age, and could not be relied upon to demonstrate large-scale invasion. That said, most would accept that there were contacts between Iron Age communities living along the European north-western seaboard, so ideas might have been shared, and individuals may have moved from area to area.

The observation has been made that brochs are unlikely to have arisen locally in north and west Scotland because the preceding local Bronze Age seems poor, but this may well be a mis-reading of the evidence: a lack of monumental building does not necessarily imply an impoverished culture.

The fundamental problems for the immigration/invasion hypothesis as an explanation for the appearance of brochs, are (a) why the arrival of people from an area which held no structures anything like brochs should lead to their construction in their new homeland, and (b) why the limited amount of "exotic" pottery which is held to mark their arrival in the area (supposedly at Clickimin) might not have been obtained by trade or by gift exchange.

The idea that brochs were built by "warlike chieftains" to "overawe a subject population", remained popular,[66] although not with all commentators. Stewart in 1956 was typically concise in this respect with regard to his homeland:

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[61] Anderson 1883
[62] Childe 1935
[63] Scott, 1948
[64] Hamilton 1968, 51
[65] Clarke 1971
[66] RCAHMS 1946 (visited/written 1930), 48-55

> Shetland at its best had two feudal castles, and all the local lairds of later times (very small fry indeed) would not have added up to the fraction of her hundred brochs, so it is useless to think of a lord controlling a group of serfs… We have a form of life based on a group much larger than the family, and a communal effort to meet some unprecedented sort of danger.[67]

The older, alternative view, that brochs were a unique local invention, began to be revived in the 1950s, notably in Shetland.[68] Broad contemporaneity with the Roman presence was still supported, but now with the added idea of brochs as refuges against slave-raiding, possibly by the Romans or by war-bands selling slaves into the Roman Empire. The persistence of immigration, if not invasion, as a stimulus was maintained, with the invention of brochs, probably in Orkney, by a "mixed" population.[69] At the same time, the idea was revived that brochs were built over a very short period and then abandoned or converted into non-defensive structures.[70]

The period of broch construction was still assumed to be in the last century BC and the first century AD (largely on the basis of a few Roman artefacts found in and around brochs). This theory allowed for several centuries of experimentation to "perfect" the broch, wherever it first emerged in its ultimate expression as a tower, although there was a tendency to push this date a little earlier, perhaps into the second or third century BC, with an increasing preference for local invention over external inspiration. There was general agreement that brochs as well-built as Mousa came late in any sequence of structures.[71]

The search for the architectural antecedents of brochs produced two competing theories. A 'western origin' school saw brochs developing from simpler D-shaped enclosures with some broch features which occur in Skye and the neighbouring mainland, and which MacKie termed semi-brochs, via the "ground galleried" brochs of the west into the "solid-based" brochs of the north.[72] A competing northern origin school of opinion saw brochs arising in Orkney or Caithness (or even in Shetland, where a small number of so-called "blockhouse forts" contain broch-like features, such as wall-base cells, stairways and scarcement ledges).[73] Dating evidence emerged in Orkney during the early 1980s for a few thick-walled roundhouses (such as that at Bu, near Stromness, dating to 600 – 500 BC) which some claimed as forerunners to brochs,[74] although these possessed few, if any, of

[67] Stewart 1956, 15
[68] O'Neill 1954
[69] Stewart 1956, 15-16
[70] Stewart 1956, 15
[71] Fojut 1981, 226-7
[72] MacKie 1992: also MacKie 2007, 1094,
[73] Lamb 1980, Fojut 1981
[74] Hedges and Bell 1980, Hedges 1987

the classic defining features of brochs.[75] Nonetheless, this led some to believe that brochs might go back as early as 600 BC.[76]

Until recently there have been few secure radiocarbon dates for the actual construction of brochs, since few excavators had dug under their massive walls. Almost all dates from broch sites related to deposits within and around them, and almost by definition later than the construction of the brochs on each site – and usually later by an unknowable length of time. This changed with the dating of Dun Vulan (South Uist) from carbonised grain within the matrix of the wall. Taken with other material nearby, this suggested a construction date in the late 2nd or the 1st century BC. Slightly less securely, the construction of a broch at Upper Scalloway (Shetland) appeared to have taken place in the 1st century AD.[77]

The radiocarbon dating of the construction of a fully-formed Shetland broch to the period 400 – 200 BC, at Old Scatness in southern Mainland,[78] has forced a radical re-thinking of broch origins. The date, from well-stratified animal bone which was fresh at the time of its burial and lay directly under the well-built primary wall of the broch, has confirmed the growing suspicions that brochs were a considerably earlier development than had generally been supposed, at least in the north.

This has not entirely banished an attachment to the idea of immigration as a stimulus for changes in society which led to the appearance of brochs, although its continuing adherents now place the hypothetical arrival of the supposed highly skilled incomers into northern Scotland much earlier, perhaps even at the start of the local Iron Age (around 700 – 600 BC), the new date MacKie has suggested the arrival of the supposed high-status southern immigrants to Shetland.[79]

The arguments for this are problematic in the extreme, due to the disturbed nature of the structures and deposits at Clickimin, which Hamilton largely failed to take into account.[80] At Clickimin, key pottery forms with internally fluted rims and sometimes black burnished exteriors, were held by both Hamilton and MacKie to mark the arrival of southern immigrants well before the broch was constructed. It was suggested as early as 1980 that these particular forms of pottery appear not before, but in fact well after, the building of the broch at Clickimin and probably elsewhere in Shetland.[81]

This interpretation has now gained strong support from the extensive excavations at Old Scatness, where these pottery characteristics

[75] Armit 1990 p 195
[76] Fojut 1981, p 34
[77] Parker Pearson et al 1996; Sharples 1998
[78] Dockrill et al 2015, 168-171
[79] MacKie 2008
[80] Smith, 2014, 4
[81] Fojut 1989, especially 29-31 (first discussed in unpublished PhD thesis 1980)

consistently appear from the 1st century BC onwards – long after the construction of the broch. A similar date has been ascribed to comparable pottery at Dun Vulan in South Uist. This change – which may or may not mark the arrival of incoming settlers – is therefore no longer relevant in terms of dating the first appearance of brochs, either in Shetland or in the Western Isles.

MacKie's recent suggestion that brochs were invented first in the north, possibly even in Shetland, and then later reinvented in the west[82] seems improbable , and the scenario suggested by Parker Pearson and collaborators more likely,[83] with the broch tower invented in the north and only spreading to (or being adopted in) the west considerably later. This is consistent with the fact that in the west brochs are fewer in number and occur interspersed with other small stone forts which were unlikely to have stood as tall. The dating evidence from Clachtoll broch in West Sutherland, currently (2018) under investigation, should shed light on this, occupying as it does what might be seen as a step on the journey from north to west (or vice versa).

Reinforced by the new dating evidence, and following detailed architectural and engineering analysis, plus his own work at Thrumster broch and other sites in Caithness, Barber has suggested that, in the north at least, "classic", "fully-formed" or "tower" brochs such as Mousa may in fact all be of relatively early date and built over a short span of time short duration ("perhaps only a single, say 35 year, generation…in the early fourth century BC"[84]), often being reduced in height not long after their construction and in some cases incorporated as the cores of more extensive settlements. This latter phase of conversion Barber sees, with many caveats, as being already underway in Caithness by 200 BC and continuing perhaps until AD 200.[85]

So, while the date of origin for some brochs has been pushed earlier, there remains good evidence that some were still being built around the turn of the millennia in Shetland, and possibly built for the first time then in the west. There is also some evidence which may suggest direct contact with the 1st – 2nd century AD Roman occupying forces in central Scotland on the part of the inhabitants of Leckie in Stirlingshire, one of the "outlying" brochs which have always proved problematic to fit into the mainstream of broch theories. These have tended to be regarded as among the very last brochs to be built, and the broch at Leckie appeared to have been recently built at the time of the suggested Roman contact.[86]

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[82] MacKie 2008, 272
[83] Parker Pearson et al 1996, 58-62
[84] John Barber pers. comm. August 2018
[85] Barber 2018
[86] MacKie 2007, 1314-5 (See MacKie 2016 for more detailed discussion)

The wide span of dates now available suggests that the narrative which best fits the evidence is that the broch was a successful structural form which was first developed in the north, where it was quickly built in sizeable numbers. Brochs continued to be built in the north in appropriate circumstances over several centuries, and the architectural form was adopted further afield in later centuries. The artefactual evidence from Dun Vulan does not suggest the Western Isles were colonised in force from the north, being instead more consistent with limited contact. The idea that Shetland may have been taken over by Orcadian broch-builders, as floated by Stewart in 1956, similarly lacks artefactual support. But this returns us to the core of the problem; that we still have next to no excavated evidence for Iron Age culture at the point of broch building, but only from later centuries.

That is probably as much interpretation as the available evidence can currently support, and debate will continue as to exactly what the "appropriate circumstances" were which made building a broch a suitable response.

d) How special are brochs, and what was their purpose?

Many writers, including MacKie[87] and more recently Barber,[88] have emphasised the combination of architectural features which they felt pointed towards what Barber has termed "canonicity" – the intention of the builders of each broch to conform to a model which was clearly defined closely resembled other such towers so far as geology would allow. MacKie posited a "professional" architect cadre[89] while Barber has recently pointed to the engineering knowledge involved in constructing so close to the physical limits of buildability.[90]

Others have seen brochs simply as one end of a much wider spectrum of enclosed drystone structures which were all intended to serve the same broad purpose, presumed to be that of a defensible and impressive dwelling.[91] Armit developed the idea of the "Simple" and "Complex Atlantic Roundhouses" to emphasise similarities within a larger class of approximately circular structures,[92] while Romankiewicz has since taken this further to include all thick-walled structures, regardless of plan form, which contained intra-mural spaces and could have been roofed,[93] though to refer to such a wide range of structures as brochs seems unhelpful.[94]

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[87] MacKie 1965
[88] Barber 2018
[89] MacKie 1965
[90] Barber 2018
[91] Barrett 1981, 207-17
[92] Armit 1991
[93] Romankiewicz 2011
[94] Romankiewicz 2016

These contrasting views are interwoven with debate and with assumptions about how brochs "worked" in practical and social terms: about whether they represented the communal homes of whole communities or only of landlords or chieftains; whether they were defensive at all, or solely intended to demonstrate status,[95] and also about how and when the tower form emerged: possibly early and as a brilliant stroke of creative genius, or possibly late and as the product of a gradual process of experimentation. (Although, as Barber has recently observed, the frequent use of the term "evolution" is inappropriate in a Darwinian sense – ideas may evolve but structures cannot.)[96]

e) Brochs and Iron Age society

A further source of continuing debate has been the nature of contemporary society, ranging from early visions of a near-feudal society with immigrant overlords and their armed warriors living in brochs and levying rent and other support from subservient native, peasant farmers,[97] through one of embattled local communities seeking to defend themselves against raiders or invaders,[98] to one of peaceable, hierarchical farming communities building brochs not for defence at all, but as a symbol of their possession of the land, their prestige, and safe storage of accumulated wealth in the form of surplus grain.[99] Several commentators have observed that many brochs occupy locations where large-scale arable agriculture seems unlikely to have been any more viable in the Iron Age than it would be today[100] and the assumption of grain surplus is not certain.

Almost all of the dated evidence for life in and around brochs relates to their occupation in primary and subsequent forms, and not to their construction, and this is likely to remain the case. We have no way of knowing whether society at the precise time brochs were built was similar to that in subsequent centuries, from which most of our excavated evidence derives.

The explanation for the regional distribution pattern of brochs probably lies in the nature of Iron Age 'tribal' groupings, but there is insufficient evidence to provide a satisfactory explanation. The types of artefact found in broch excavations also occur on non-broch sites and also beyond the so-called "Broch Province", and brochs do not appear in some adjacent areas where physical conditions suggest they might, for example, in mid and south Argyll or Arran. In short, brochs do not align with a single distinctive "material culture". Stuart in 1857 expressed things pithily: "there must have

[95] Armit 2005b
[96] Barber 2018
[97] Scott 1947, 1948
[98] O'Neill
[99] Hingley 1992, 19; Dockrill 1998, 493-7 et passim; Armit 1996, 129-130
[100] Smith 2014

been something peculiar in the circumstances of the inhabitants to have given rise to these peculiar erections."[101] We are still far from understanding what this peculiarity might have been.

It seems likely that each broch represents the work of a substantial community, larger than a single extended family, which controlled a distinct area of land (and perhaps sea) and that the broch represented a visible token of their possession, willingness to defend that holding, and the social status of the group or at least its leaders. People must also have continued to make their living from the land and sea, so access to resources would have been a constant concern. However, how their society was organised is not self-evident, and the unanswered question remains: what combination of circumstances led to the building of a broch?

So far as can be ascertained from excavated evidence, Iron Age society at the time of the brochs appears to have been relatively "flat"; composed of largely self-sufficient groups, which over time became associated into wider regional groupings that might loosely be termed "chiefdoms". These various groups doubtless interacted, both productively (trade, social exchange and agreed marriage) and negatively (raiding to steal livestock and perhaps to take prisoners, and even to take over territory). Brochs presumably provided enough defensibility to offer a degree of deterrence against the less desirable forms of interaction which might be expected locally, though they would not have withstood prolonged siege warfare – which in itself says much about how the builders perceived their wider world.

It is possible to imagine economic models for communities living in and around brochs, and while this might have been possible in the more favoured parts of Orkney or Caithness (both of which exported grain in late medieval times), neither the Western Isles or Shetland seem likely to have been able to support a subsistence economy founded principally on the cultivation of grain, though what grain could be produced would have been a valuable resource. Reliance on pastoralism and on the use of coastal and marine resources would have balanced such an economy more broadly, especially if exchange or barter operated between nearby communities with access to different resource bases.[102]

However, the feasibility of theoretical economic models is inter-twined with the particular model of social structure which is assumed. Primitive communalism, client-elite relationships, inter-group collectivities (very close to a chiefdom society), a proto-feudal or even a full-blown feudal system have all been suggested at various times. Each would have made subtly, sometimes radically, different demands upon the resources available. The sole indisputable fact remains that each broch must have

[101] Stuart 1857, 192
[102] Fojut 1982a

been built by a locally-available workforce, sustained by locally-available resources for at least as long as it took to build.

Once built, brochs may well have served a variety of functions, or at least acted as bases for a mix of activities which varied widely from site to site and from time to time. Some brochs went on to become the cores of more extensive settlements, while others seem to have been abandoned not long after they were constructed. Many brochs undoubtedly served as farmhouses in later years, but whether any brochs were built primarily as farmhouses is likely to remain an open question. It is hard to escape the impression, especially when standing next to a broch such as Mousa or Dun Carloway, that brochs were originally defensive, if only in that they were intended to offer outward vantage, impress the viewer and suggest the invulnerability of their possessors, and that thoughts of agrarian domesticity were not paramount in their builders' minds. On the other hand, the broch at Edin's Hall gives much more of an impression of having been influenced by broch architecture but remaining rooted in a different tradition of very large wooden roundhouses – though if Edin's Hall's "broch" was roofed, which has been doubted, it would have been one of the largest roundhouses ever identified in northern Britain.

f) Conclusion

In conclusion, despite two centuries of study, most of the basic facts about brochs, beyond physical measurements of surviving structures, remain conjectural, with interpretations usually based upon a very small sample of evidence, selectively interpreted, fitted to "off-the-shelf" social models. The revision of explanatory narratives will continue as new evidence emerges and as old evidence is reviewed: every few years brings another brave attempt to present a unified and coherent account of the issues discussed here[103] only to see each effort, rather than unifying the field of study, simply add fresh fuel to debate.

It remains true, as Stewart sagely remarked in 1956, that "it is easier to guess why the broch came into being than how".[104] But neither question has yet been answered conclusively.

[103] Hedges and Bell 1980; Armit 2003 and most recently Romankiewicz 2016.
[104] Stewart 1956, 21