



Spring Newsletter 2022

Dear Scottish Group members,

Welcome all to another Spring newsletter!

With the warmer weather back on its way we have a new round of exciting articles focusing on Radiocarbon dating and the illustrative process! As everyone gears up for another year of exciting archaeological discovery and interpretation we'd love to share what you're discovering and how you're engaging with the archaeological world over the upcoming year!

As usual, if you have any comments or queries about the Scottish Group or any of the following articles, feel free to get in touch with us through our email, secretary.cifa.sg@gmail.com, or on our [Facebook](#) and [Twitter](#). We also have information on the group's [CIfA webpage](#).

Keep safe!

Josh Gaunt BA MCIfA

And the Scottish Group committee

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Radiocarbon-dating – is the humble hazelnut shell archaeology’s ‘silver bullet’ (or not)?

Torben Bjarke Ballin, Lithic Research

INTRODUCTION

Approximately 30 years ago, Linick *et al.* (1989) published a paper with the title ‘*Accelerator mass spectrometry: The new revolution in radiocarbon dating*’. This paper presented a new dating method, which allowed very small amounts (1mg or less) of carbonaceous material to be dated, where up to this point of time 1000 times more carbon had been required. Another benefit was that if for example one burnt hazelnut shell was dated in this manner, the date of this piece from one specific year would be much more precise than dates of wood from trees which could be hundreds of years old or, in the case of oak, thousands of years old.

Since then, the AMS-dating of particularly burnt hazelnut shells has become common, if not the favoured approach to the dating of archaeological sites, contexts and objects, and many archaeologists appear to consider the AMS-dating of burnt hazelnut shells a kind of ‘silver bullet’ which solves all our dating problems, and which cannot be challenged. However, is hazelnut-dating really that watertight?

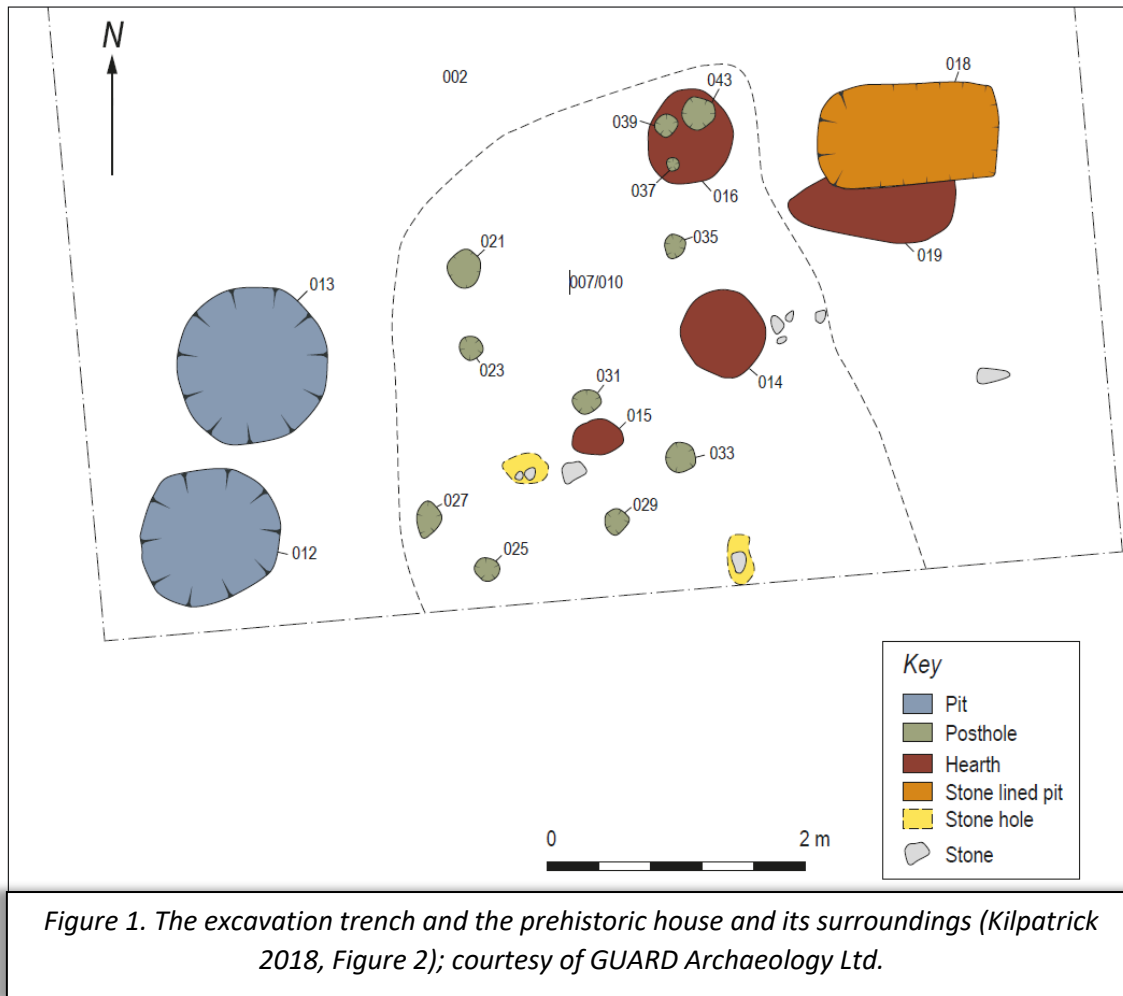
Over the last many years, the author has experienced quite a few cases where a specific date was expected, due to the context of a sample or the nature of the context or feature, but where the returned date was considerably older than the expected date. The question was whether hazelnut-dating, no matter how generally useful it was, really was beyond scrutiny?

While visiting Moesgaard Museum outside Aarhus, Denmark, he discussed the matter with the Head of Moesgaard Museum’s Conservation Department, Dr Peter Hambro Mikkelsen, who informed him that the museum’s guidelines for the extraction of samples for radiocarbon-dating included a note of caution regarding the use of burnt hazelnut shells for archaeological dating: ‘*Hazelnut shells may also be problematic [to use for C14-dating], as the shells are quite dense and therefore tend to resist the action of their environment to such a degree that they are difficult to break down. This means that a hazelnut shell may potentially be very old and represent later intrusion. In one case, a single hazelnut shell was C14-dated with charcoal from the same context – but the two dates differed considerably. The hazelnut shell correctly dated Stone Age activity [in the area] – but the charcoal, the context and the archaeological site were dated to the Iron Age*’ (Hambro Mikkelsen 2020, 326). Dogma had been challenged.

The purpose of the present note is to present a case study from Kilmoluaig on Tiree, excavated by GUARD Archaeology Ltd. (Kilpatrick 2018), which clearly demonstrates why hazelnut-dates should be used with caution.

THE CASE: KILMOLUAIG, ISLE OF TIREE, INNER HEBRIDES

At Kilmoluaig on Tiree, GUARD Archaeology Ltd. excavated a prehistoric house, defined by the presence of 11 postholes, four hearths, two large pits and one stone lined pit (Figure 1). The house may have been orientated north-south, with three hearths inside the house (Hearths 014, 015, 016)



and one east of the building (Hearth 019), whereas the two large pits (Pits 012, 013) were located outside and west of the house. The hearth east of the house was cut by the stone-lined pit (Pit 018).

Two radiocarbon-dates (SUERC-93243 and SUERC-93244) indicates that the site was visited in the Late Mesolithic (7321-7083 cal BC and 7048-6816 cal BC, respectively), but none of the lithics or the pottery is diagnostic of that period. The former date was based on a sample obtained from Pit 018 and the latter on a sample from Hearth 016 *on top of* Occupation Layer 010, both samples being hazelnut shells. The recovery of one LN/EBA scraper (defined by a pressure-flaked, acute working-edge) from Pit 018 suggests that this feature cannot have been constructed prior to this period, and the radiocarbon-dated LM hazelnut shell must therefore be residual, that is, it represents later intrusion. Furthermore, the occupation Layer of the prehistoric house yielded two scrapers of a similar character and date, which means that the hearth *on top of* this layer must be of this date or later, and the radiocarbon-dated LM hazelnut shell must therefore *also* be residual. Pottery sherds in floor layer 010 and in Pit 018 (identified by Beverley Ballin Smith, GUARD Archaeology Ltd.) also supports a late date for these contexts, with some sherds being Middle Neolithic and some Early Bronze Age.

That is, both hazelnut shells had been lying dormant in the local environment for approximately 4500 years until they finally became incorporated into a Bronze Age floor layer and a possibly even later stone-lined pit!

CONCLUSION

To sum up: AMS-dating of burnt hazelnut shells clearly have an important function as a means of providing precise dates on the basis of very small amounts of carbon from prehistoric sites. However, it is, in this analyst's view, not a 'silver bullet' which can be used without caution, and it is necessary in all cases to carefully consider whether there may be any reasons to doubt a date based on an almost indestructible hazelnut shell.

ACKNOWLEDGEMENTS

I am grateful to Project Manager Bob Will and GUARD Archaeology Ltd. who permitted me to use unpublished material relating to the Kilmoluaig site, and to pottery specialist Beverley Ballin Smith for information on the site's pottery.

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The Illustrative Process Of Documenting Mortlach & Cabrach Burial Grounds

Thomas Small BA MA MCIfA

I was approached by Keith Mitchell in early 2021 and asked if I would be able to provide the Moray Burial Ground Research Group, (MBGRG), with a compilation of burial ground plans ranging across a variety of periods. Upon examining the initial plans and photographs and having extensive experience of drawing up a variety of archaeological site plans and building elevations, I was confident compiling the plans would, by and large, be a smooth process.

In fact, certain plans were indeed very straightforward, others less so. The most straight forward plans to draw were, as might be expected, the most recent burial grounds: typically, these are what might be described as 'uniform' in shape, in that the graves are consistently spaced apart from each other, and at a consistent space from the paths and boundary. The gravestones themselves also demonstrate a consistency in their size, orientation and dimensions. Similarly, because they are so recent, we rarely see broken or fallen gravestones. All of these factors mean an illustration aimed primarily at giving the visitor information relating to the location of a particular gravestone, can be quite schematic. A good example of this is Mortlach's Area D, (Fig.1), where the rows of gravestones are shown simply with a dashed line and the number of the gravestone at either end of the row only: the ease with which one should be able to locate themselves is apparent and reflected in the simplicity of the illustration. Accordingly, these areas could be drawn with reference to a simple sketch plan of the site which was then combined with the outline council plan of Mortlach burial ground without memorials.

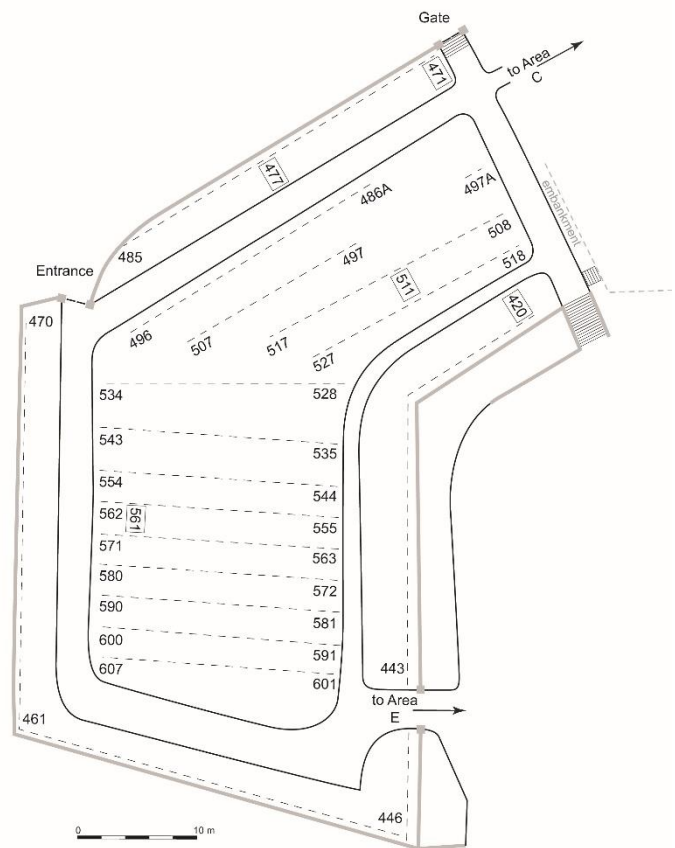


Fig.1: Mortlach burial ground, Area D.

In contrast it is extremely telling - and actually unsurprising - the plans which presented the most challenges were the older burial ground areas, in this case Mortlach's Areas A, B and C (Fig.2). Here the uniformity one can see in Area D is instead replaced by an interesting assortment of memorial typology and layout. This is not to say there is no order – there are, of course, broadly identifiable rows, but these are not uniform in character, insofar as they do not necessarily hold a consistent 'line' along the burial ground, and there is no consistency in space between each row. The gravestones themselves range across several centuries, and thereby reflect the styles and fashions of the period in which they were drawn. The sheer variety of gravestone necessitated a meaningful key be developed reflecting the typology of each different stone. (Again, this key was used in Mortlach's

Areas A, B and C, and also Cabrach burial ground.) The complexity of these areas meant in contrast to the more recent ones, a far more detailed plan was required in order to be able to navigate oneself through the burial ground. Indeed, such was the complexity of these earlier areas, sketch plans of the individual rows were ultimately required to help with the finalised drawing, (Fig.3). These were assembled by Keith and Helen Mitchell and, in conjunction with a relevant photographic record, showed an overall plan of the area divided into rows. Within these rows the gravestones were shown with a designated number and their condition, (standing, fallen etc.).

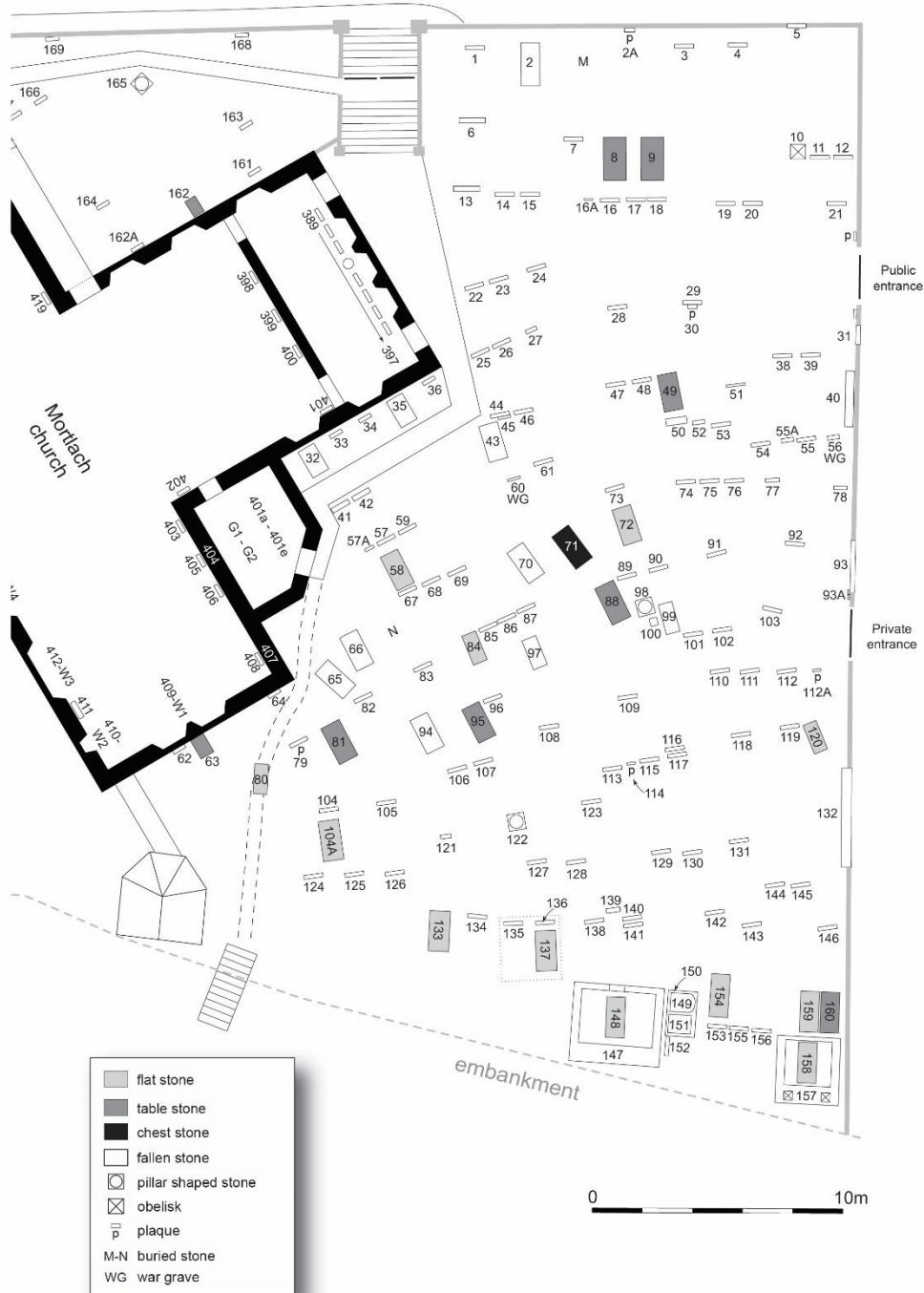


Fig.2: Mortlach burial ground, Area A.

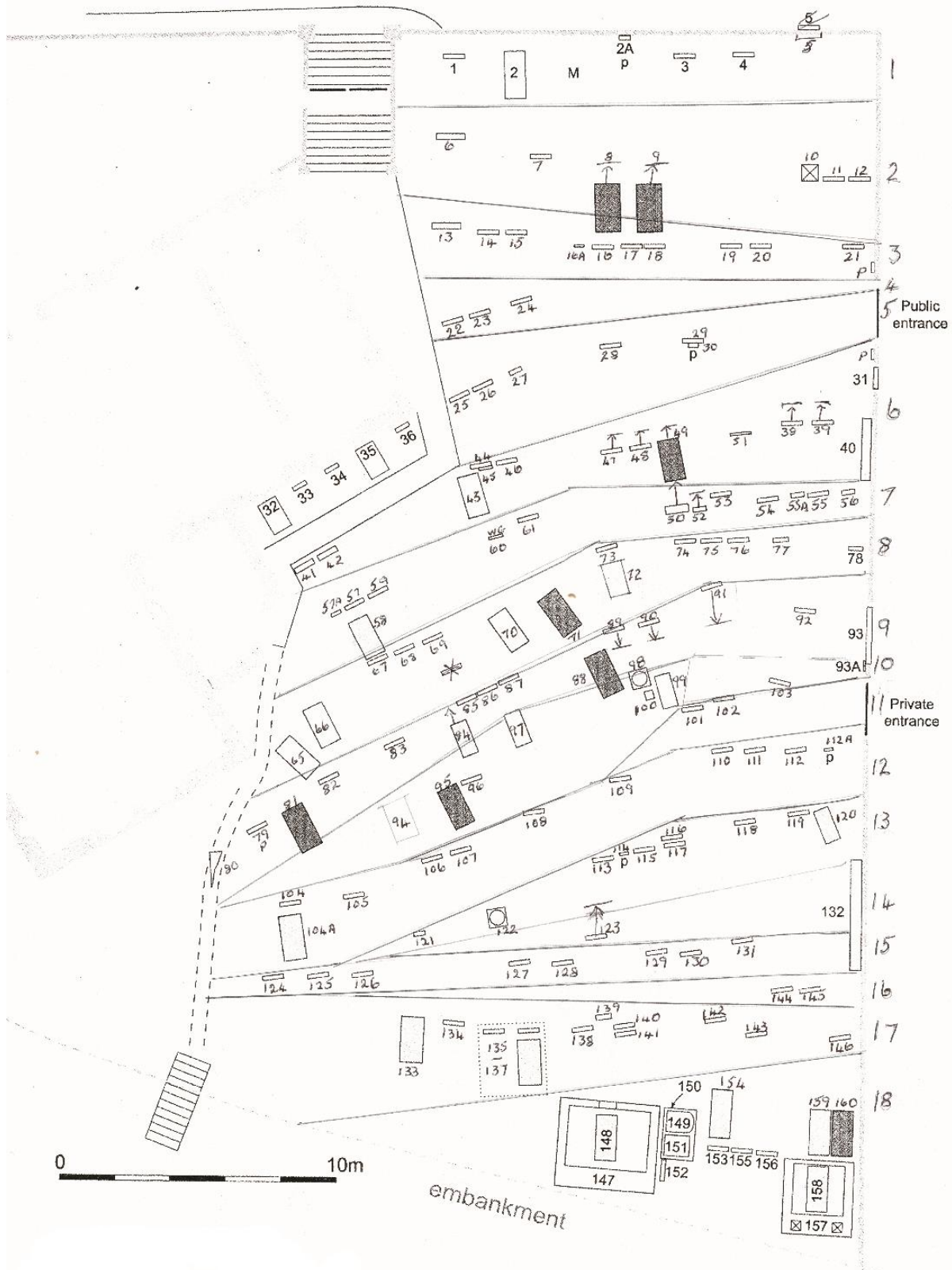


Fig.3: Sketch plan of Area A.



Fig.4: Aerial view of Cabrach.

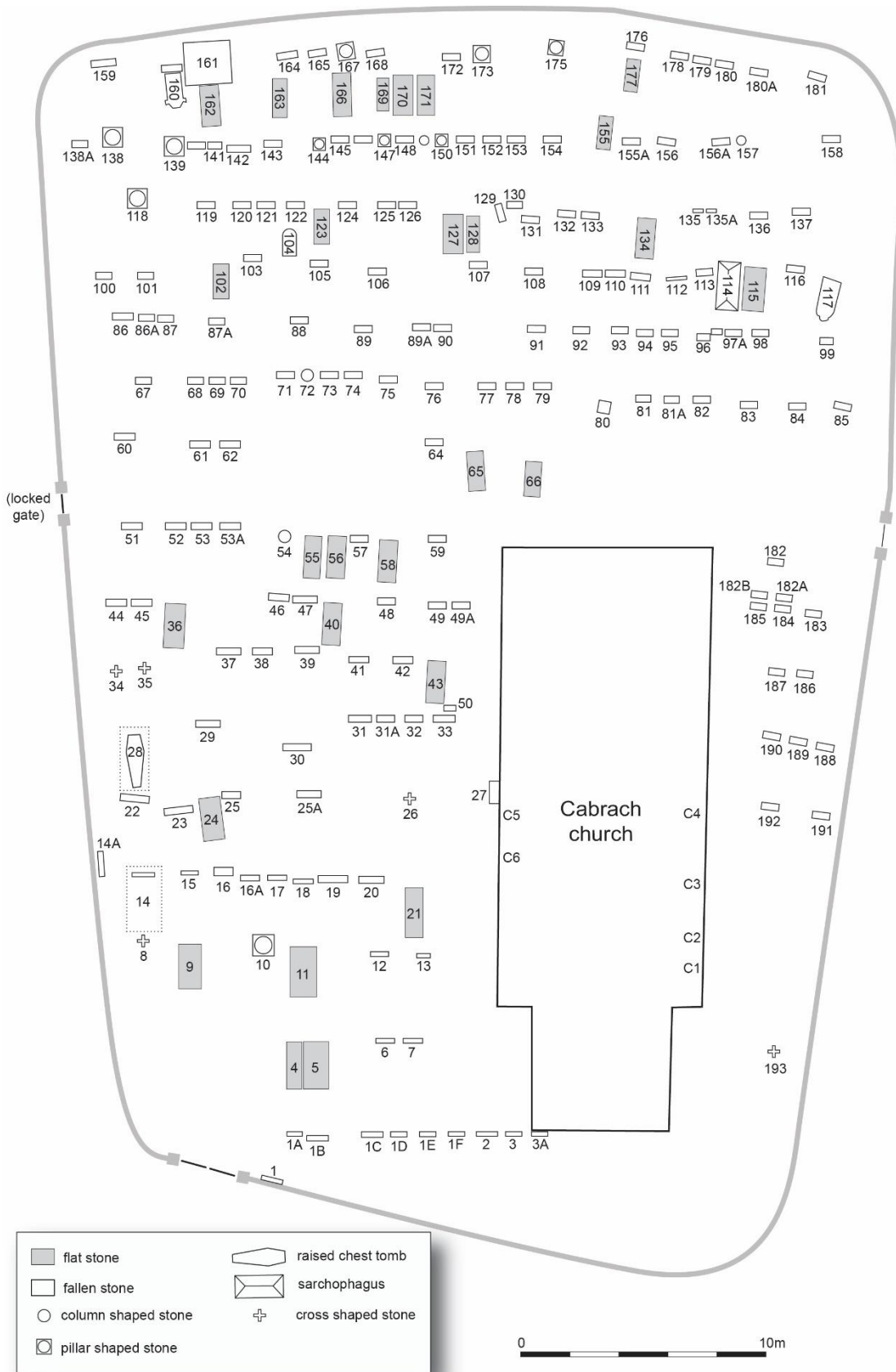


Fig.5: Plan of Cabrach.

Undoubtedly, these plans proved invaluable in assembling the final drawing. This method is of course a time-consuming process when compared to how quickly such data can be gathered using the modern technology of Lidar, (Light Detection and Ranging), scanning technology. However, it is worth noting this apparently laborious method of recording means, as part of the process, the researcher gains an increased understanding of the area being recorded. This 'immersive' process is something all researchers, (and of course illustrators!), will recognise.

As an illustrator, it is worth pointing out just how useful aerial photography was in drawing up site plans, precipitated by the increasing use of drones. Viewing photographs taken from the ground is of course useful up to a point, and can provide wonderful detail, but for the purposes of providing a plan, in order to locate oneself, it is of limited value. Aerial footage, on the other hand, is immensely helpful in that it literally gives us a bird's eye view of the desired area. This was so much so in the case of Cabrach, it was relatively easily to trace off most of the stones from the aerial photograph alone, (Fig. 4 & 5). Similarly, aerial imagery was also helpful in identifying discrepancies apparent in the plan of Mortlach church which I was able to identify as being incomplete.

As I write this The Church of England has commissioned Atlantic Geomatics to record, with the use of Lidar, the entirety of their burial grounds under the title 'The National Burial Grounds Survey', (Fig.6). Ultimately, the aim is to have their burial grounds as a publicly accessible map which will be linked to an associated database of information through the Church Heritage Record. This is undoubtedly a forward thinking and impressive undertaking. No less impressive, however, is the work undertaken by voluntary groups such as the MBGRG who produce their excellent surveys with a comparatively small amount of funding and without access to state-of-the-art technology, but with an immense dedication to the task.

www.smallfindsdesign.co.uk



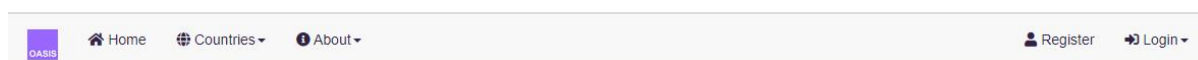
Fig.6: Screenshot of Kirkburton churchyard plan and associated database information, produced as part of The Church of England's, 'The National Burial Grounds Survey', by Atlantic Geomatics.

OASIS V in Scotland- a long time coming...

Peter McKeague

In the [SGCIfA summer 2020 newsletter](#) I described some of the exciting changes being introduced to the OASIS form for reporting archaeological fieldwork in Scotland. The note anticipated the relaunch of the form in Scotland following a successful roll-out in England. It has taken longer than expected to customise the form to meet Scottish requirements, but we are now nearing a release date. We plan to roll out the new form (OASIS V) by early Summer 2022. HES will be arranging online training sessions for both Historic Environment Record Officers and existing OASIS users. Archaeology Scotland will also provide training and support for community groups and researchers used to reporting their work through the existing Discovery and Excavation in Scotland form.

We will need to migrate existing records in OASIS IV to the new form OASIS V and will take the lead from the Archaeology Data Service on the best approach to do this. In the meantime, please continue to use the existing OASIS IV form for project work undertaken in Scotland and use OASIS V for reporting projects in England.



OASIS

OASIS V is the brand new version of the form.

Only try and login to OASIS V if you have been instructed to do so and have had your new account and user details verified by the ADS.

[➔ OASIS IV LOGIN](#)

[➔ OASIS V LOGIN](#)



OASIS is an online reporting form enabling archaeological and heritage practitioners to provide information about their investigations to regional Historic Environment Records (HERs) and respective national heritage organisations.

As well as being an information-gathering tool, researchers may share reports with HERs for public release in the Archaeology Data Service (ADS) Library.

The ADS, in addition to making the reports available online for access to the wider public, undertakes the curation and archiving of the digital files, ensuring long-term preservation.

Membership

Membership of the Scottish Group is free for CIfA members and is £10 per year for non-CIfA members. Please feel free to circulate this newsletter and we would ask you to encourage your friends/colleagues to join the Group.

For more information, [see here](#).

Keep in touch with us via the Scottish Group's Facebook page, where information about events and the work of the Group will be publicised.

Newsletters are published four times a year and contributions from members are always welcome.

Our next issue will be released in July/August 2022.

To make a contribution to forthcoming editions of the newsletter please email josh.gaunt@headlandarchaeology.com or secretary.cifa.sg@gmail.com

Upcoming meetings

As a member of the CIfA Scottish Group, you have the right to attend our group committee meetings if you so wish. Committee meetings are held each quarter. Members can attend in person (when possible) or remotely with an internet connection via our videoconferencing facilities.

The next meeting is TBD – April.

If you would like to attend, please send an email to secretary.cifa.sg@gmail.com.