



# Islay and Jura Primary Schools Archaeology Project: Archaeological Report



Darko Maričević, Robert Fry, Alexandra Knox and Sarah  
Lambert-Gates

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## 1. Introduction

### 1.1 Background

The Islay and Jura Primary Schools Archaeology Project (IJSAP) was initiated in August 2016 by enabling teachers and children from Bowmore, Port Charlotte, Keills and Port Ellen Primary Schools to visit the University of Reading excavation of the Neolithic chambered cairn Slochd Measach (Giant's Grave) near Nerrabolls (Maričević and Mithen 2016). The visits were organised by Islay Heritage following preparatory work undertaken within the Schools and have in turn supported a range of follow-on work, some of which is featured on the Islay Heritage website (<http://islayheritage.org/schools-project/>).

### 1.2 Islay and Jura Primary Schools Archaeology Project: Stage 2

The Stage 2 of the project was designed to support the Schools to undertake their own archaeological fieldwork on Islay. Small Isles Primary School from Jura joined in at this stage of the Project. Each School 'adopted' a monument in the vicinity of their School, with Jura children joining in with Keills Primary School on Islay. The children worked with a team of professional archaeologists to undertake archaeological and geophysical surveys. They were introduced to several archaeological recording techniques including plan drawing, photography, topographic and geophysical survey. They were asked to think about the landscape, and how it might have changed over time. They have recorded their own on-site documentary style videos and produced drawings of what they thought the sites may have looked like in the past. They were also encouraged to think about what activities might have once taken place at the monuments. At the end of Stage 2 of the project the Schools held a joint exhibition in the Gaelic College, Ionad Chaluim Chille Ile, Bowmore, entitled *Islay and Jura School's Heritage Exhibition*, which championed the children's achievements and creations.

In addition to the primary objectives of the project, aimed at enriching children's education and enabling the children to make a connection with their local heritage, the surveys gained significant new insight into the surveyed monuments. Three of the sites surveyed by the project are Scheduled Ancient Monuments of national importance and the fourth has a potential to be ground breaking site of its kind, also on the national scale. The following report gives the brief introduction and description of the monuments, provides the archaeological context and the scholarly background to these sites and describes the results of the surveys undertaken by the IJSAP.

### 1.3 Methodology

Each of the four surveys followed the same methodology and daily set up. Once on site, the children were introduced to the monuments in their landscape setting and told what they will be doing and what to expect from the day. They were then divided into four activity groups, each led by one of the Islay Heritage archaeologists. The groups were then rotated during the day so that all children gained the experience of each particular archaeological technique.

Group 1 drew a measured plan of part of the site with the help of measuring tapes and the use of scales. Children were shown how to accurately represent landscape features and structures by using site grid, measurements and how to transfer these at appropriate scale onto the graph paper. They were then shown how to record the same part of the monument digitally in 3D by using *Leica* GPS rover. These measurements were added to the overall topographic data to produce contour surveys and 3D surface models. The children were encouraged to think about the contrasts and similarities between the two processes, one based on manual skills and relative to the site grid and the other based on satellite technology with the digital interface and GPS capabilities.

Group 2 learned about archaeological photography and photographic recording. Children were shown how to photograph landscape features, how to compose the frame, how to use the photographic scales and how the natural light and shadows affect their results. They also filled in their own photographic record sheets. In addition they also took wide angle photographs with a camera mounted on an extendable boom and operated by a mobile app. The children got to appreciate the benefits of elevation on what they were able to photograph in the landscape.

Group 3 recorded the sites in video format with the help of the schools' iPads. The children were encouraged to verbally express and describe what they were learning whilst gaining confidence by speaking in front of their friends. They took turns filming each other and filmed documentary style videos, both close up and with attached portable microphone, which enabled them to walk and talk while being filmed from distance.

Group 4 carried out electrical resistance survey of the site. The children were introduced to the scientific principles of the technique and the practical workings of the resistivity meter. They learned about the electrical current and about the different properties of the ground. The instrument used in each survey was *Geoscan RM15* resistance meter with twin probe array with 0.5m probe separation. All surveys were comparable in being done at 0.5m reading intervals and 0.5m traverse spacing.

In the afternoons the team and the children went back to the classroom where the results of the geophysical and GPS survey were downloaded and shown on the screen. The archaeologists explained the results and made the children appreciate their own fieldwork and achievement. Each day was ended by children expressing their vision and understanding of the sites by making a drawing of the monument as they imagine they looked like in the past.

## 2. Sites and survey results

### 2.1 Cill a'Bhuilg burial ground survey by Bowmore Primary School

Cill a'Bhuilg, Gartmain, (Figure 1, NR 330 605) is thought to be a site of a possible burial ground and a chapel on account of its *cill* place name. The shape of its rounded enclosure, which is similar to other early Christian chapel sites in the west of Scotland and on Islay, was elevated upon a level round platform (Figure 2). The site seems to have always been regarded locally as a place of ancient burial and was, therefore, never ploughed over. It has been designated as a Scheduled Ancient Monument (SM2355) and protected by law, but very little is known about its history and when exactly it dates to.

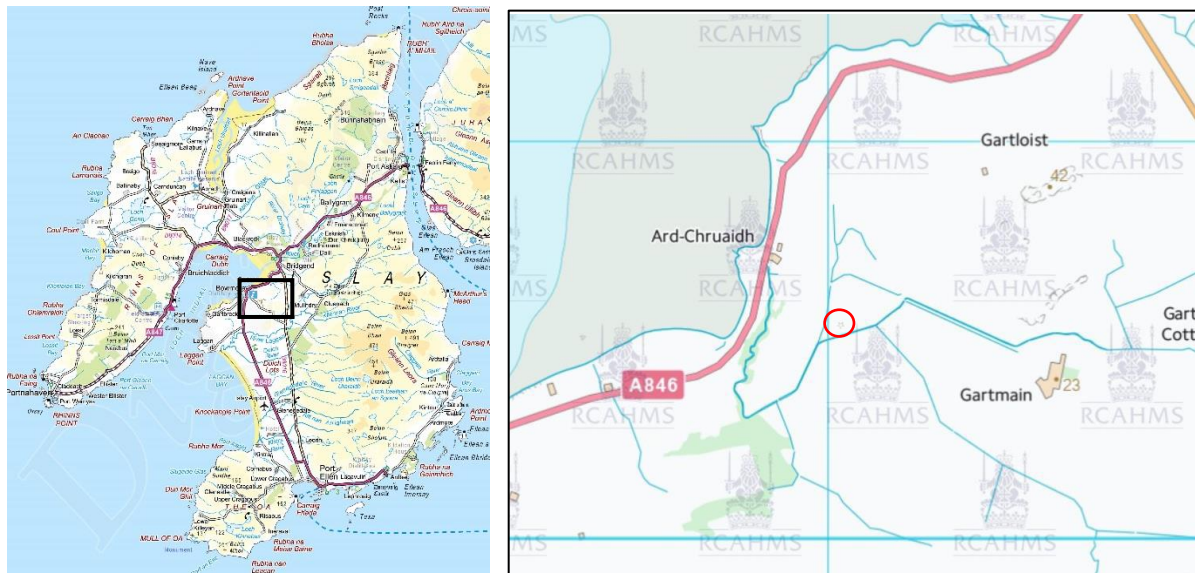


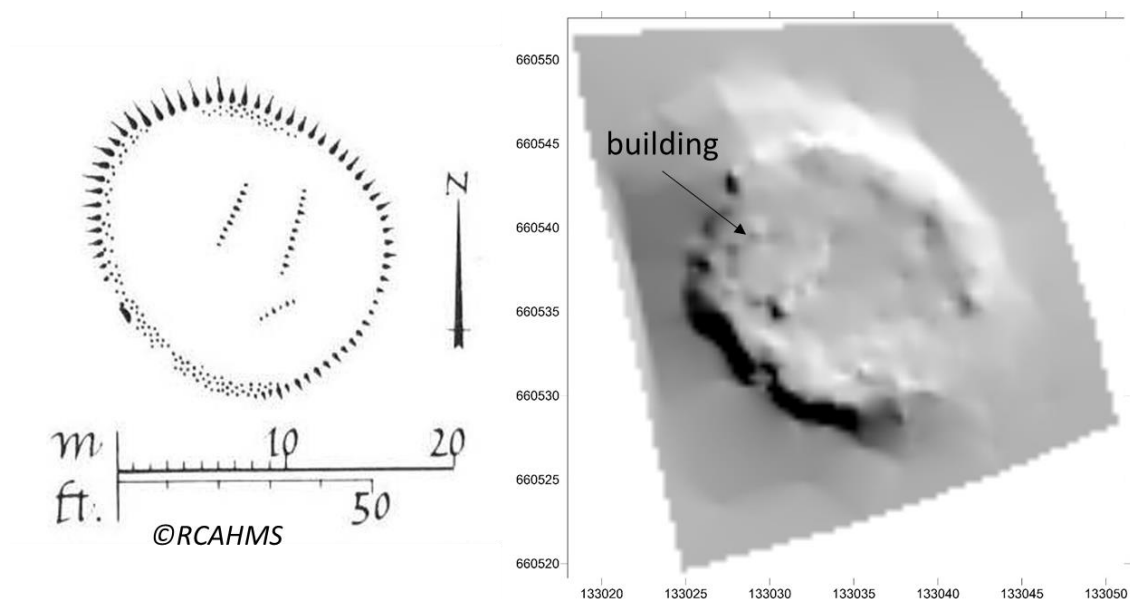
Figure 1 Maps showing the location of Cill a'Bhuilg.





*Figure 2 Cill a'Bhuilg on the day of the survey looking southeast.*

The children from Bowmore Primary School braved the weather over two days to carry out topographic and the electrical resistance survey of the burial ground enclosure (Figure 4). The survey produced the first record of the monument since the Royal Commission's plan drawn in 1979 (Figure 3, left). The topographic data that we collected was used to make a shaded relief (Figure 3, right) with added artificial lighting to create shadows that bring forth features almost indiscernible to the naked eye, such as the outline of a building in the west part of the enclosure (Cregeen 1960:19-20, RCAHMS 1984:159). Could this be the remains of the chapel? The E-W orientation of the building perhaps adds support to this interpretation. However, the geophysical survey suggests that this was not the earliest structure inside the enclosure.



*Figure 3 Left: RCAHMS survey plan of the burial ground (RCAHMS 1984:159, C); Right: Topographic shaded relief produced from the topographic data collected by the IIPSAP survey.*

Electrical resistance is a geophysical technique which measures and maps the differences in resistivity of the ground to the electrical current. The enclosure bank appears black in the resistivity plot due to its high resistance. The surrounding low resistance is from a ditch that surrounded the platform, which has long since silted up. On the outside of the ditch another partial ring of higher resistance indicates the existence of either another smaller bank or a wall (Figure 5). The survey has for the first time discovered an earlier building positioned centrally inside the enclosure and orientated not E-W, but NE-SW (Figure 5), which is not unusual for early medieval chapels on Islay, e.g. Cill Eathain, Duisker 2 (RCAHMS 1984). The building was about 7m long and about 5m wide. It was probably facing the enclosure entrance in the southeast, marked by the break in the bank made of stone rubble.

Thus, the survey not only produced up to date digital record of the site, but broke new ground in its understanding by proving the existence of a structure, probably a chapel, in the interior of the enclosure. Other previously unknown features have been identified, such as the outer ditch and walling. The presence of the surrounding ditch explains how the platform was created, although it is less clear why this was necessary. It is possible that the chapel was elevated simply to keep it dry on an otherwise low lying site, however, the raised position and the presence of the enclosure would also make the chapel more imposing and distinct and easily recognisable as a place of worship.



*Figure 4 Dr Rob Fry explaining the resistivity meter.*



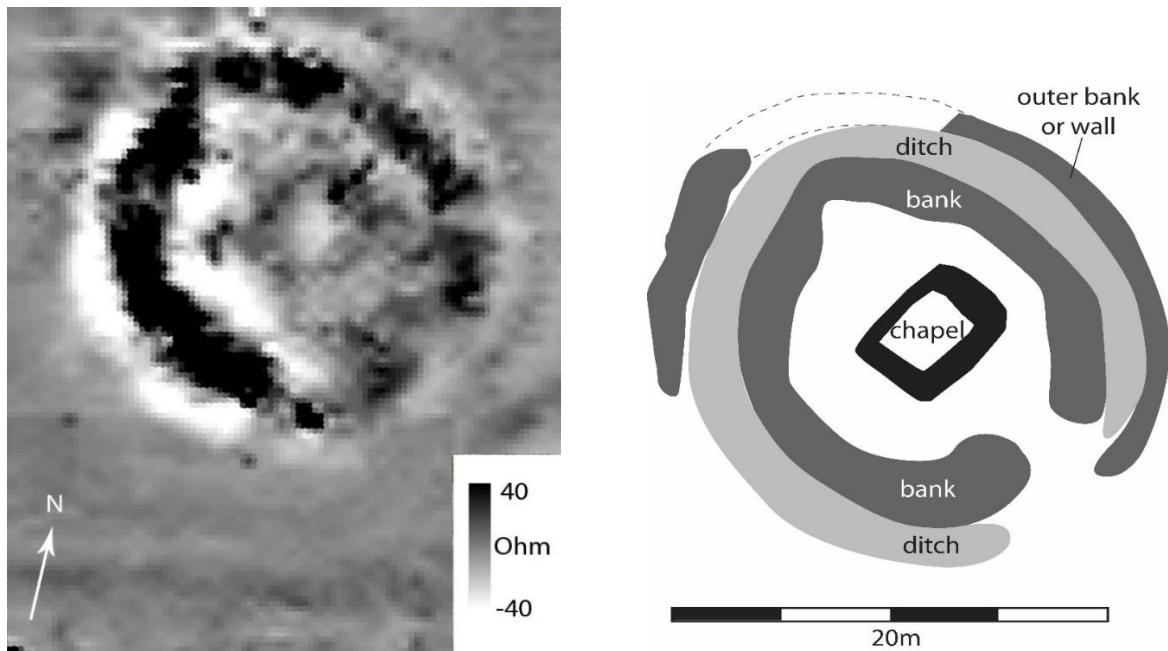


Figure 5 Resistivity plot (left) showing areas of high and low resistance with the interpretation diagram (right).



Figure 6 Bowmore Primary School children taking part in different archaeological activities at Cill a'Bhuilg.

## 2.2 Carnduncan cairn survey by Port Charlotte Primary School

Carnduncan (Càrn Dhonnchaidh) cairn is a Bronze Age burial cairn overlooking Loch Gorm (Figure 7, NR 239 672) and most likely dating to the 2nd millennium BC. It was never formally dated, but other similar monuments have been excavated in the Hebrides. It belongs to a group of 'kerbed cairns', so called on account of a kerb built of boulders, which surrounds the burial mound (Figure 8). Kerbed cairns vary in size from just over a meter to twenty meters in diameter. Carnduncan, at 17m, is one of the largest and the best preserved examples of this type on Islay (RCAHMS 1984).





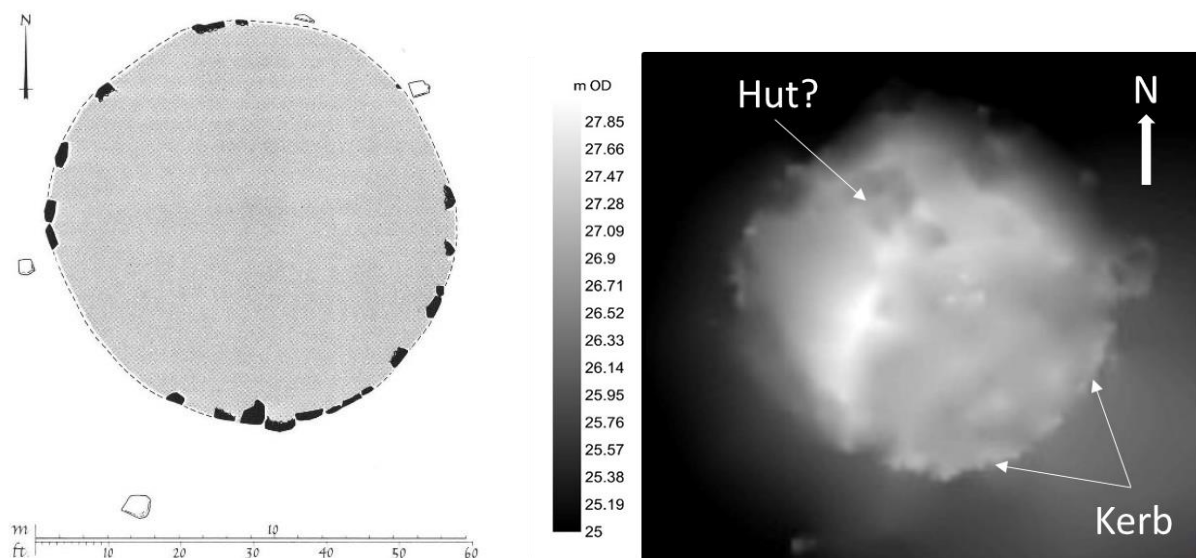
*Figure 7 Maps showing the location of Carnduncan cairn in relation to An Sidhean Bronze Age hut circles and field systems*



*Figure 8 Carnduncan cairn from the southwest*

The RCAHMS plan of the monument produced in the 1970's was the only archaeological record of the cairn prior to the Islay and Jura Primary Schools Project (RCAHMS 1984:52-3). Because of its good preservation, and a possible association with the nearby Bronze Age settlement and field system at An Sidhean, Carnduncan cairn has been designated as a Scheduled Monument (SM6247) of national importance, which means it is protected by law though the Ancient Monuments and Archaeological Areas Act 1979.





*Figure 9 Left: RCAHMS plan of the cairn (RCAHMS 1984:53, A); Right: Topographic survey of the cairn produced by the IJPSAP*

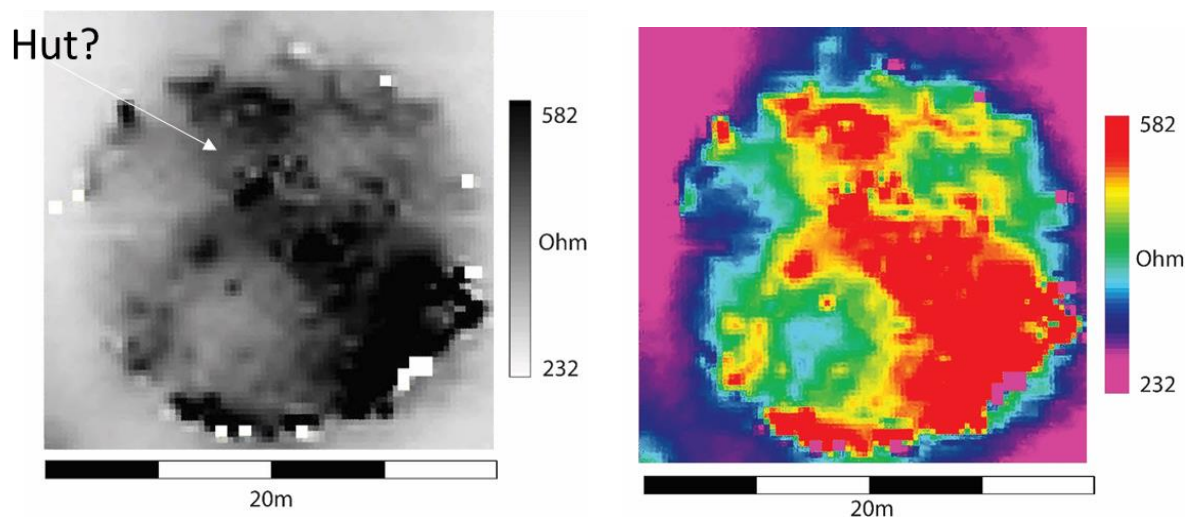
Detailed topographic survey of the cairn (Figure 9, right) allows us to map the surface irregularities and the hollows created by the erosion and also the robbing of the cairn in the past. It provides a 3D record of the monument and aids the interpretation. For example, it is possible that one of the hollows in the north part of the cairn may have been a small hut or a shelter inserted into the remains of the cairn at a later date (Figures 9 and 10).



*Figure 10 Children huddled in the hollow, which may have been a hut at the top of the cairn*



*Figure 11 Port Charlotte pupils carrying out geophysical survey and learning about photographic recording*



*Figure 12 Electrical resistance plot of the cairn showing the results in greyscale (left) and colour bands (right).*

The electrical resistance survey carried out by the Port Charlotte school children provides us with a glimpse into the internal structure of the cairn for the first time. In Figure 12, the image on the left shows the higher resistance in black and dark grey, while the lower resistance gets progressively lighter. In the image on the right the resistance values are accentuated in colour. The highest resistance in the ground is an indication of the presence of large stones, rubble



or stone-built structures. The areas of lower resistance contain more soil, with more moisture and is therefore a better conductor.

The survey suggests that not all parts of the cairn were constructed in the same way, which could mean that there were multiple phases of construction and modification. These could be, for example, related to the enlargement of the monument as additional burials were introduced. Unlike Neolithic chambered cairns, which were built to house collective portable human remains, the Bronze Age cairns were normally built for a burial of one or two individuals sealed and inaccessible underneath the cairn. Additional burials, however, were often inserted into the cairn. The burial rites practiced in the Bronze Age included both inhumation and cremation either in a stone cist, under a small internal cairn or in a cinerary urn. The excavations of Bronze Age kerbed cairns in the Western Isles have shown that the ground on which the cairns were built was often previously used for other purposes including settlement and cultivation (Branigan and Foster 2000).

Although the resistivity survey offers some clues about the make-up of the cairn, this only relates to its uppermost layers. Being relatively well preserved and standing up to 1.5m high in relation to the surrounding ground, the cairn is too substantial for the lower levels to be reached by the twin probe method used. This is especially true of the areas where the stone rubble is densest and closest to the surface. Alternative geophysical techniques with deeper penetration, such as ground penetrating radar (GPR) and electrical resistance tomography (ERT) would be better suited alternatives for any future geophysical work on the monument.

### 2.3 Kilbride Chapel survey by Port Ellen Primary School

The origins of Kilbride (Cill Bhride, NR 384 464) as a place of Christian worship go back to the Early Medieval period. A carved Latin cross, which stood at the east side of the chapel until the 1830s, is the only surviving relic from this early period (Figure 15, National Museums Scotland X.IB 194). A very similar carved cross was found in 1988 at the nearby site of Cnoc na Cille (Figure 15, Museum of Islay Life). The chapel site of Cill Tobar Lasrach continues this string of probable Early Christian sites located along the route, which was marked in prehistoric times by several imposing standing stones and other monuments (Figure 13). Kilbride chapel is a Scheduled Ancient Monument (SM 2332).



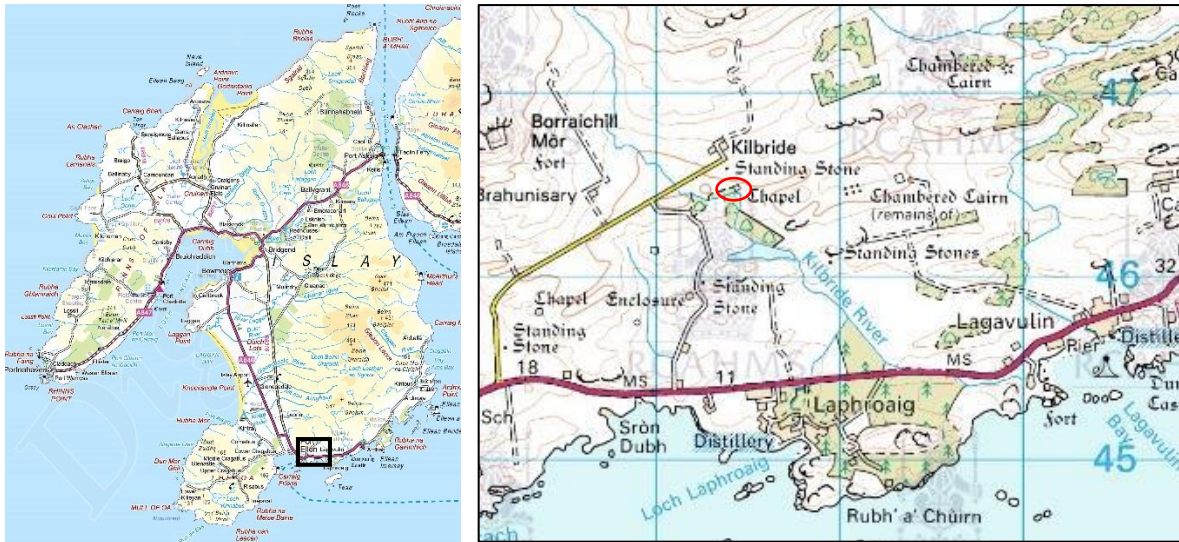


Figure 13 Maps showing the location of Kilbride chapel



Figure 14 Kilbride chapel looking towards southeast

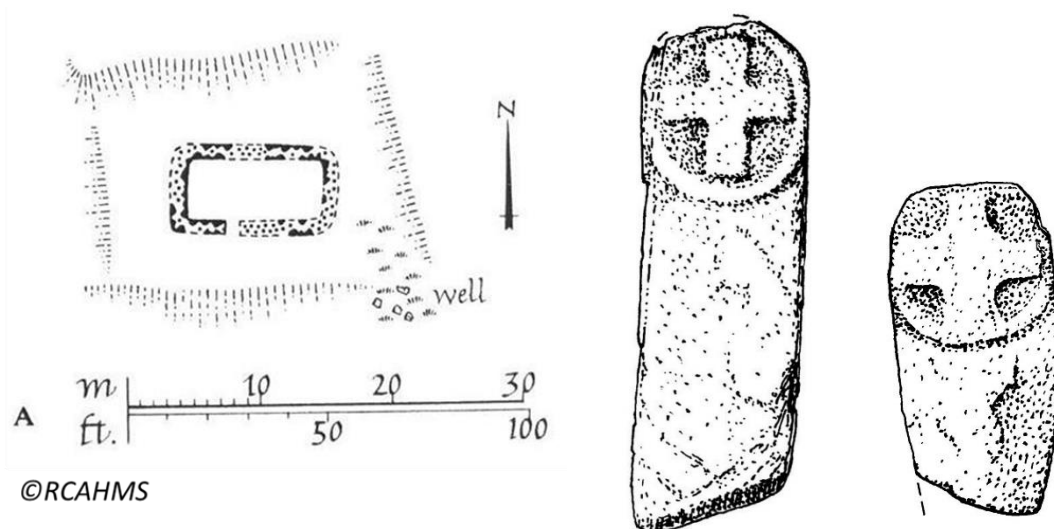
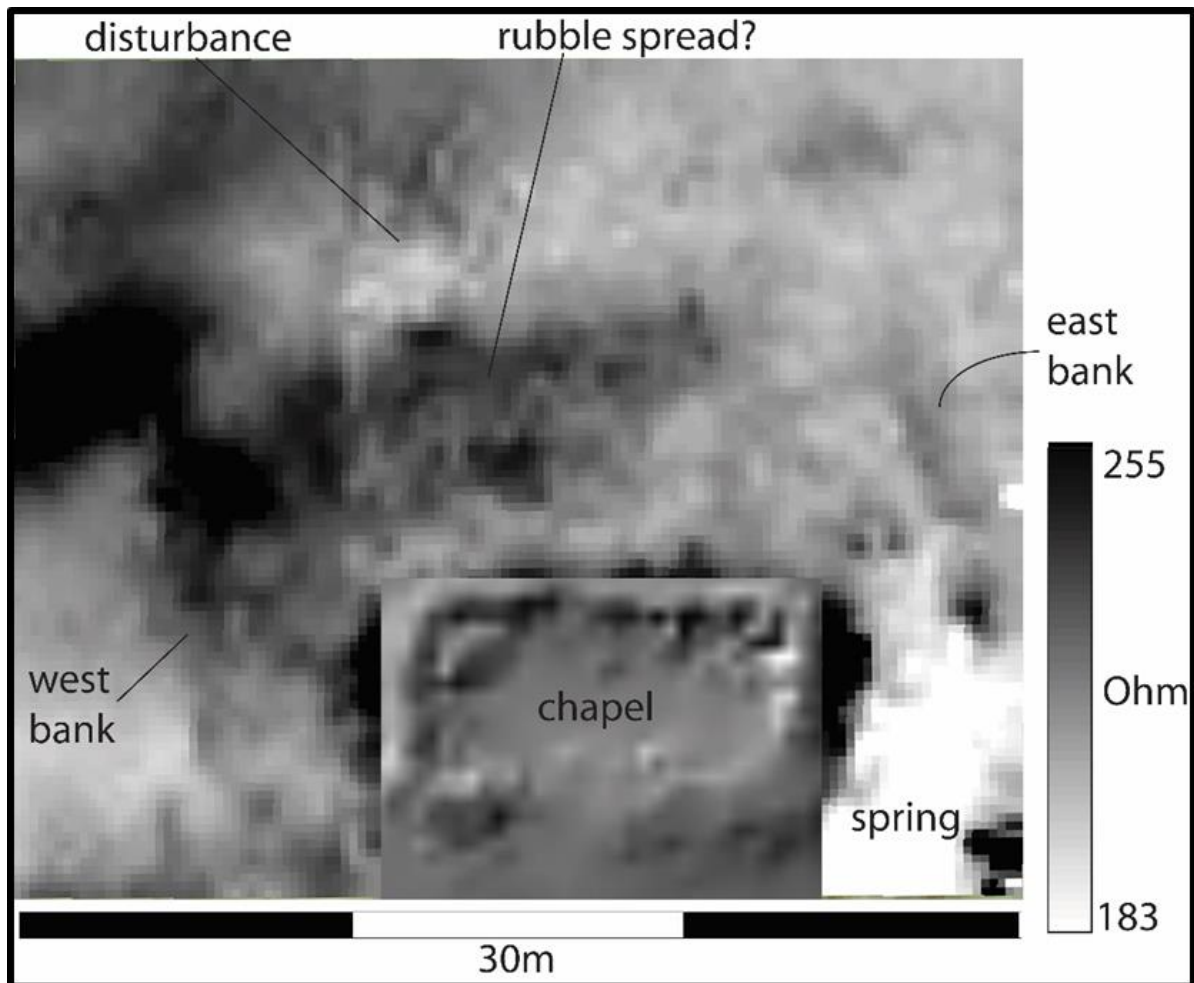


Figure 15 Left: RCAHMS plan of Kilbride chapel (RCAHMS 1984:193, A); Right: Crois an t-Sagairt (The priest's cross), Kilbride and Cnoc na Cille cross © Canmore

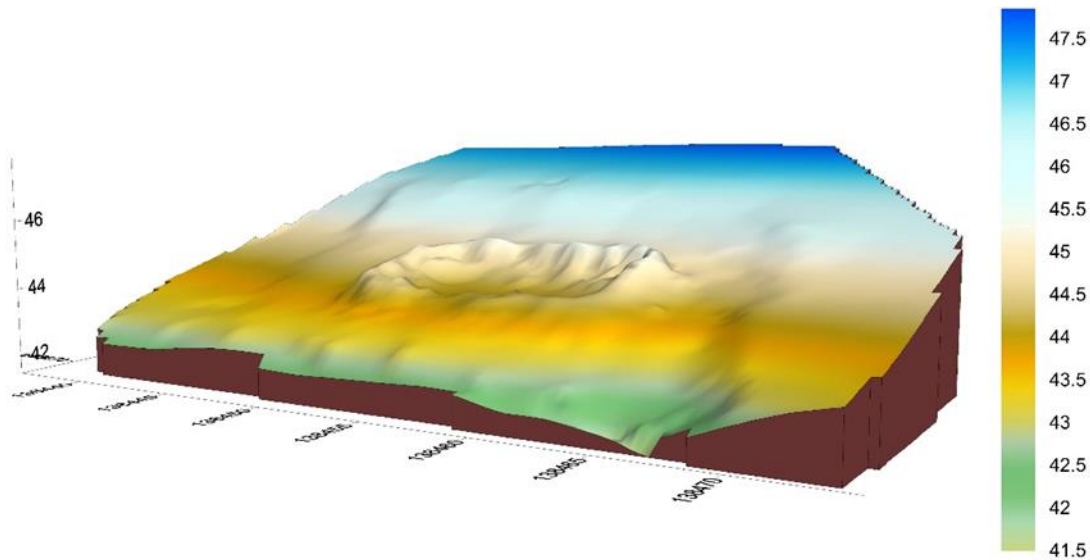
In 1651 the Synod of Argyll appointed a new church to be built at Kilbride as an attempt to replace kirks at Kildalton and Kilnaughton (Minutes of the Synod of Argyll). The said church was thought to be the one represented by the remains still visible at Kilbride (Figure 14) and surveyed by the RCAHMS in the 1970s (Figure 15, left). Recent research by Geoff Waters at the University of Edinburgh suggests that a new church was perhaps never built and that the chapel at Kilbride dates to the Late Medieval period (Waters 2013).

It is not known where the original chapel may have been in relation to the later one whose remains are visible on the site today. The geophysical survey carried out by the IJPSAP did not locate any possible structures in its immediate surrounding. It is very possible that the later church was built in the exact same place and that the building material was reused in the new construction. A large high resistance anomaly in the geophysical plot (Figure 16) may represent a spread of stone rubble, possibly relating the stone enclosure wall, which once stood around the chapel and has since tumbled.



*Figure 16 Combined electrical resistance plot and topographic relief*

The electrical resistance survey covered the area around the chapel, while the building itself could not be surveyed in this way due to the large quantity of loose rubble. The image of the chapel in the plot in Figure 16 is an inserted topographic relief, i.e. surface data, while everything around it is geophysical survey, i.e. below ground data. The low resistance near the bottom right corner is consistent with the waterlogged conditions around Tobar an t-Sagairt (The Priest's Well), which is in fact a natural spring. The high resistance in the same corner is from the stones that used to make up the structure over the spring.



*Figure 17 3D surface model of Kilbride chapel and the surrounding ground showing the outlines of the probable enclosure.*



*Figure 18 Port Ellen pupils taking topographic measurements used to produce the 3D surface model (left) and photography and video recording sessions with geophysics in the background (right).*

## 2.4 Loch nan Dealla crannog survey by Keills and Small Isles Primary Schools

The site surveyed by Keills and Small Isles Primary Schools was a crannog or an islet settlement in now mostly drained Loch nan Deala (NR 425 688, Figures 19 and 20). It was first discovered by Islay Archaeological Survey Group in 1959 (Celoria 1960) and then surveyed by the Royal Commission in 1978 (RCAHMS 1984:157). The RCAHMS' plan was published with the wrong orientation, but it noted correctly the remains of three stone-built structures, which they interpreted as Late Medieval or Post-Medieval buildings.



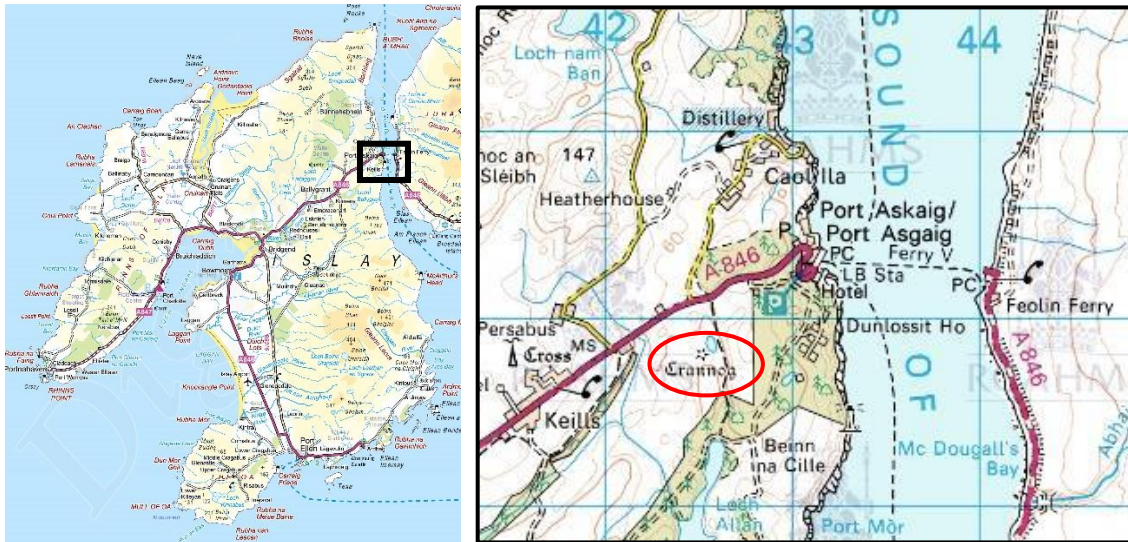


Figure 19 Maps showing the location of Loch nan Dealla crannog



Figure 20 Loch nan Dealla crannog from the south

In 1996 the site was re-surveyed by Mark W. Holley (1996, 2000) as part of his thesis on the artificial islet settlements in the Inner Hebrides. Holley sampled an oak timber he found protruding from the causeway for radiocarbon dating. Far from producing a Medieval or an Iron Age date, which would have been in keeping with the established thinking about this type of site, the timber was dated to 5205-4800 BC, i.e. the Mesolithic, which would be unprecedented. Holley thought that the timber may have been re-used bog oak and that the settlement itself was more likely to date to the Early Neolithic.

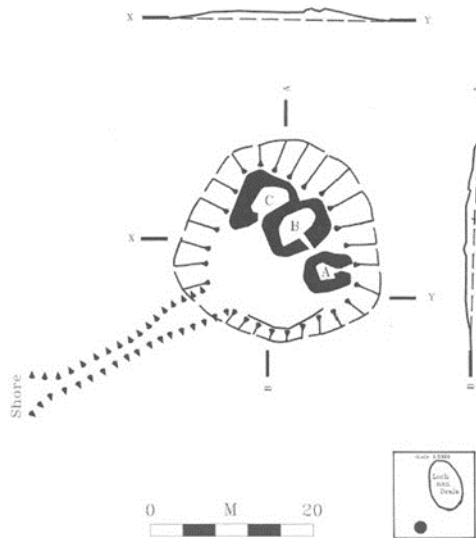


Figure 21 Plan of the islet settlement at Loch nan Dealla (Holley 2000: 204)

In the late 1980's in North Uist, archaeologist Ian Armit led a ground-breaking excavation of the islet settlement Eilean Domhnuill on Loch Olabhat (left). This was the first such site dating to the Neolithic. The excavation found that it had been occupied almost continuously between 3700 and 2600 BC (Armit 1989). On the surface, the Loch nan Deala structures resemble the Early Neolithic houses at Eilean Domhnuill more than any Iron Age or later architecture, but further work is needed on this site.

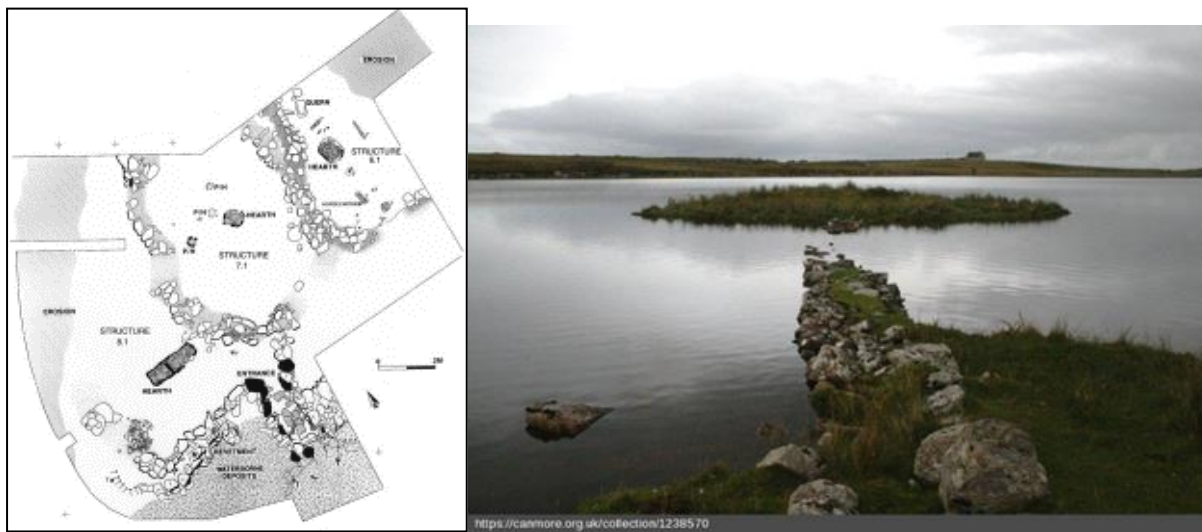
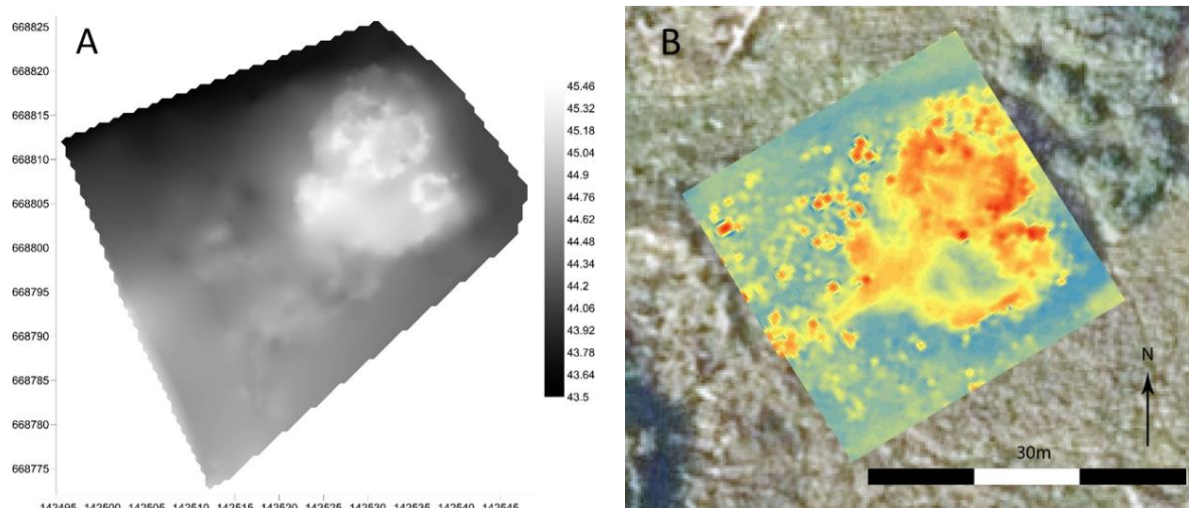
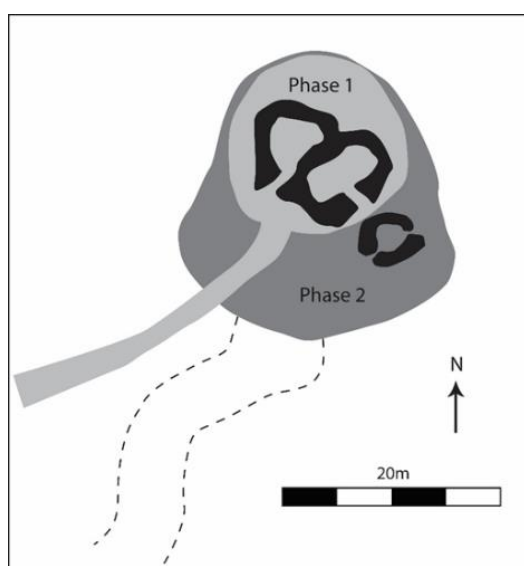


Figure 22 Left: Plan of structures at Eilean Domhnuill (Armit 1989); Right: Eilean Domhnuill in 2009 ©Canmore





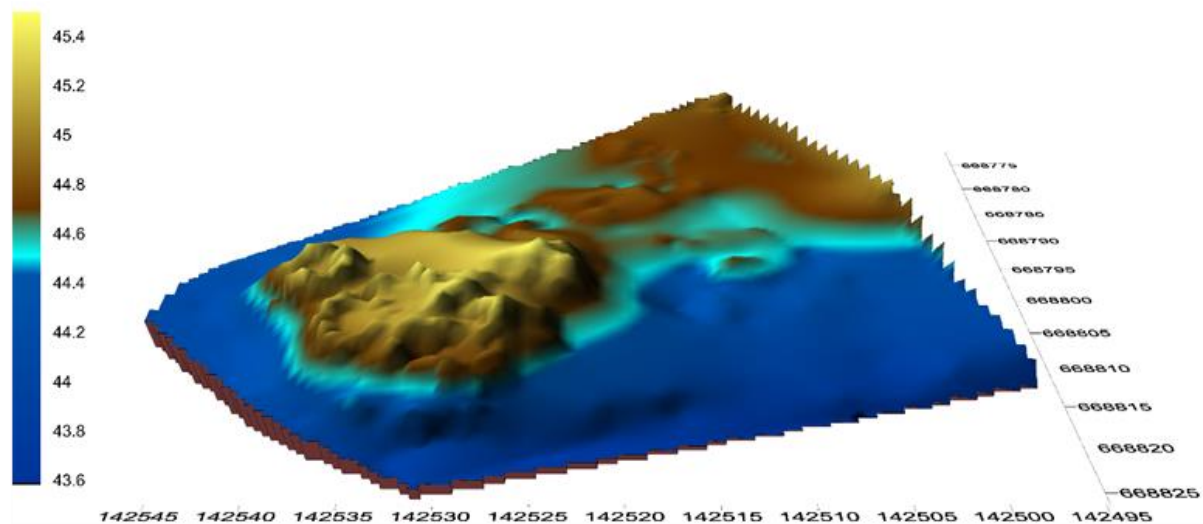
*Figure 23 Left: Topographic survey of the islet settlement showing the structural remains of three buildings; Right: Electrical resistance plot showing the high resistance in warm colours.*



*Figure 24 Interpretation of the topographic and geophysical survey results with two suggested phases of construction.*

Keills and Small Isles school children undertook several different archaeological recording techniques. Above are the results of the topographic survey (Figure 23, left) and the electrical resistance survey (Figure 23, right). The interpretation in Figure 24 is based on both sets of results. The topographic relief shows the outlines of three structures most clearly, but it was less clear on the position of the causeway. The resistivity plot shows the highest resistance in red and orange (max. 777 Ohms) and the lowest resistance in blue (min. 134 Ohms). Interestingly, the stone built causeway can be seen clearly continuing under the body of the islet and joining a smaller circular area of high resistance containing two of the structures. This appears to be the original islet of much smaller dimensions, with a longer causeway and with only two conjoined structures. The third, smallest structure, could only be built once the islet was enlarged. The original causeway became shorter, but it is also possible that a new wider causeway was constructed to the south. The evidence for this comes only from the

topographic survey and not the resistivity, which means that it was built of turf and not of stone. This could be an indication that at that time the edge of the loch was boggy rather than under water. A 3D surface model gives an impression of how the islet may have looked like before the loch was drained (Figure 25)



*Figure 25 3D surface model showing the extent to which the crannog may have been visible above the water*



*Figure 26 Keills and Small Isles pupils with Islay Heritage team at Loch nan Dealla*

The survey of Loch nan Dealla crannog has shown that the site is even more complex and interesting than it can be deduced from the surface remains alone. The presence of different phases of construction and, presumably, occupation, suggests a certain longevity of use of this location for human settlement. The Mesolithic date of the timber obtained from the site and the similarities to Eilean Domhnuill on North Uist bring an exciting prospect that this could be a Neolithic or potentially even earlier site, which would be a completely new type of site for this period in the Inner Hebrides.



### 3. Conclusions

Four ancient monuments of considerable archaeological significance were surveyed with the help of pupils of five Islay and Jura Primary Schools, Bowmore, Port Ellen, Port Chrlotte, Keills and the Small Isles. The primary objective of the project was to enhance children's knowledge and understanding of Islay's heritage, the timescales and the chronology involved, the appreciation of the role the past plays in the island's culture. As future guardians of their heritage, the children were building the awareness for the need to protect the monuments and archaeological sites, which are unrenewable cultural resource benefiting the community.

Further practical emphasis was given to learning of transferable skills, which were building on children's regular curriculum, especially the application of the theoretical topics covered by the STEM subjects. The project highlights the possibilities that archaeology offers as a discipline in bridging the traditionally perceived division between the humanities and the sciences by teaching practical skills based on mathematics, physics, chemistry and the use of technology in the investigation of the human past. Many of the skills concentrated within the typical archaeological investigation are much more widely applicable within many other disciplines and walks of life, including geography, civil engineering, soil sciences, geology, material science, IT and computing, to name but a few.

The children were given the opportunity to engage with the historical monuments in the way the professional archaeologists would. They were encouraged to use their imagination and express themselves both verbally and visually, though several different media. Their appreciation of the archaeological monuments was enhanced through the satisfaction and pride of seeing the results of their own efforts and ability. Their curiosity and their sense of belonging were triggered by the fact they were the first people to 'see beneath the ground' on these important sites and to have contributed to the knowledge about important parts of their local heritage.

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