

BOOK OF DEER PROJECT 2015
Aden Country Park, Aberdeenshire, AB42 5FQ
Old Deer Parish Church, AB42 5LJ
Excavation Report and Data Structure Report



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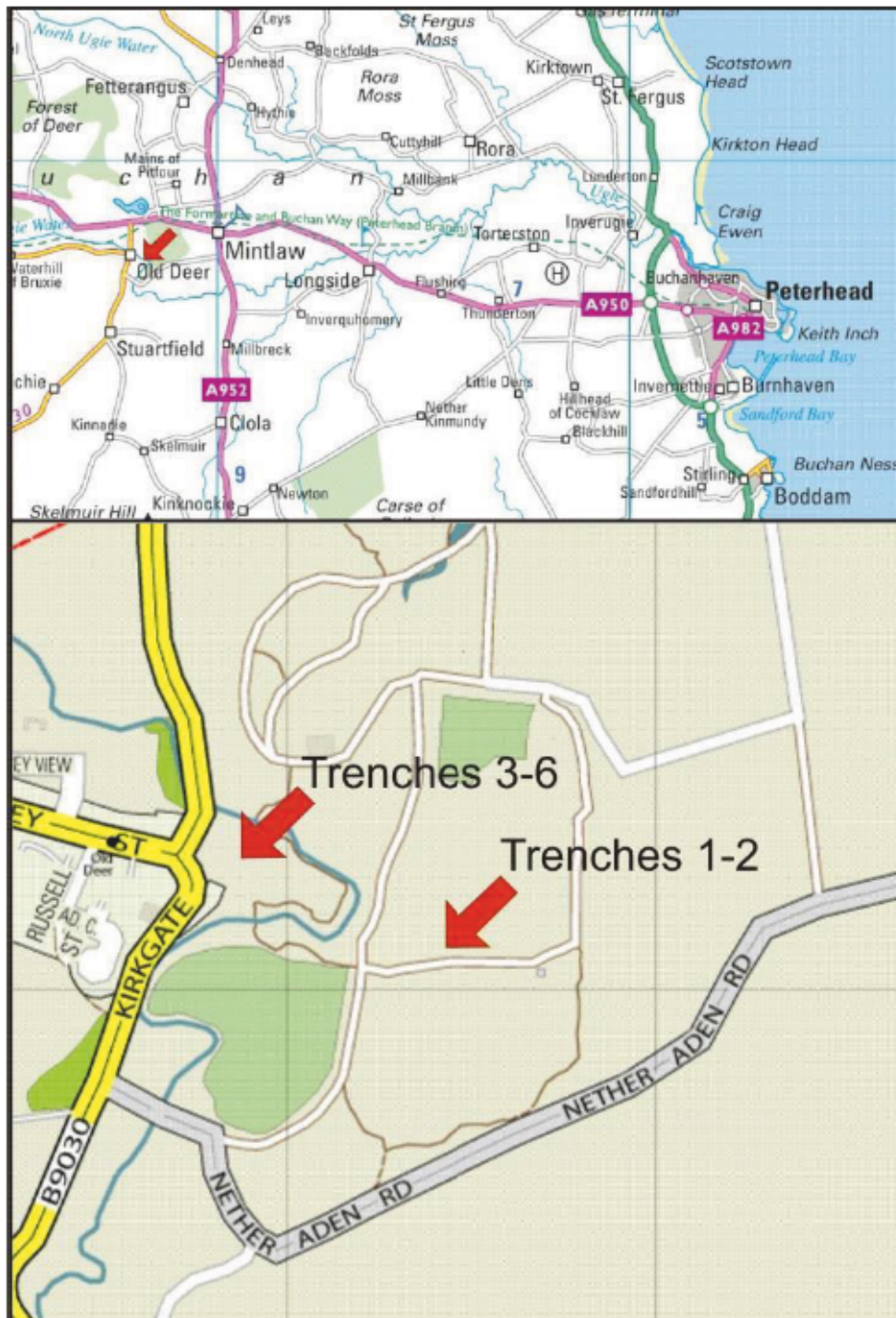
SUMMARY

Two trenches were excavated in Aden Country Park investigating the remains of two stone structures by a team of 29 archaeologists, Book of Deer members, students, volunteers and members of Aberdeen Foyer Reach Project as well as staff and pupils from five local primary schools. Structure 1 is a T-shaped foundation over which stones were rolled to form what appears to be an ad-hoc seating area. A large stone 'platform' was uncovered (82). Local folklore suggests that this was an Episcopalian meeting house and the excavation and associated finds cannot definitively rule out this interpretation.

Following further geophysical survey, four trenches were excavated on the exterior of Old Deer Parish Church to identify anomalies identified during the survey. The positions of the trenches were severely limited by Scheduled Monument Consent not coming through prior to the excavation (due to short time between the survey and the excavation dates) but this has now been secured for possible future work. It was also limited by the presence of gravestones and burials which were not disturbed during this work. The trenches revealed mortar spreads which may have been giving the geophysical readings in Trench 3 and a spread of stones in Trench 4 but no archaeological deposits were recorded in the other trenches. Areas for deeper excavation have been identified (requiring larger trenches within the SAM area) and a proposal for further work is being formulated by Cameron Archaeology and The Book of Deer project.

1 INTRODUCTION

Two areas of excavation were proposed for excavation in 2015. One is located within Aden Country Park in woodland WNW of Hareshowe. It is at NJ 9821 4755, in the parish of Old Deer and at 50-55m OD. The second area is on the east and north side of Old Deer Church at NJ 97922 47690.



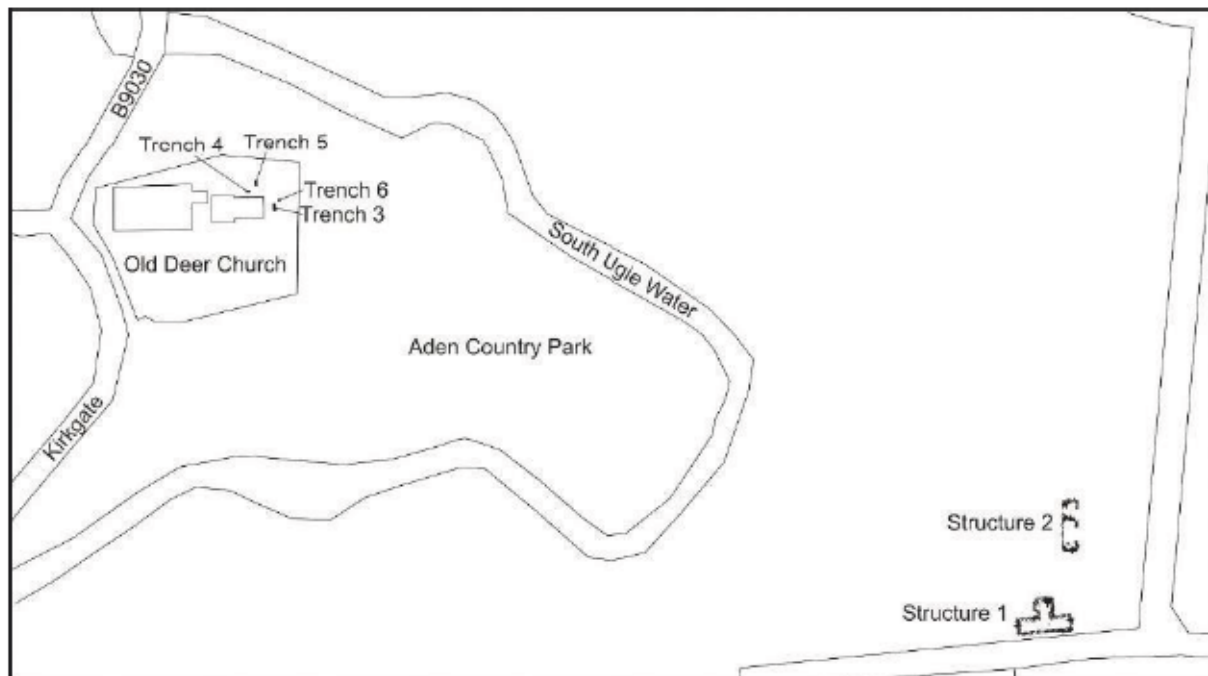
Illus 1 Site location (Contains Ordnance Survey data © Crown copyright and database right 2015).

2 ARCHAEOLOGICAL BACKGROUND

- 2.1 Two stone foundations have been identified in woodland within Aden Country Park (NJ94NE 63.11). The most southerly of these has been identified on Canmore as the remains of an Episcopal Meeting House (NJ94NE 70) but this identification is uncertain. As part of a previous Book of Deer funded project, an evaluation was carried out by Murray Archaeological Services of a group of 27 circular enclosures or possible huts lie in a plantation 40m N of the former stables of Aden House, now the North East of Scotland Agricultural Heritage Centre, between NJ 9805 4798 and NJ 9811 4819 (NJ94NE 88). A trench was also dug in the park by Guard Archaeology with no significant archaeological results.
- 2.2 Following geophysical survey by Rose Geophysical Consultants and excavation of a trench on the interior of the church in 2011, further geophysical survey was commissioned in summer 2015 (see Appendix 4). Trenches excavated by Murray Archaeological Services in 2011 revealed structural details of the ruin but a grave caused the trench to be closed before the geophysical anomalies were identified (Murray and Murray 2011).

3 THE EXCAVATION

Excavation took place from 2-8 September 2015 with a team of archaeologists, Book of Deer members, students and volunteers. Five classes of local primary school pupils visited the site on 4 September and carried out excavation in Trench 2 and studied finds brought by a team from Aberdeenshire Museums Service in the museum at Aden Country Park.



Illus 2 Plan showing 2015 excavation areas

3.1 Trench 1

Trench 1 contained Structure 1 which was partially uncovered in the 2015 season.

There were several trees growing over areas of the wall foundations and these would need to be cleared if further work is to take place at the site.

3.1.1 Phase 1

In Phase 1 a stone foundation was constructed in a T-shape, c 23m long and c 6.5m wide with the short arm of the building being c 6 x 7.5m in size. The foundation was 0.8m wide and was constructed of large granite and quartz boulders with small stone heaving bonded the light brown sandy clay. Several areas of this foundation were uncovered but limited excavation into the foundation failed to reveal any dating evidence. A sample of charcoal from foundation 5 at the E end of the building, was probably the remains of a root burnt at a comparatively recent date. The best-preserved sections investigated were 11 (Illus 3) and 3 (Illus 4). Both foundations had large stones which had remained partially above ground after the demolition of this building and were re-used in Phase 2. There were several deposits of small stones within the building (17; Illus 7; 9, 81) and a small trench through 17 did not reveal any floor remains; further work would be required to determine if floor levels survive.



Illus 3 Wall foundation 11; facing E



Illus 4 Wall foundation 3 with large curved stone left and reused in Phase 2; facing S



Illus 5 Wall foundation 7 showing large quartz block forming internal corner and tree blocking access to part of foundation; facing N



Illus 6 Wall foundation 5 revealed between Phase 2 stones; facing N



Illus 7 Stones 17 in the interior of Structure 1; facing E

3.1.2 Phase 2

In Phase 2 large stones were rolled over the bank which was the remains of the demolished Structure 1, approximately the same size as the phase 1 building. A large stone slab 1.05 x 0.88m in size (82; Illus 9) had been placed in the short arm of the T-shaped structure and there is a suggestion that this stone had been placed to form a platform. It had been placed over demolition material from the building and had been heavily burrowed underneath. No investigation below this stone took place in the 2015 season. A layer of soil between the top of the wall foundation and the Phase 2 stones suggested there had been a considerable period between the demolition of Structure 1 and Phase 2.



Illus 8 East end Structure 1 showing stone moved in Phase 3 (top left); facing NNE



Illus 9 Stone platform 82 (right) in the north section of Structure 1 with stone infill (9; left) and serious animal burrowing (centre) undermining the stone; facing E



Illus 10 Recording the Phase 2 stones with one relocated stone at the top of the ranging rod; facing W

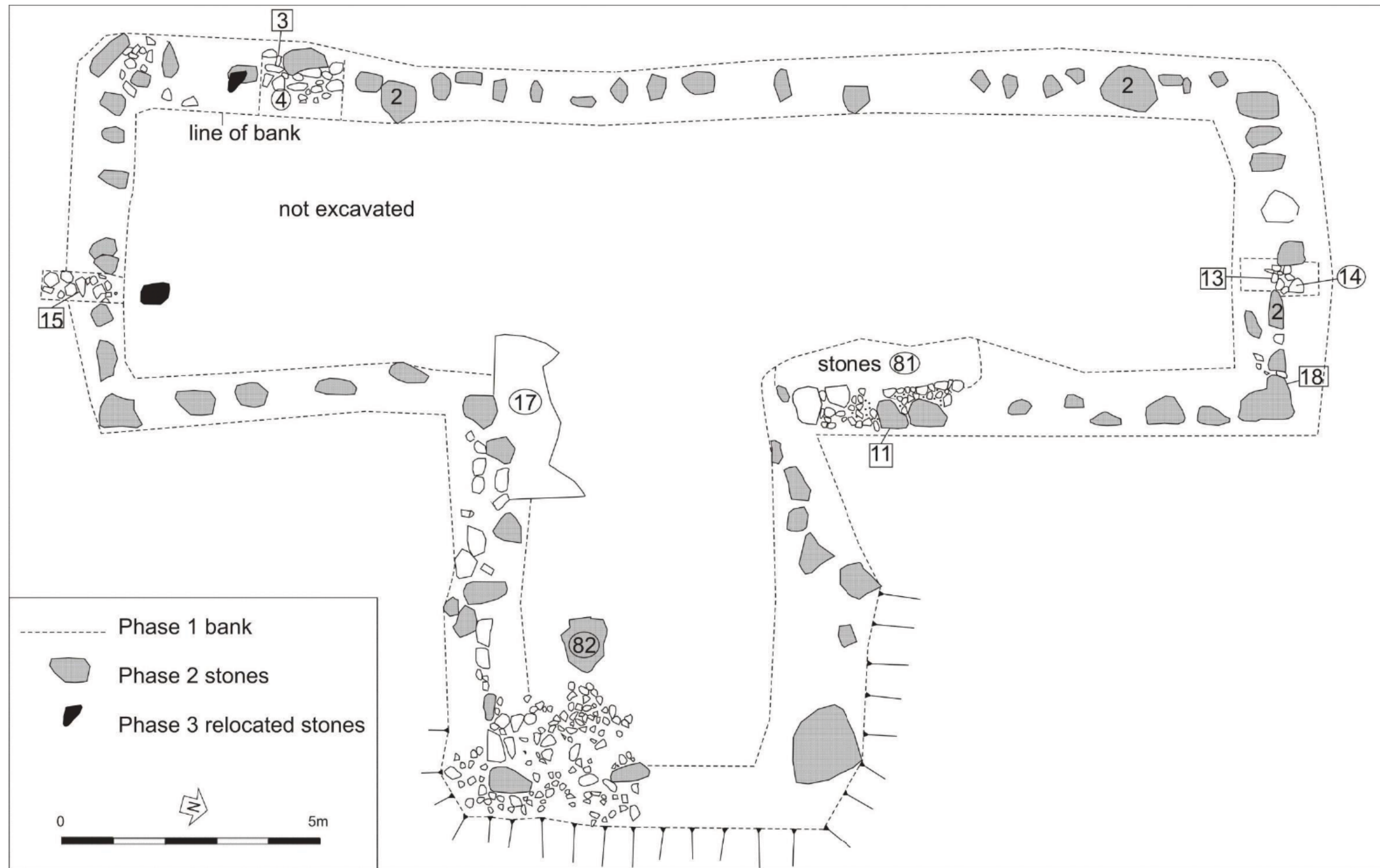


Illus 11 Aberdeen Foyer Reach group and volunteers help clear the interior of Structure 1; facing NNE

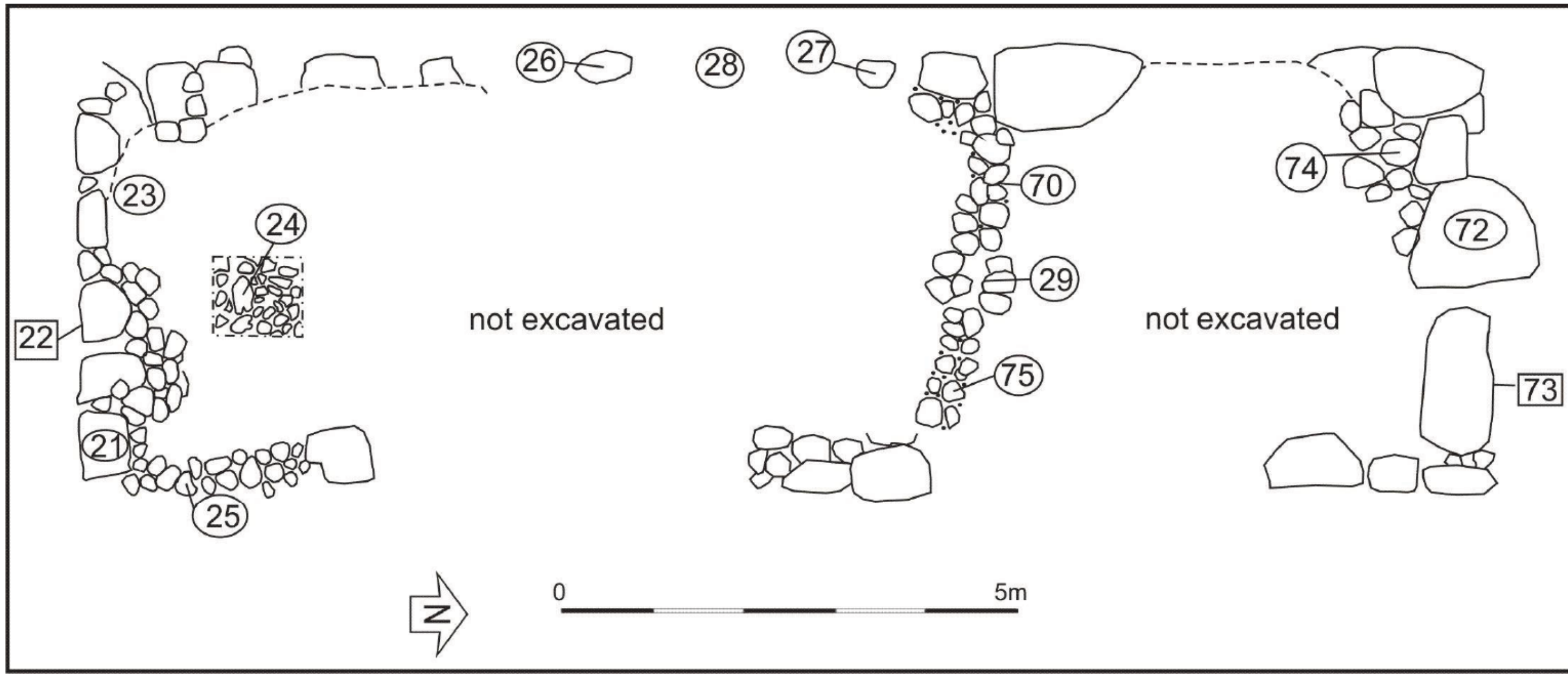
3.1.3 Phase 3

The Phase 3 activity at this building includes at least two of the Phase 2 stones being relocated (eg Illus 10) and a small number of modern finds from visitors to the park.

Finds were sparse from this building but included flint fragments, a coin probably a Charles I/II bawbee of the 17th-century, and sparse amounts of post-medieval and modern pottery and glass fragments. The coin was found during metal-detecting around the trench but probably came from loose material removed from the interior of the structure near the large stone platform, 82.



Illus 12 Plan of Trench 1 Structure 1



Illus 13 Plan of Trench 2 Structure 2

3.2 Trench 2

Structure 2 was located to the N of Structure 1 (Illus 19) and was a rectangular stone foundation 15.3m long and 4.3m wide on a N-S alignment. The wall foundations had been badly damaged in parts by tree roots and burrowing but where they were well-preserved it was possible to determine that their construction was the same as Structure 1, large granite stones with smaller stone hearting with sandy clay bonding material, 0.8m wide (Illus 14). The S wall was neatly constructed whereas the N wall foundation had been constructed using larger boulders roughly placed with a neat NW corner (Illus 15).

The W wall foundation had been badly disturbed but there appeared to be the remains of entrances (26/27) and one large stone within this foundation was 1.3 x 0.7m in size (Illus 16). The remains of a possible partition (29; Illus 16) was uncovered but not investigated and this would require further excavation to determine the nature of this structure, which might also be the remains of a drain.

In the S room a cobbled stone floor was partially uncovered (24; Illus 17) below 0.2m of loose sandy loam.



Illus 14 South wall foundation Structure 2 with Alice Jaspars recording floor 24; facing N



Illus 15 NW corner Structure 2; facing E



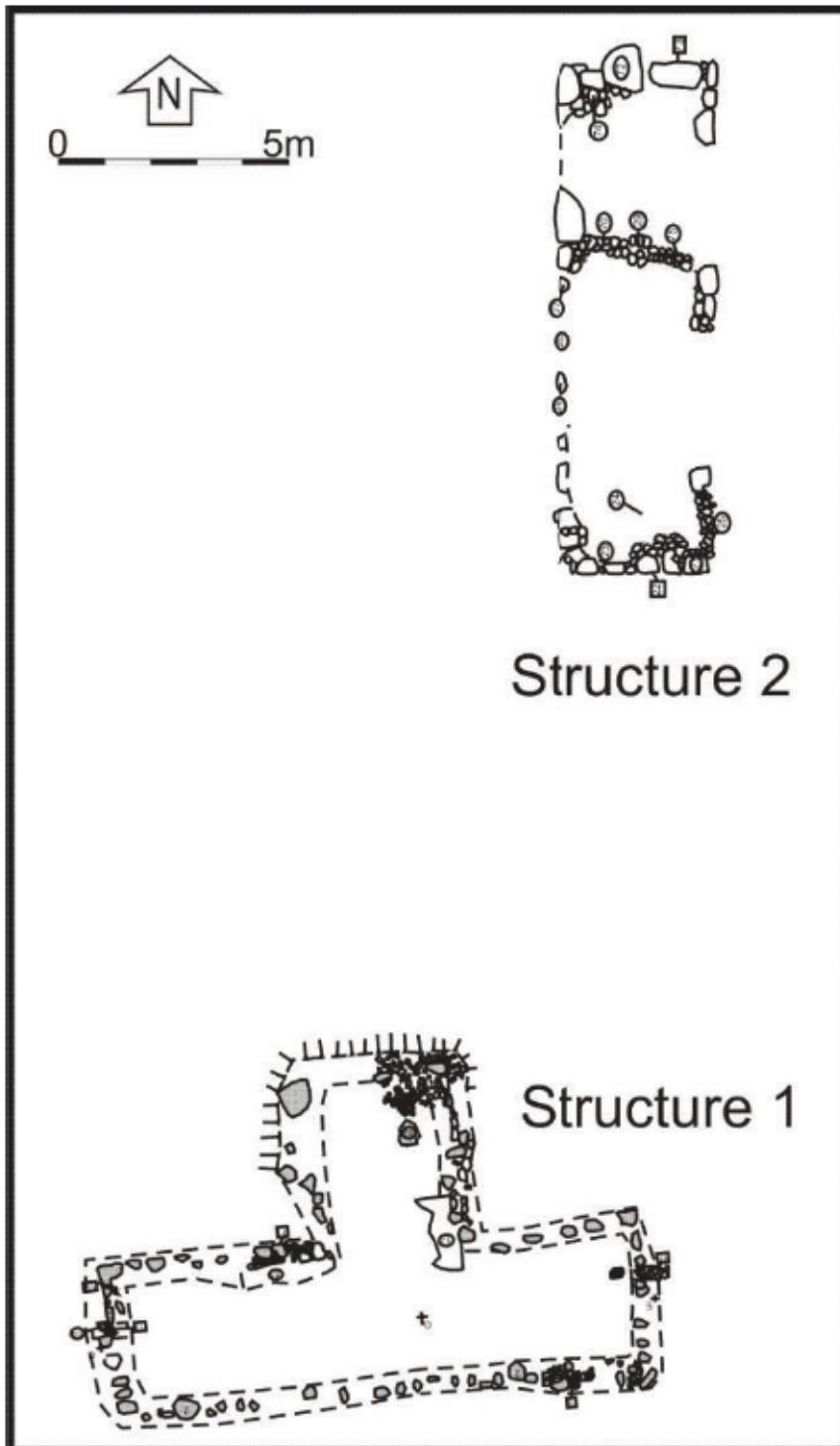
Illus 16 Possible partition wall 29; facing WNW



Illus 17 Structure 2 stone floor 24; facing S



Illus 18 Volunteers and teachers assisting primary children with excavation of wall foundation 22, Structure 2; facing SSE



Illus 19 Plan of Structures 1 and 2

3.3 Trench 3

Trench 3 was 3 x 1 m in size and positioned at the E end of the ruined church outwith the Scheduled Ancient Monument area (Illus 20). It was positioned to locate the anomaly 8 (see Appendix 4). A layer of mortar and stone (31/34) had been cut by later (and deeper) graves and this may have been the anomaly identified by the geophysical survey. On excavation it proved to have burial ironwork underneath and was a post-medieval mortar and stone layer,

possibly from repair of the ruined church. No direct dating evidence was recovered from this layer, however. The trench was dug to 0.8m deep and grave cuts were located at one end of the trench.

The upper layers of the trench contained a large amount of disarticulated human bone (the remains of at least one adult female, one adult male and a baby) and coffin ironwork (all of which was recorded and reburied). The area at the east end of the medieval church would have been heavily occupied with burials and this was confirmed by the presence of these finds. The fills also contained window and vessel glass, clay pipe, post-medieval pottery and stone roof slates. One lead shot was found metal detecting the spoil heap (SF6).



Illus 20 Excavating Trench 4 showing Scheduled Monument area (right) and restricted space between gravestones; facing S



Illus 21 Trench 3 mortar and stone layer cut by burials; this may have caused the geophysical anomaly; facing E

3.4 Trench 4

Trench 4 was located in an open space on the N side of the ruined church very close to the N end of anomaly 8 (see Appendix 4). It was dug down to a maximum of 1m deep through mixed heavy clay loams. Finds included a slate weight or spindle whorl (SF1; Illus 22), two fragments of gravestone (SF4, Illus 23), stone roof tile and 18th-century green bottle base. There were a small number of disarticulated human bone fragments (c40 frags including at least one adult) but no grave cuts were identified. This area would require further work to determine if this trench is with an area of graves.



Illus 22 Slate weight or spindle whorl from Trench 4 SF1



Illus 23 Larger of two gravestone fragments found in Trench 4

3.5 Trench 5

Trench 5 was 1 x 1m and dug to 1m deep and was excavated to look at geophysics anomaly 9. A layer of small stones, possibly remains of a surface or pathway (52) which was just below the turf and may have caused the geophysical anomaly (see Appendix 4). A small amount of

disarticulated human bones (c10 adult fragments) and ironwork were found suggesting this was not a heavily disturbed area and no evidence of grave cuts were identified. There was a stone roof tile, slates, brick fragments, glass, waste lead (probably from window came manufacture or repair) post-medieval pottery and bottle glass suggesting deposits were associated with refuse disposal and building rubble from the church. There was also remains of a lead tracer bullet (Derek Jennings pers comm).

3.6 Trench 6

Trench 6 was 1x1m in size and dug down to 0.8m in the area of the E end of anomaly 8 (see Appendix 4). No archaeological features were recorded but one fragment of disarticulated human bone and a small amount of coffin ironwork were recorded and reburied, suggesting this trench may have been wholly within a grave cut. There was also a slate with pock-marks suggesting that it had been used to make or mend other nails and three sandstone slabs with bevelled edges, possibly part of the pedestal of a grave stone or an architectural fragment. There was also remains of a lead tracer bullet (Derek Jennings pers comm).

4 CONCLUSIONS

Structures 1 and 2 (Trenches 1 and 2) are as yet undated but a coin probably a Charles VII bawbee of the 17th-century suggests activity in this area in the early post-medieval period. They are not marked on the First and second OS maps (Illus 25, 26) but they were located at the edge of the Aden estate and there is a wall around the area at that date (now demolished to allow for the construction of new paths and other Estate works). This suggests that these structures were not roofed or unroofed in the mid to late 19th century and there it is possibility that they had already been demolished by that date. It is also therefore possible that the stones had been rolled into position (Phase 2) by that date also.

Lawson mentions a reference to a tower on the lands of the Keiths (1896, 17) and assumes that it was part of the ruined 'Abbey of Deir' but this may have been a tower house and it is possible that the excavated remains are from a later medieval tower house. Further excavation to uncover dating evidence will be required to confirm this and also further research into Aden Estate maps and papers and associated documents.

Trenches 3-6 were located within the graveyard of the Parish Church to identify anomalies in the recent geophysical survey. The trenches identified layers of stones and mortar which may have been responsible for the readings but further work is required within the Scheduled Monument area to allow for larger and deeper trenches to be excavated between the later graves and determine whether earlier structures survive in this location.



Illus 24 1st edition Ordnance Survey map with excavated buildings in red; note no buildings are present in this location on map. Aberdeen Sheet XXII.1/4 (Combined) Survey date: 1870 Publication date: 1872 Aberdeen Sheet XXI.4 (Old Deer) (copyright National Library of Scotland).



Illus 25 2nd edition Ordnance Survey map with excavated buildings in red; note no buildings are present in this location on map. Aberdeenshire 021.04/01 (includes: Old Deer) Publication date: 1902 Revised: ca. 1899 (copyright National Library of Scotland).

5 REFERENCES

Lawson, A 1896 A Book of the parish of Deir. Aberdeen: Free Press Office.

Murray, HK and Murray JC 2011 Book of Deer Project Excavations 2011 Old Deer, Aberdeenshire. MAS 2013-27

6 ACKNOWLEDGEMENTS

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APPENDIX 1 SMALL FINDS

SF no	Context	Description	Size
1	Tr 4 context 41	Circular slate ?spindle whorl	33mm diam; circular hole 10mm diam
2	Tr 1 metal detecting	Coin ?Charles I/II bawbee	20mm diam, 1mm thick
3	Tr 1 metal detecting	Copper alloy button with circular shank	17mm diameter
4	Tr 4 context 41	Gravestone frag	
5	Tr 3 metal detecting	Stone 'ball', natural ?	25mm diameter
6	Tr 3 metal detecting	Lead shot	8mm diameter
7	Tr 3 context 31	Bone or ivory fragment	
8	Tr 2 context 20	Medieval redware pottery sherd	
9	Tr 3 context 30	Light brown worked flint	51 x 17mm

Finds from Deer Abbey field

SF no	Description
10	Red flint flake
11	Light grey blade?
12	Grey brown scraper
13	Floor tile; white fabric, brown and green foliage decoration, glazed

APPENDIX 2 OTHER FINDS

Tr 1 context 1

1 mammal long bone
 1 clay pipe stem
 2 stoneware clay marbles
 1 flint
 5 green window glass
 4 clear very light green ?vessel glass
 2 x modern china with green ext glaze

Trench 2 Context 1

clear/light green window glass
 10 green bottle glass - modern

Tr 5 context 53

1 clay pipe stem

Trench 3 Context 31

Roof slates – 2 retained
 1 beach flint nodule
 1 clear colourless window glass
 4 clear colourless vessel glass
 1 green vessel glass – fine and early
 1 clay pipe stem

1 19th century dairy bowl sherd
1 mussel shell

Tr 5 50

1 stone roof tile
1 slate
1 plastic/bakelite flower
1 clear colourless glass
1 19th century dairy bowl sherd
5 creamware
1 green glass bottle

Tr 4 spoil heap metal detector find

2x melted lead waste

Tr 5 51

1 window glass yellow and shaped with curved edge
1 light brown flint flake
1 grey slate 2 brick
1 modern red tile
1 lead frag

Tr 6 60

1 slate used with several metal nail marks; used as a platform for hammering
3 x sandstone slab fragments one with a bevelled edge – base for gravestone, part of architectural fragment?

Tr 6 metal detecting

2 x lead; one large tracer bullet with impact flattening.

Tr 5 metal detecting

1 lead frag

Tr 5 metal detecting

1 tracer bullet with impact marks
2 dripped lead frags

Tr 4 40

1 1 x gravestone frag
1 x stone roof tile
1 thick green bottle base – 18th century?

DISARTICULATED HUMAN BONE

Trench 3

400 fragments, 30 adult skull, 4 baby skull, 6 mastoid process, 30 teeth, 1 female adult pelvis, 2 x feet, 2 x hands. Probably remains of one adult male, one adult female and one baby.

Trench 4

Adult skull x 5, adult calcaneus, adult femur, 40 fragments.

Trench 5

1 1st foot phalange, 1 R humerus, 9 fragments

Trench 6

1 ?female pelvis fragment

SAMPLES

Sample no	Context	Description
1	Tr 3 31	mortar
2	Tr 3 31	Mortar from feature
3	Tr 1 19	Charcoal – might be from a root

APPENDIX 3 MAPS



Illus 26 Pont 1583-96 with 'Aden' and 'Aden Mil' (copyright National Library of Scotland)



Illus 27 Roy Military Survey of Scotland, 1747-55 showing Mill of Aden (copyright National Library of Scotland)



Illus 28 1st edition Ordnance Survey map Aberdeen Sheet XXII.1 (Combined) Survey date: 1870 Publication date: 1872 Aberdeen Sheet XXI.4 (copyright National Library of Scotland).



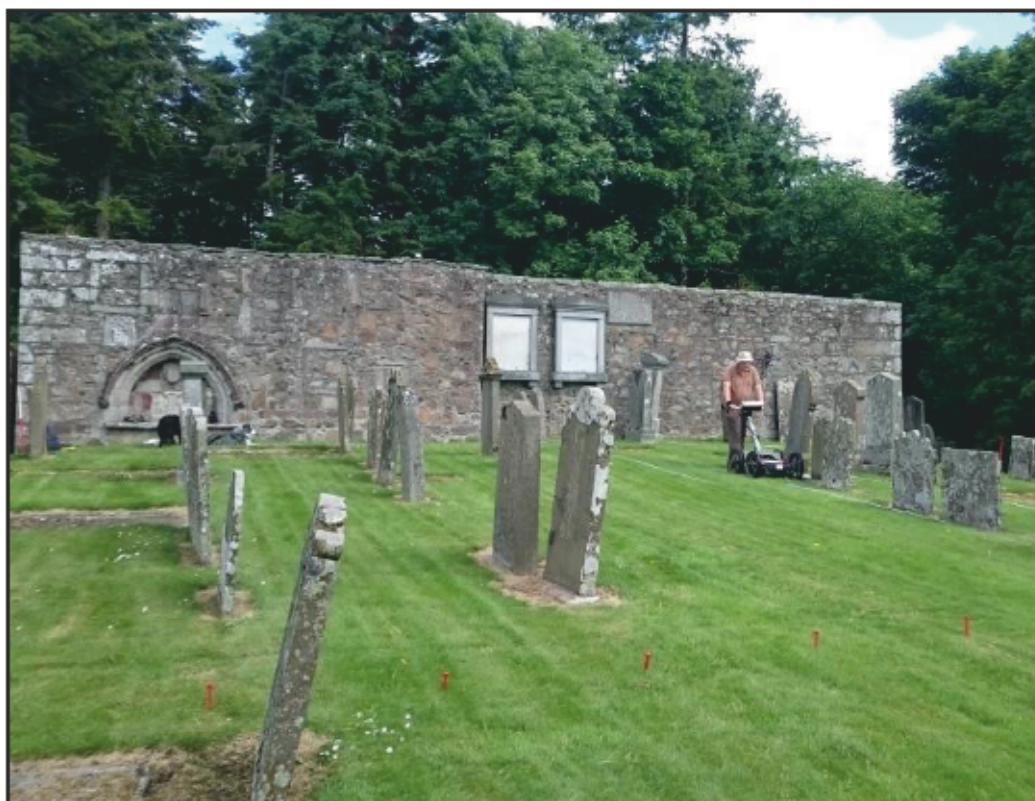
Illus 29 1988 aerial photograph showing approximate area of stone structures; there are voids in the woodland one in the approximate area of the northern stone structure NCAP-000-000-144-133 (copyright NCAP)

APPENDIX 4 GEOPHYSICAL SURVEY

Geophysical Survey Report

Book of Deer 2015

RGC15154/BDP



Commissioned by:

Cameron Archaeology



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Specialising in Archaeological Survey and Consultancy



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Executive Summary

Geophysical survey was undertaken within the graveyard surrounding the extant Old Parish Church, Old Deer. The survey is part of wider archaeological evaluations being undertaken as part of the Book of Deer Project. The aim of the survey was to identify if any foundations extend beyond the extant Old Parish Church. An area of approximately 40m by 40m was investigated with Ground Penetrating Radar (GPR) and Resistance Survey. Previous GPR survey within the church (RGC1248OCD) identified several linear anomalies of interest.

The GPR survey has detected a rectilinear anomaly, suggestive of possible structural remains, adjacent to the northeast corner of the extant church. This appears to be a continuation of anomalies detected within the church during the previous GPR survey. Less well-defined clusters of anomalies further to the northeast of the extant church have also been detected. While these may be archaeologically significant, it is possible that they are simply due to natural, localised, subsoil variations associated with burials. Such an interpretation is supported, to some extent, by the result from the resistance survey. Amorphous responses of possible interest have also been detected to the northwest of the survey area. Again these may simply be due to localised subsoil variations. Although there is some correlation between the GPR and resistance data and 'gaps' in the plan of known burials, it is not very clear. It is possible that the differing results in these areas are because there are fewer burials (i.e. undisturbed ground), rather than the lack of burials indicating potential archaeological remains.

Survey:	Book of Deer Project 2015
Client:	Cameron Archaeology
Date of Survey:	6 th – 7 th July
Survey Personnel:	Dr S M Ovenden and A S Wilson
Report Author:	Dr S M Ovenden
Date of Report:	28 th July 2015

1 Introduction

- 1.1 Geophysical survey was undertaken within the graveyard surrounding the extant Old Parish Church, Old Deer. The survey is part of wider archaeological evaluations being undertaken as part of the Book of Deer Project.
- 1.2 The aim of the survey was to identify if any foundations extend beyond the extant Old Parish Church. Although the main area of interest is within 5m of the extant church, in order to place any detected anomalies in a wider context a larger survey area was undertaken. An area of approximately 40m by 40m was investigated with Ground Penetrating Radar (GPR) and Resistance Survey. Previous GPR survey within the church (RGC1248OCD) identified several linear anomalies of interest. The resistance survey was undertaken to aid interpretation of the GPR survey data.
- 1.3 The areas surveyed are indicated in Figure 1 at a scale of 1:500.

2. Methodology

- 2.1 Prior to data collection a series of 20m grids was established across the site. The survey grid was tied-in to hard features depicted on plans using a Trimble Total Station.

Ground Penetrating Radar Survey

- 2.2 In a GPR survey pulses of electromagnetic energy are directed downwards into the earth. The transmitted wave is affected by variations in the electrical properties of the subsurface, specifically the dielectric constant and the conductivity of the subsurface. Contrasts in these properties cause differential reflection of the energy wave creating an anomaly. The subsurface is mapped by recording the amplitude of this reflected energy and its travel time. The travel times are converted to depth using a calculated velocity.
- 2.3 The data were collected with a Mala X3M GPR system with a 500MHz antenna and processed using the GPRSlice software package. The data were collected as a series of individual traverses with data collected at 0.02m intervals along parallel transects 0.5m apart. All the traverses were then assembled into a block of data and processed and displayed as a series of time slice or depth maps. This type of data processing and visualisation allows more subtle features and relationships between features to be analysed more readily.

- 2.4 The velocity value used to convert the recorded two-way-time to depth has been established using software analysis. While the depths provided should be a reasonable estimation of the depth of features, there may be some variation as a constant value has been applied and the velocity can vary vertically and laterally within the subsurface over a short distance.

Resistance Survey

- 2.5 Resistance survey is ideally suited to locating walls, foundations, ditches and pits, drainage features and possible burials. Earth resistance surveys measure variations in the moisture content of the earth's subsurface by passing a small electrical current through the subsurface. Generally features such as walls and paths will show as high resistance anomalies, while features such as ditches, robber trenches and planting beds with their humic fill will usually result in a low resistance response.
- 2.6 Resistance survey was carried out using a Geoscan RM85 resistance meter. For this survey a standard twin probe configuration was used with a mobile probe separation of 0.5m providing a depth resolution of approximately 0.75m. Data was collected at 0.5m by 0.5m intervals.
- 2.7 The data was processed with Geoscan Research Geoplot 3.00 software, using a standard range of corrections and processing algorithms. Raw, interpolated and high pass filtered data have been included in the report. Interpolating data has the effect of smoothing the data image by interpolating the data in the X and Y direction resulting in the appearance of a 0.25m by 0.25m sample interval. Running a high pass filter on the data effectively removes background trends within the data thereby enhancing more discrete anomalies. The data have been displayed at a variety of levels, in an attempt to pull out more subtle anomalies. In area resistance survey the data values themselves are not significant but rather the changes relative to the background level of response. In some of the figures the data are plotted at absolute values in ohms (Ω) to try to pull out different anomalies. In other plots the statistics of the full data range are used and the data are plotted at plus/minus one or two standard deviations (SD).

4. Results of Ground Penetrating Radar Survey (Figures 2 - 17)

Anomaly numbers referred to below are shown on the accompanying interpretation diagrams.

- 4.1 The graveyard is densely populated with numerous grave markers and grave slabs across the site which has prevented survey in many discrete areas. A plan of the graveyard from 1870 indicates far more burials than the existing headstones suggest.
- 4.2 The GPR data is displayed as a series of individual depths slices maps with accompanying interpretations diagram Figures 2 -17, all at a scale of 1:500. For completeness the results from the earlier GPR survey within the church are also included, but not discussed unless relevant. The 'depth' of the earlier slices has been adjusted to account for the differences in ground level within and outside the church.

0.00m – 0.25m Depth Slice

- 4.3 This surface depth slice is dominated by very well-defined rectangular high amplitude anomalies (1). These coincide with grave slabs visible on the surface.
- 4.4 More amorphous areas of high amplitude reflections have been detected in the north of the survey area. Those immediately to the northeast of the church (2) have been tentatively interpreted as potentially significant. However, while the anomalies could suggest a possible wall/robber trench extending northwards from the church, the responses may simply be due to burials.
- 4.5 Interpretation of the anomalies (3) in the northwest of the survey area are similarly tentative. Although they generally coincide in an area of fewer burials, they could simply be due to subsoil variations, or modern ground disturbance.
- 4.6 Trends (4) visible to the south of the church are believed to be due to burial enclosures indicated on the Lair plan of 1870.

0.25m - 0.50m Depth Slice

- 4.7 Several of the responses (1) from grave slabs visible on the survey are still apparent within this depth slice. Similar responses (5) are visible within this depth slice and are likely to indicate burials, deeper stone slab or voids as they are not apparent in the previous depth slice.

- 4.8 The high amplitude reflections (6) in the west of the survey area are thought to be due to modern ground disturbance associated with paths, kerb stones etc., although an archaeological origin cannot be dismissed.
- 4.9 As with the previous depth slice a cluster of high amplitude reflections (7) has been detected immediately to the northeast of the church. While an archaeological origin for these cannot be dismissed, they may simply be due to burials.

0.50m – 0.75m Depth Slice

- 4.10 As with the previous depth slices the GPR data indicate a generally uniform background with isolated anomalies from suspected slabs and voids (1) and modern disturbance (6).
- 4.11 However, a well-defined rectilinear anomaly (8) has been detected immediately to the northeast of the extant church. This anomaly is suggestive of structural remains i.e. buried foundations, although a modern origin or some aliasing affect associated with burials cannot be dismissed. The anomaly (8) appears to show excellent correlation with linear anomalies interpreted within the church during the previous GPR survey. The anomalies are not as clear within the data from the earlier, but that is due to it being deeper within the church and therefore weaker. Fewer burials are recorded on the Lair Plan within this general area, which may be significant, although there is no clear correlation.
- 4.12 Immediately to the north of (8) a more amorphous area of high amplitude reflections (9) has been noted. While an archaeological origin for this cannot be dismissed, its association with headstones suggest this zone of reflections may simply be associated with burials.

0.75m – 1.00m Depth Slice

- 4.13 The majority of the isolated responses within this depth slice are due to burials. The stronger responses are most likely due to ringing of the signal. This occurs when there is a very marked near surface contrast (such as a grave slab) and results in the signal 'bouncing' back and forth between the antenna and the surface causing in the response to appear at a greater depth than it actually exists.
- 4.14 The postulated foundations (8) are not evident within this depth slice, suggesting that if these are significant they do not extend to any great depth.

- 4.15 The more amorphous zone of reflections (9) is still evident within this depth slice. Although rectilinear in nature, it may simply be associated with burials. Although there are fewer recorded burials within the area, there is no clear correlation between the GPR data and the Lair plan.

1.00m – 1.25m Depth Slice

- 4.16 The data from this depth slice are dominated by the well-defined area of reflections (9) to the northeast of the church. These have a very rectilinear form and appear to show some correlation with the extant church. However, while it is tempting to consider these responses as archaeologically significant, they may simply be due to burials. It is possible that the different nature of the responses being recorded in this area is due to variations in the subsoil (see Resistance data).

1.25m – 1.50m Depth Slice

- 4.17 The zone of reflections (9) is still evident within this depth slice, although it is not as well-defined as in previous depth slices.
- 4.18 The other isolated anomalies within this depth slice are due to subsoil variations and ringing of the signal.

1.50m - 1.75m Depth Slice

- 4.19 An amorphous zone of noise is apparent in the eastern half of the survey area and is thought to be due to natural variations in the subsurface (see Resistance Results).
- 4.20 A coherent cluster of anomalies (9) is still evident to the northeast of the Chapel. However, given the depth of these anomalies a natural origin, or a combination of natural variations and grave cuts, seems most likely.
- 4.21 There are suggestions of a rectilinear response (10) to the west of the Church. Given the depth an archaeological origin seems unlikely, although it cannot be dismissed.

1.75m – 2.00m Depth Slice

- 4.22 Aside from (9), no coherent anomalies are apparent within these depth slices

3. Results of Resistance Survey (Figures 18 - 22)

Anomaly letters referred to below are shown on the accompanying interpretation diagrams.

- 3.1 Summary greyscale and colour scale images of the resistance survey data are displayed *in-situ* in Figures 18 - 21, with an accompanying interpretation diagram in Figure 22, all at a scale of 1:500.
- 3.2 The graveyard is densely populated with numerous tombstones and grave slabs which limited the area available for survey and has generated 'noise' within the survey data.
- 3.3 There is a marked variation in the background level of resistance across the site, with low resistance (A) around the church and a band of high resistance in the east of the survey area. While this may reflect geological variations, it is more likely associated with localised pedological variations influencing drainage.
- 3.4 The band of high resistance (B) in the southeast of the area shows no correlation with the GPR data and is most likely due to variations in drainage across the slope of the mound.
- 3.5 The area of high resistance (C) in the northeast of the survey area shows some correlation with GPR anomaly (9). If (C) is simply reflecting pedological variations then the GPR anomalies may simply be due to burials i.e. the high amplitude reflections in the GPR data in this area are perhaps due to undisturbed ground and the rectilinear form a result of graves being cut into this slightly different soil.
- 3.6 There is no clear correlation with the GPR anomaly (8). However, there is a well-defined area of low resistance (D) within the resistance data which may be significant. However, this area of low resistance may be due to drainage variations around the church.
- 3.7 A well-defined linear low resistance anomaly (E) is visible in the west of the survey area. While this may simply be associated with burials, it does have the appearance of a possible robber trench.
- 3.8 Ephemeral trends (F) are discernible in the northwest of the survey area. These are almost certainly related to burials but a more significant archaeological origin cannot be dismissed. These anomalies show some correlation with GPR anomalies (3).

5. Conclusions

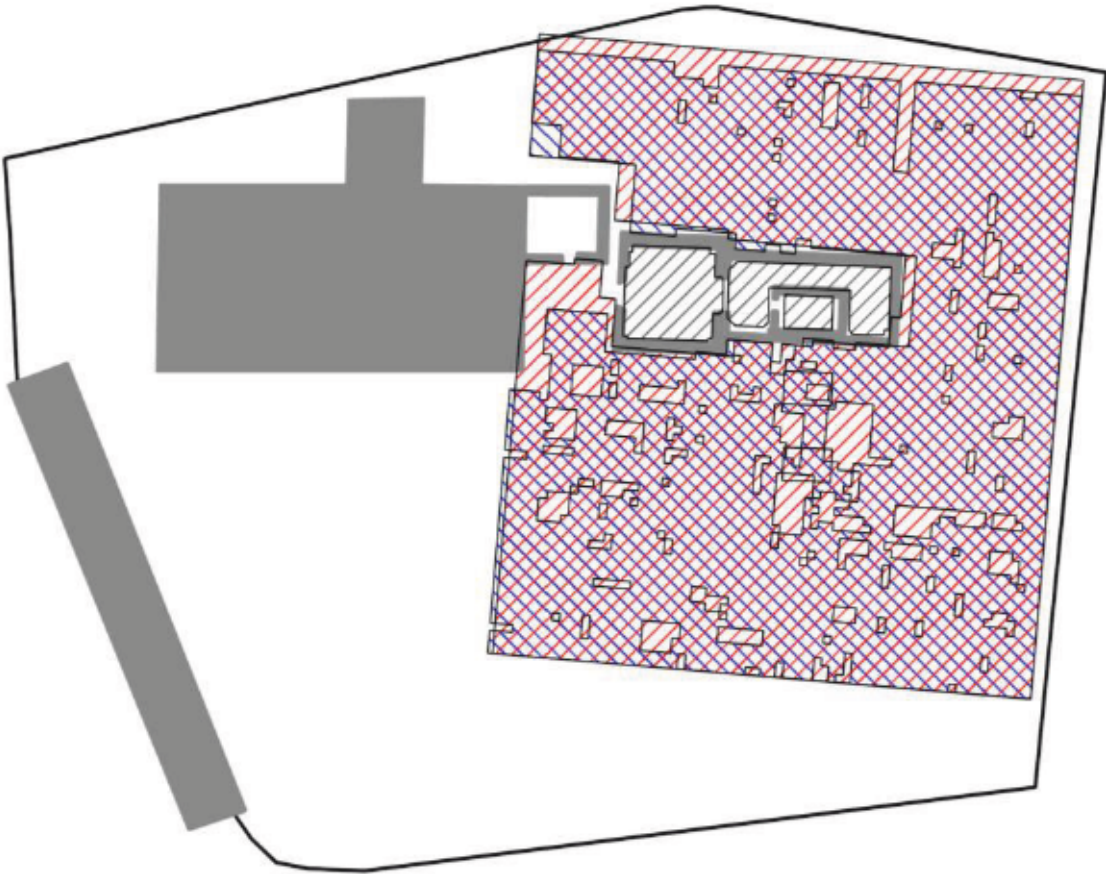
- 5.1 As expected the large number of burials across the site has resulted in a high level of near surface noise from graves, but a relatively uniform data set at depth.
- 5.2 The GPR survey has detected a rectilinear anomaly, suggestive of possible structural remains, adjacent to the northeast corner of the church. This appears to show good correlation with the results of the previous GPR survey within the Church. Less well-defined clusters of anomalies further to the northeast of the extant church have also been detected. While these may be archaeologically significant, it is possible that they are simply due to natural, localised, subsoil variations. Such an interpretation is supported, to some extent, by the result from the resistance survey.
- 5.3 Amorphous responses of possible interest have also been detected to the northwest of the survey area. Again these may simply be due to localised subsoil variations.
- 5.4 Although there is some correlation between the GPR and resistance data and 'gaps' in the plan of known burials, it is not very clear. It is possible that the differing results in these areas are because there are fewer burials (i.e. undisturbed ground), rather than the lack of burials indicating potential archaeological remains.

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**BOOK OF DEER PROJECT
2015**

Location Diagram



GPR Survey



Resistance Survey



Previous GPR Survey



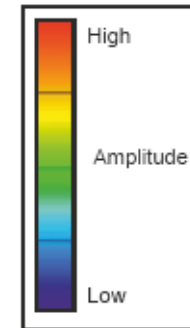
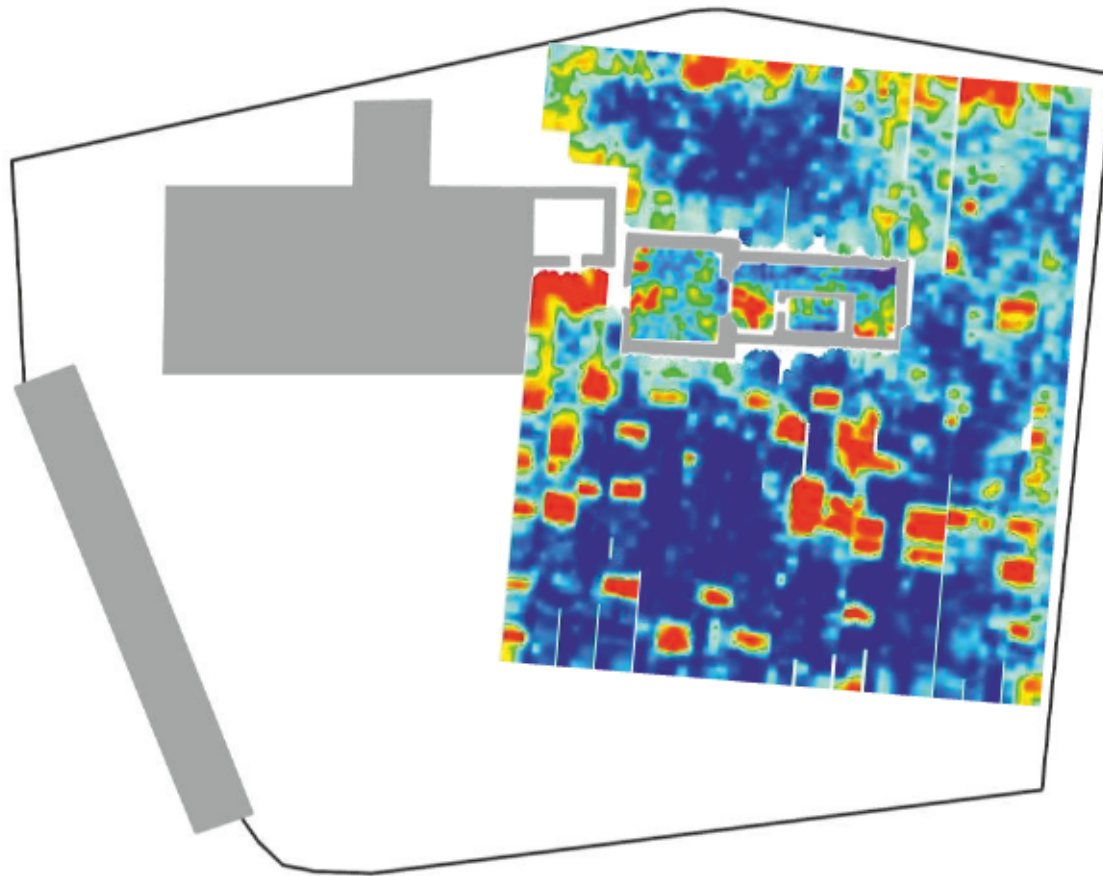
0m

20m



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2015**

**GPR Survey
0.00m - 0.25m Depth Slice**



0m

20m








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Figure 2

BOOK OF DEER PROJECT
2015

GPR Survey
0.00m - 0.25m Interpretation



-  ? Wall/Rubble
-  ?? Archaeological
-  Trend
-  ?Natural
-  Near Surface Feature:
Grave marker / Burial



0m

20m

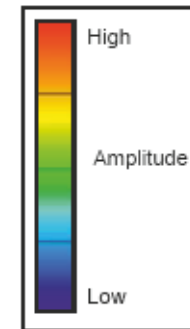
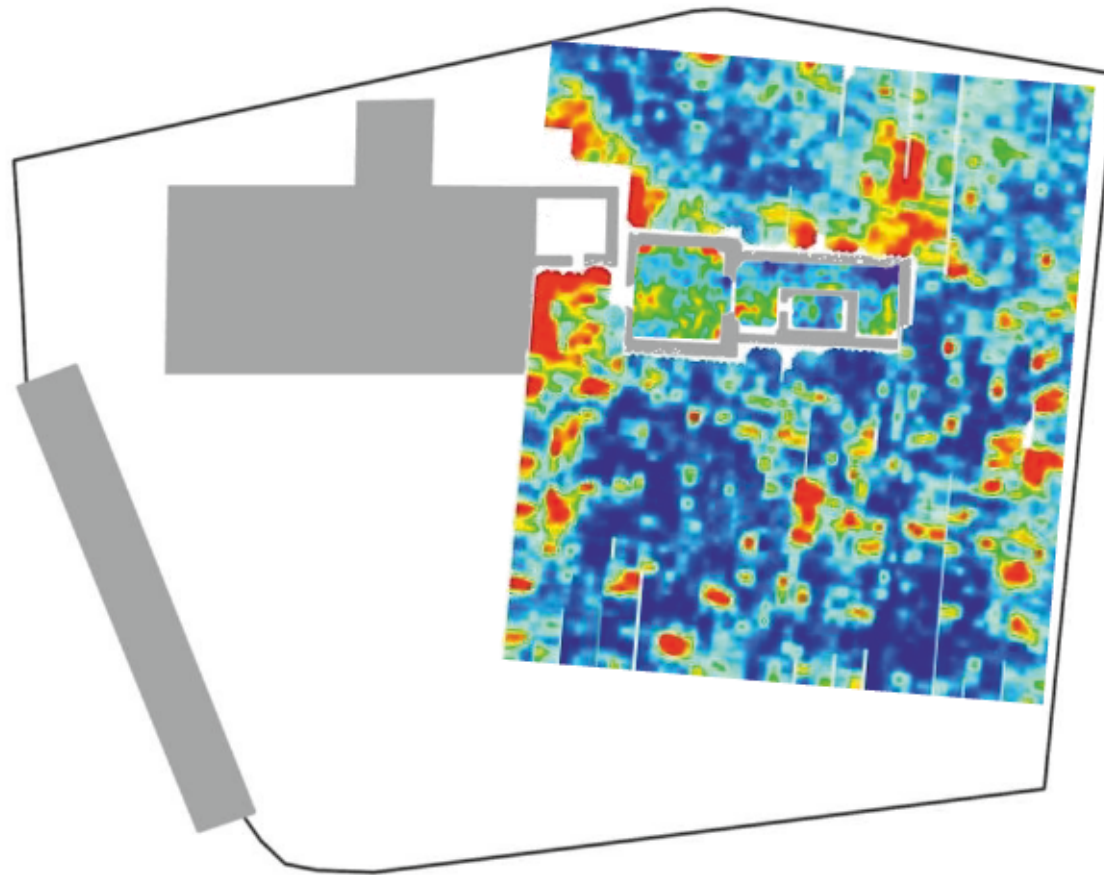


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Figure 3

**BOOK OF DEER PROJECT
2015**

**GPR Survey
0.25m - 0.50m Depth Slice**



0m

20m

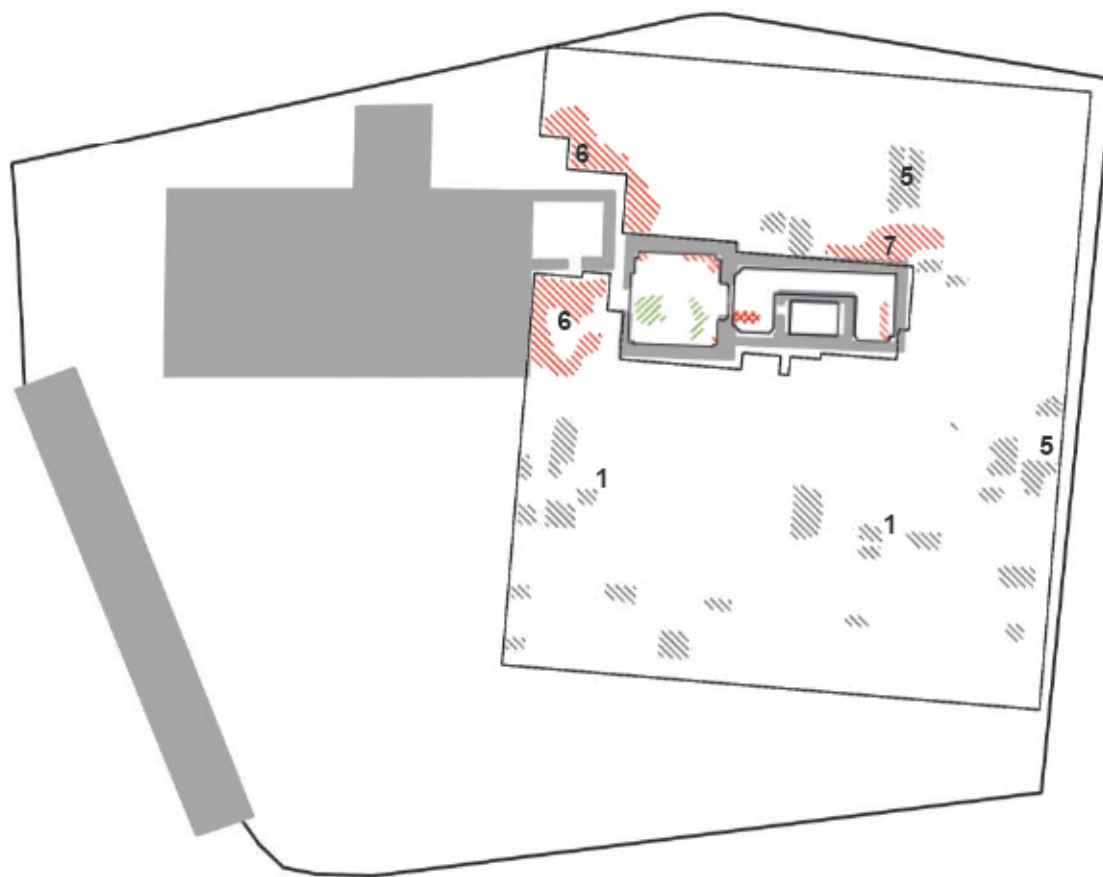







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Figure 4

BOOK OF DEER PROJECT
2015

GPR Survey
0.25m - 0.50m Interpretation



-  ? Wall/Rubble
-  ?? Archaeological
-  Trend
-  ?Natural
-  Near Surface Feature:
Grave marker / Burial



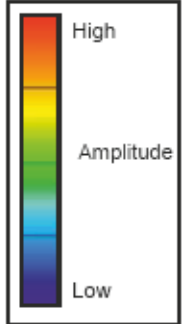
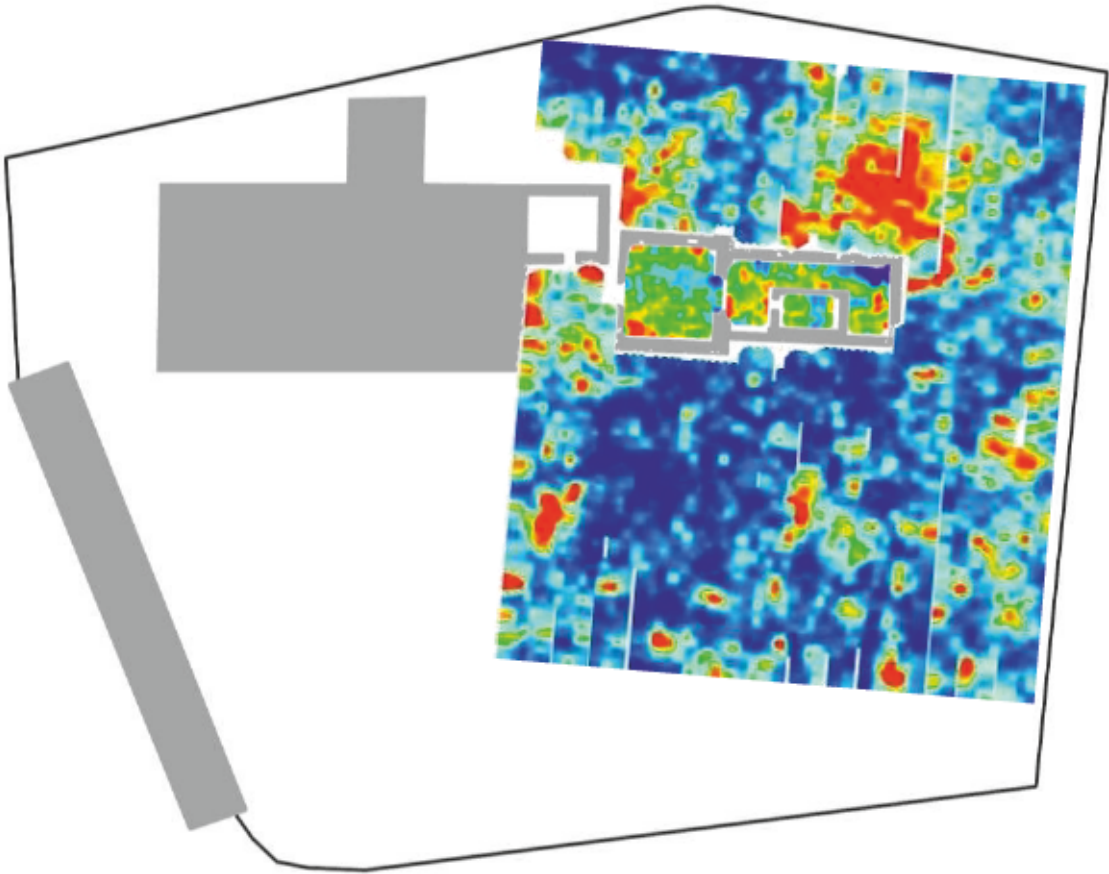
0m

20m



**BOOK OF DEER PROJECT
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**GPR Survey
0.50m - 0.75m Depth Slice**



0m

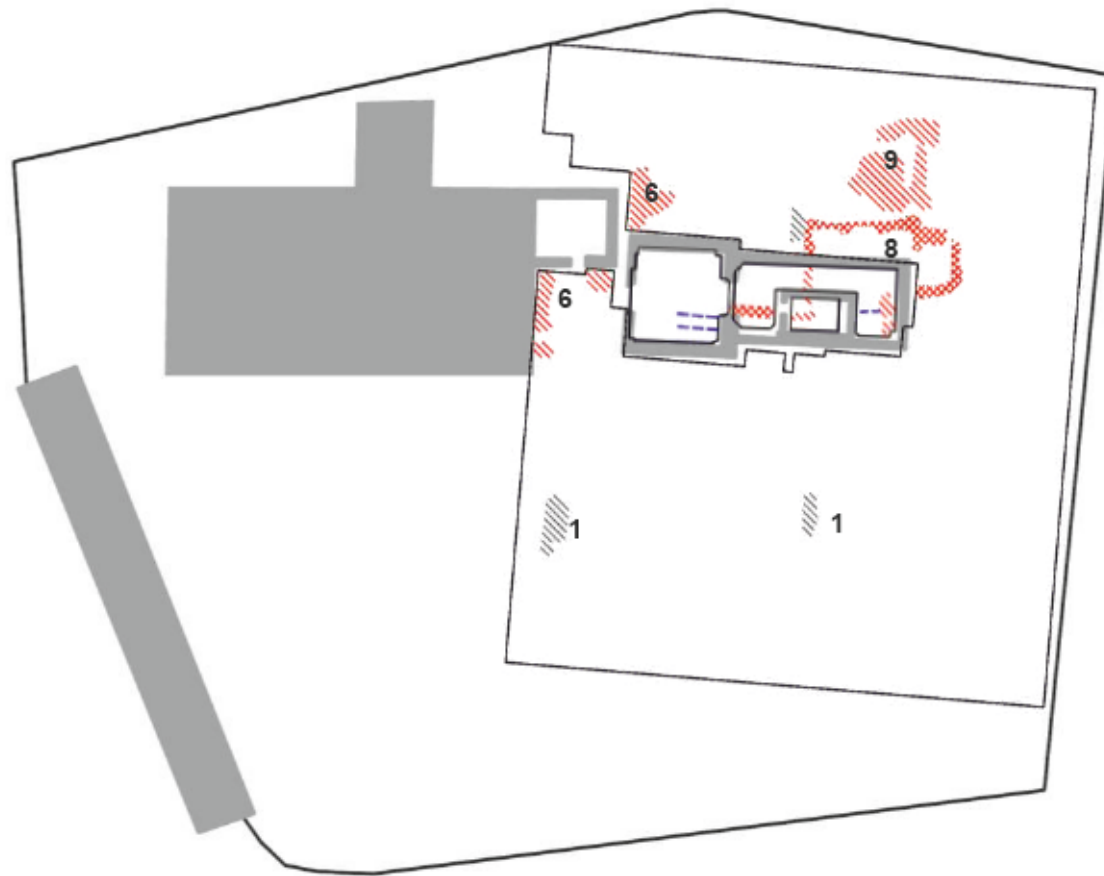
20m








Figure 6

BOOK OF DEER PROJECT
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GPR Survey
0.50m - 0.75m Interpretation



-  ? Wall/Rubble
-  ?? Archaeological
-  Trend
-  ?Natural
-  Near Surface Feature:
Grave marker / Burial



0m

20m

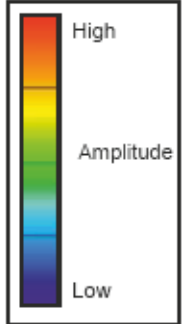
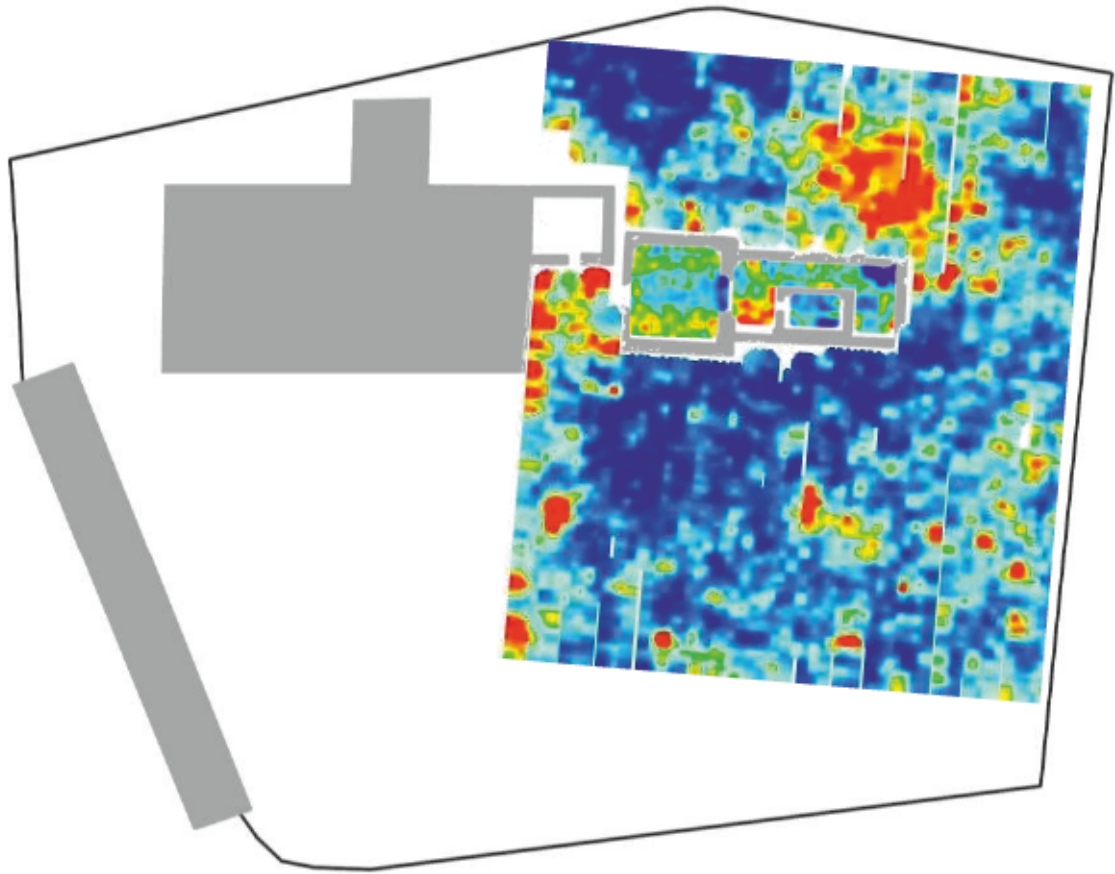


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Figure 7

**BOOK OF DEER PROJECT
2015**

**GPR Survey
0.75m - 1.00m Depth Slice**



0m

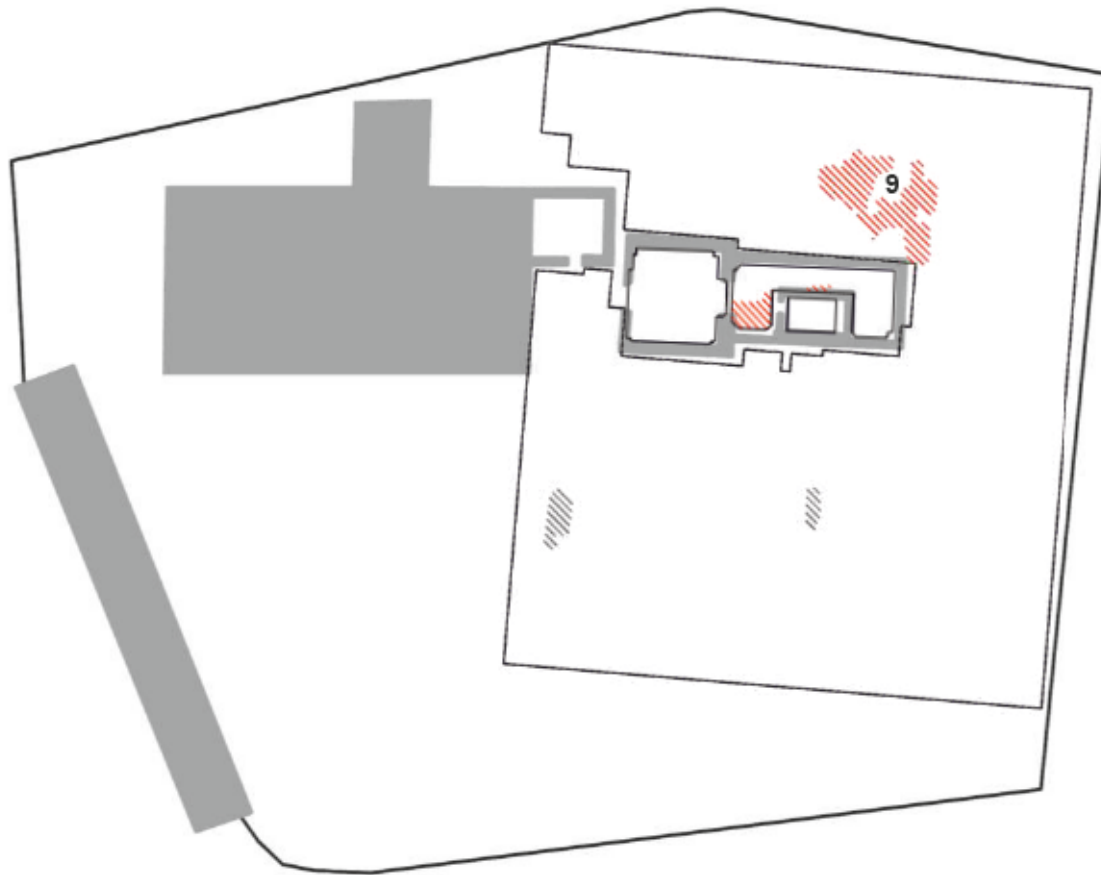
20m








Figure 8

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2015

GPR Survey
0.75m - 1.00m Interpretation



-  ? Wall/Rubble
-  ?? Archaeological
-  Trend
-  ?Natural
-  Near Surface Feature:
Grave marker / Burial



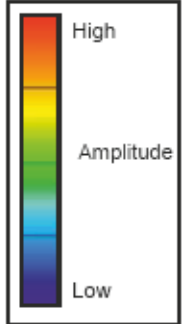
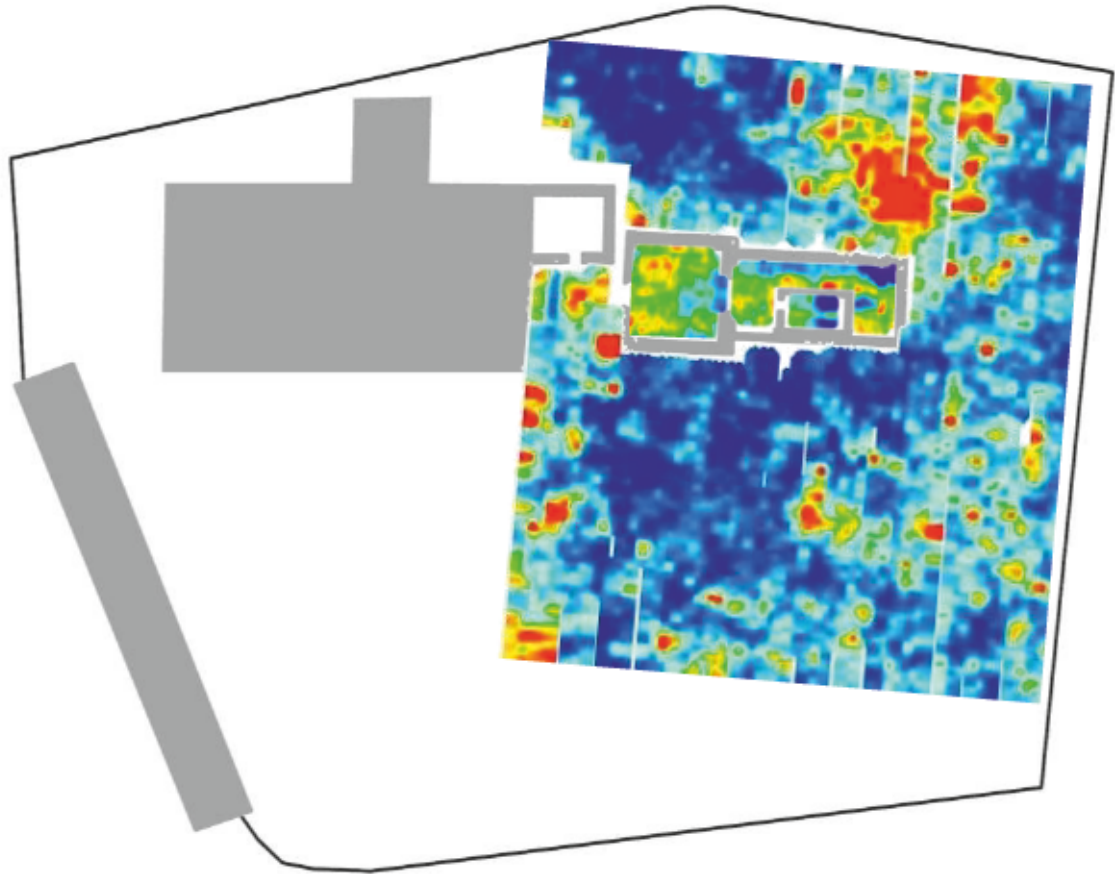
0m

20m



**BOOK OF DEER PROJECT
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**GPR Survey
1.00m - 1.25m Depth Slice**



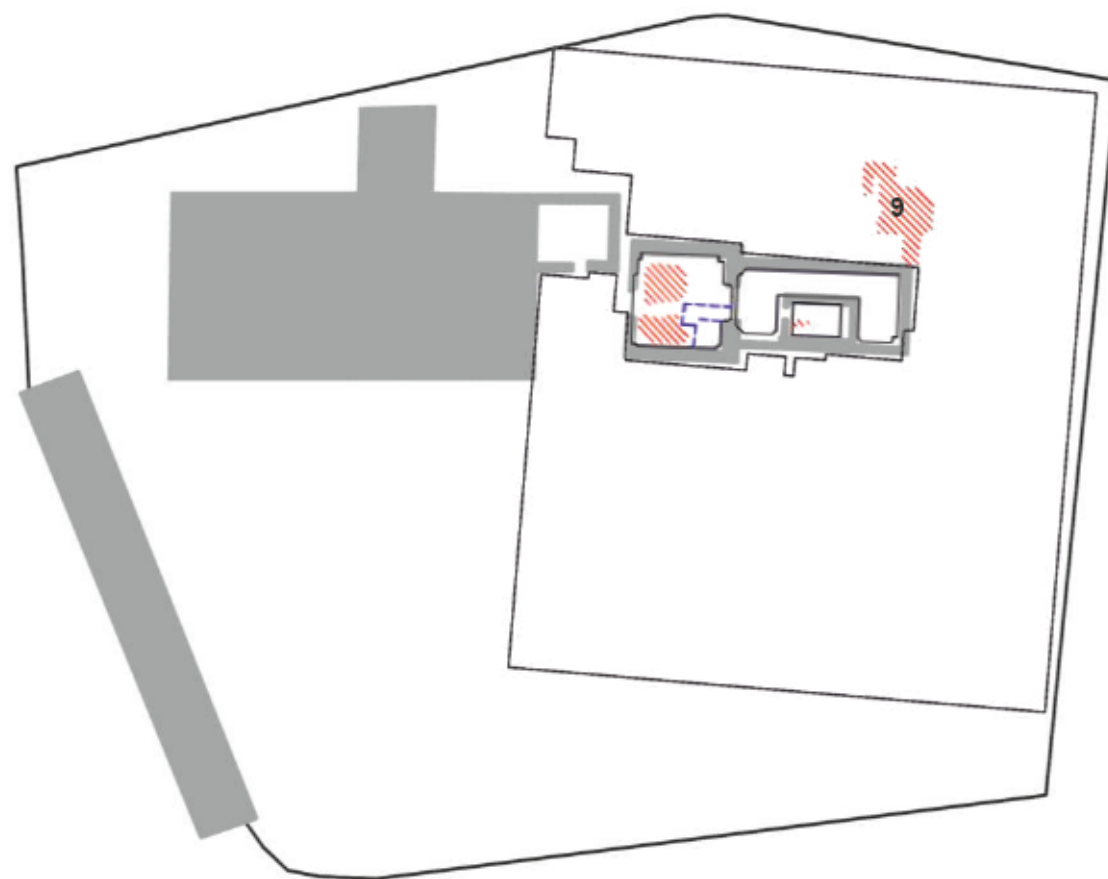
0m 20m




Figure 10

BOOK OF DEER PROJECT
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GPR Survey
1.00m - 1.25m Interpretation



-  ? Wall/Rubble
-  ?? Archaeological
-  Trend
-  ?Natural
-  Near Surface Feature:
Grave marker / Burial



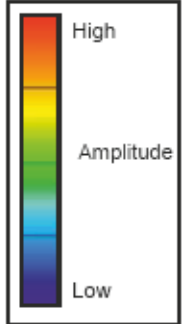
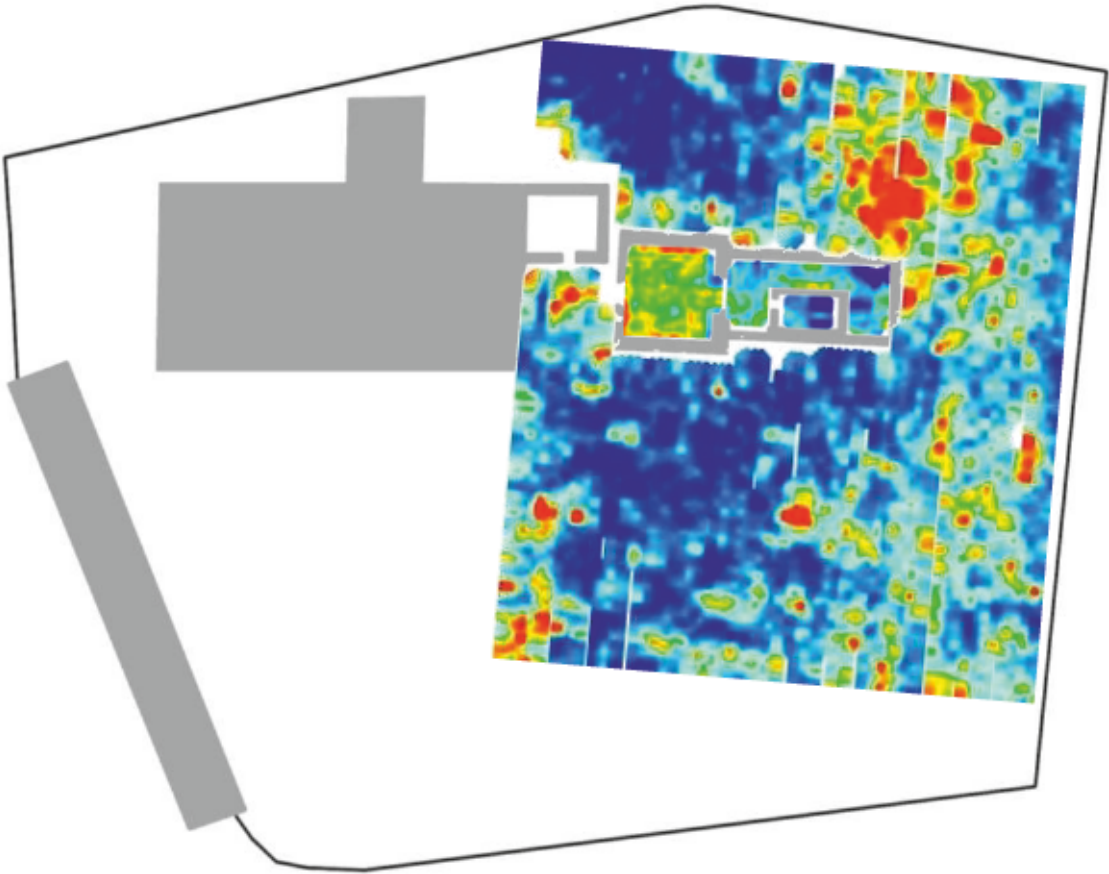
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20m



**BOOK OF DEER PROJECT
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**GPR Survey
1.25m - 1.50m Depth Slice**



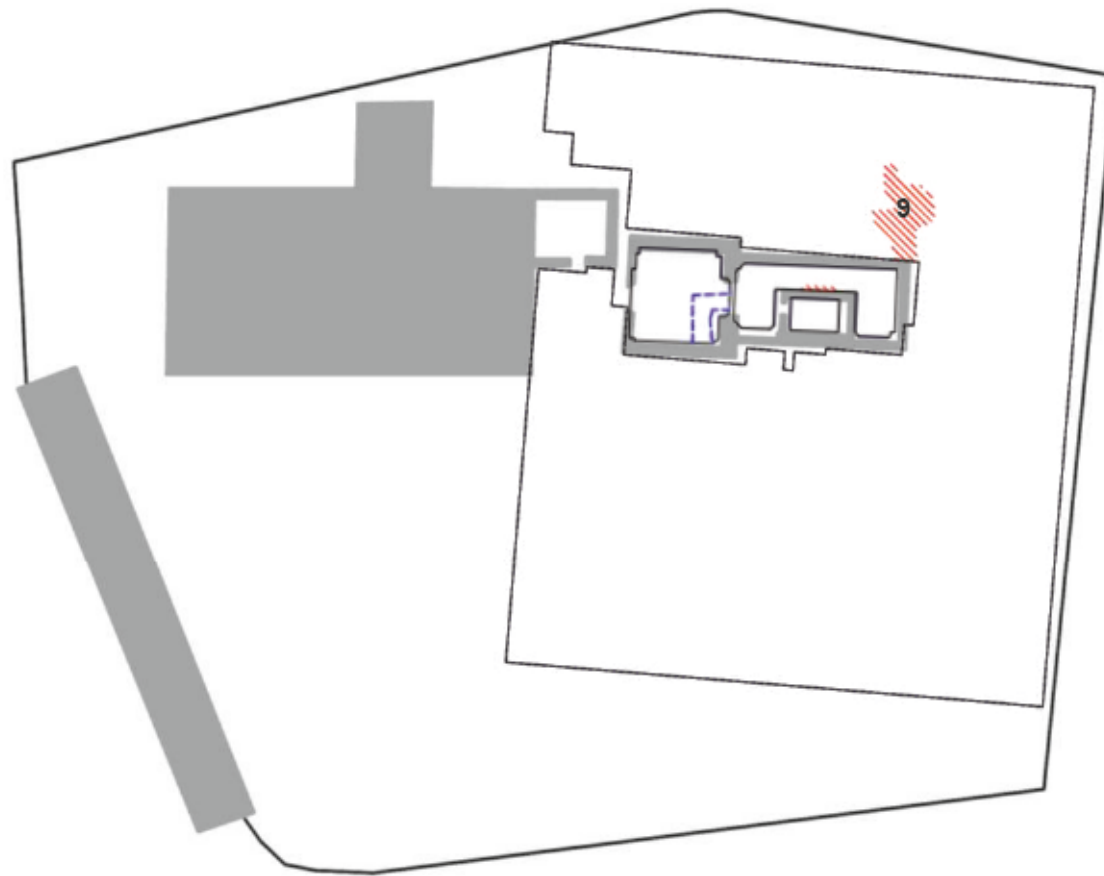
0m 20m








Figure 12

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**GPR Survey
1.25m - 1.50m Interpretation**



-  ? Wall/Rubble
-  ?? Archaeological
-  Trend
-  ?Natural
-  Near Surface Feature:
Grave marker / Burial



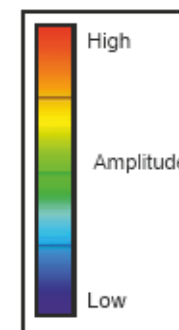
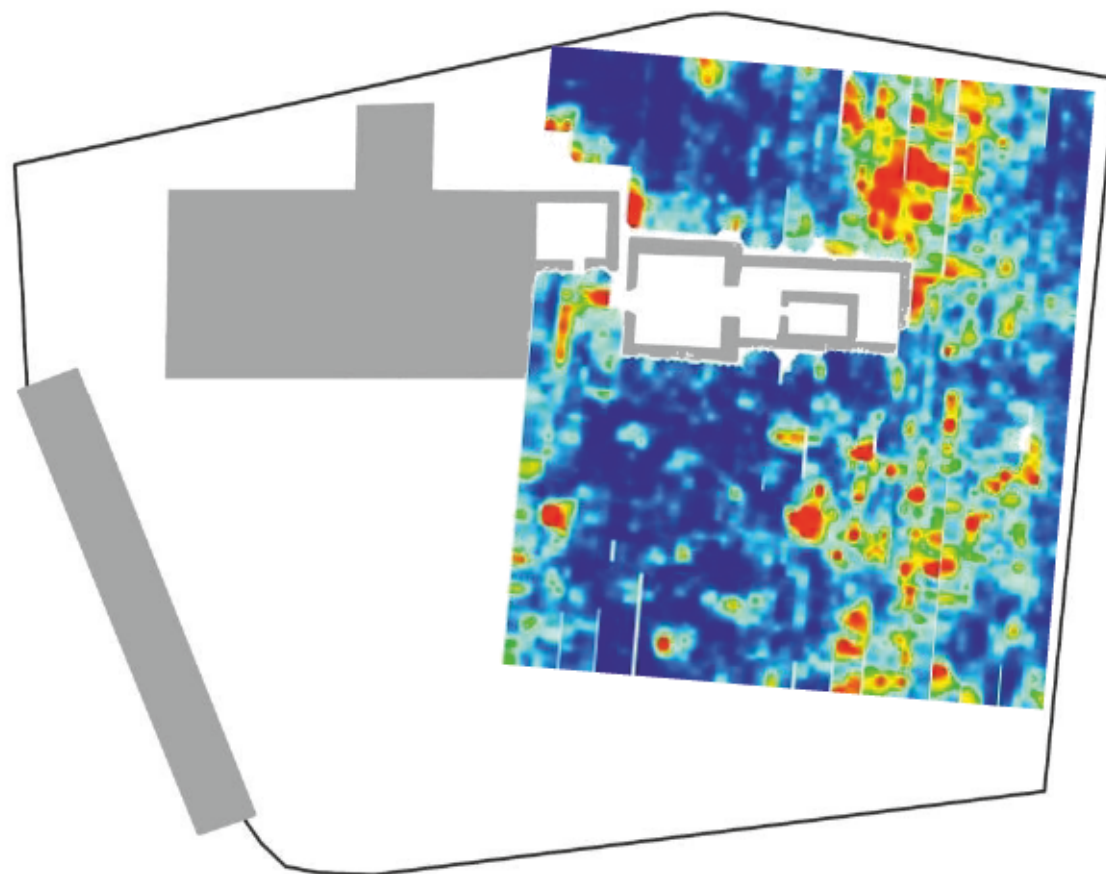
0m

20m



**BOOK OF DEER PROJECT
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**GPR Survey
1.50m - 1.75m Depth Slice**



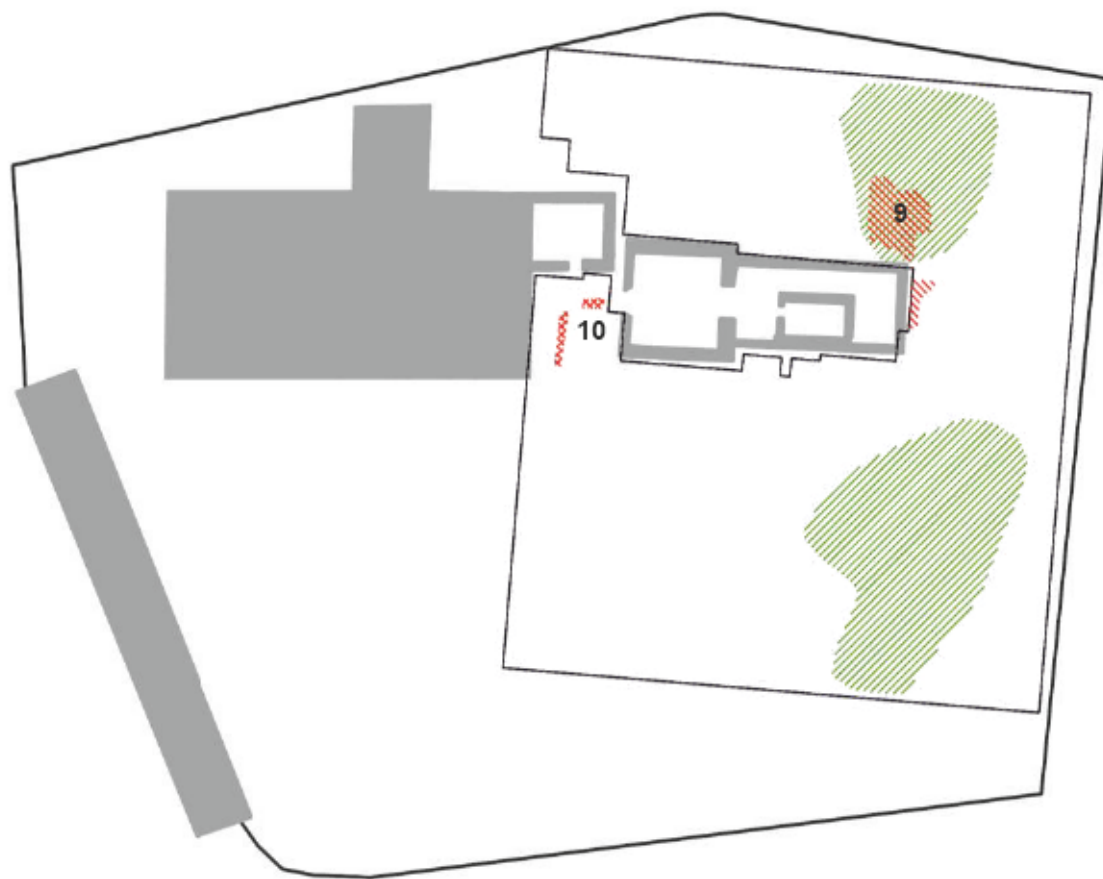
0m






20m



BOOK OF DEER PROJECT
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GPR Survey
1.50m - 1.75m Interpretation



-  ? Wall/Rubble
-  ?? Archaeological
-  Trend
-  ?Natural
-  Near Surface Feature:
Grave marker / Burial



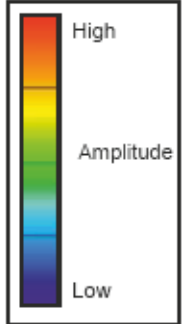
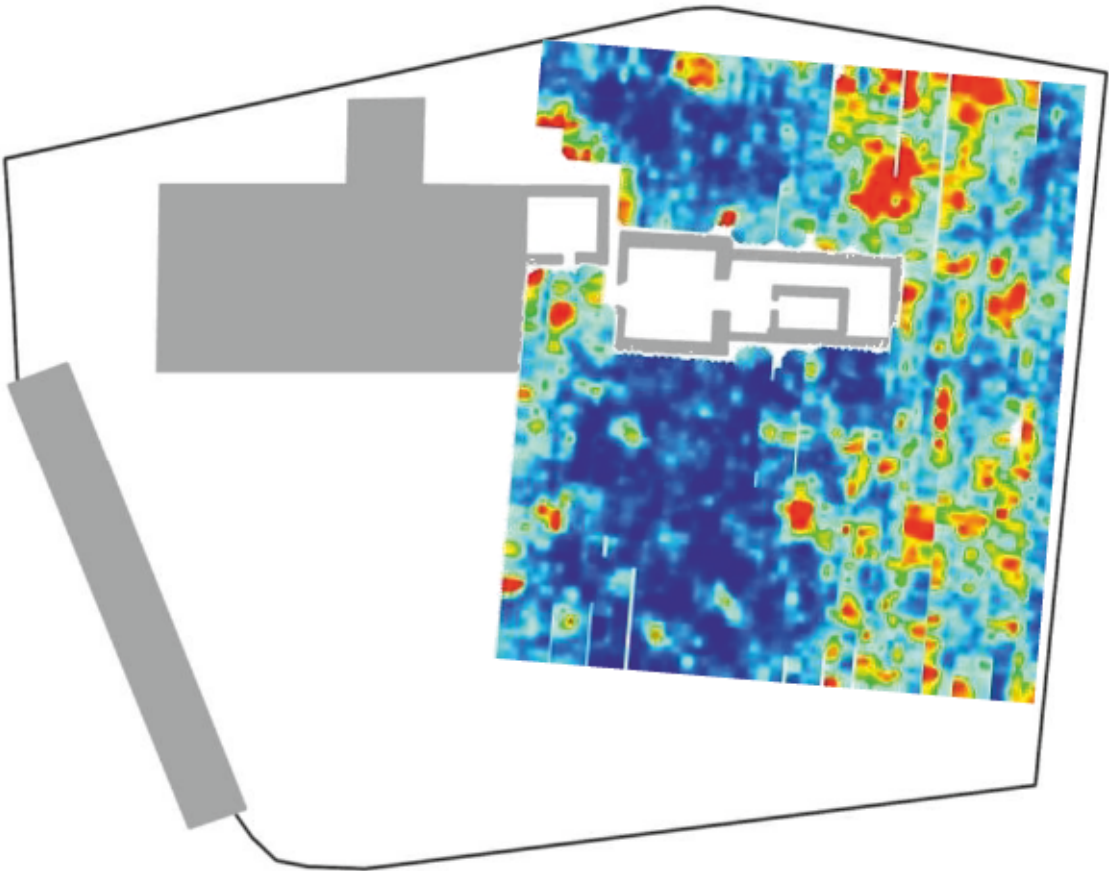
0m

20m



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**GPR Survey
1.75m - 2.00m Depth Slice**



0m

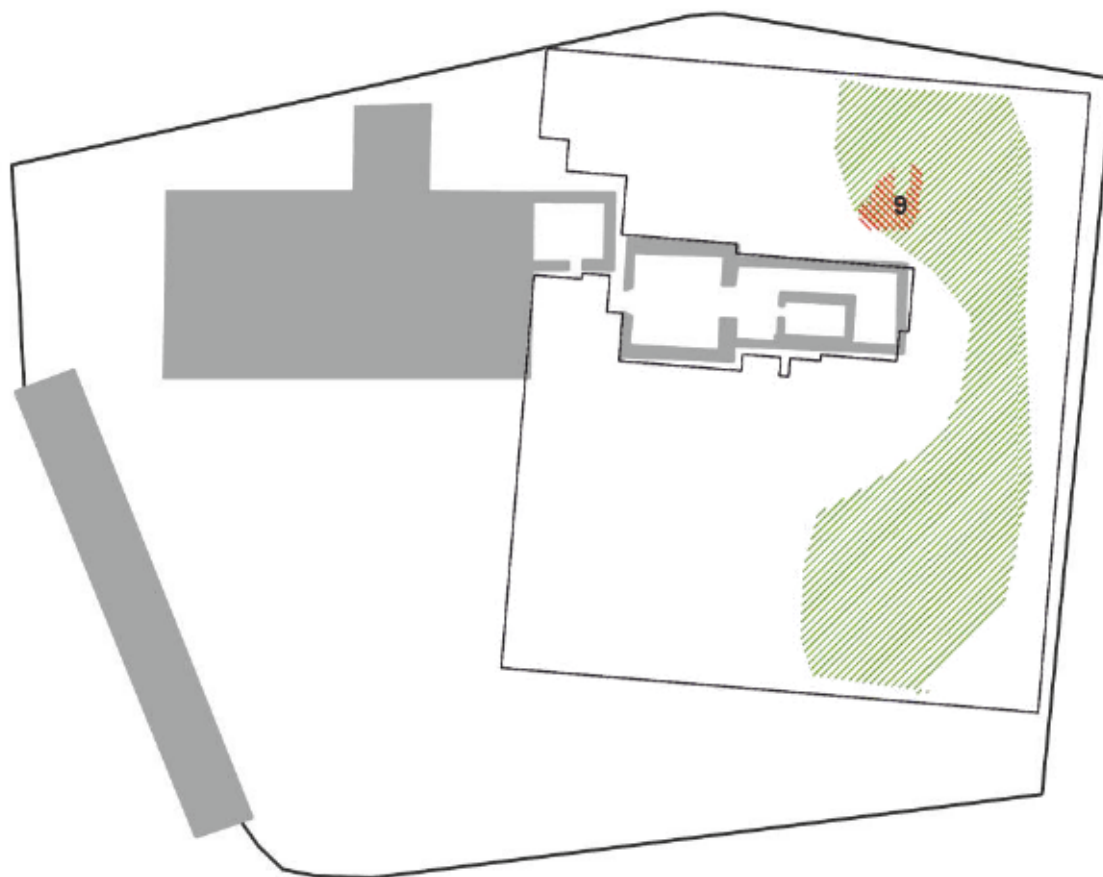
20m








Figure 16

**BOOK OF DEER PROJECT
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**GPR Survey
1.75m - 2.00m Interpretation**

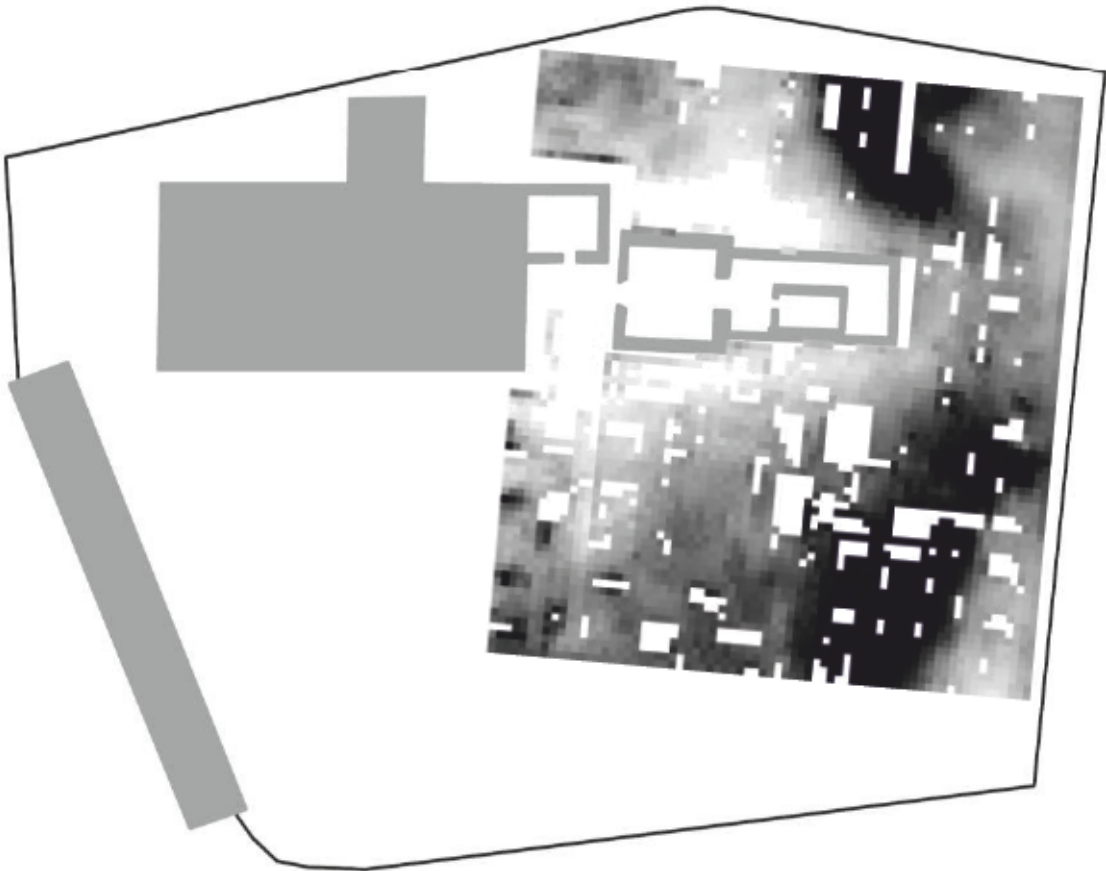


-  ? Wall/Rubble
-  ?? Archaeological
-  Trend
-  ?Natural
-  Near Surface Feature:
Grave marker / Burial



**BOOK OF DEER PROJECT
2015**

**Resistance Survey
Raw Data**



0m

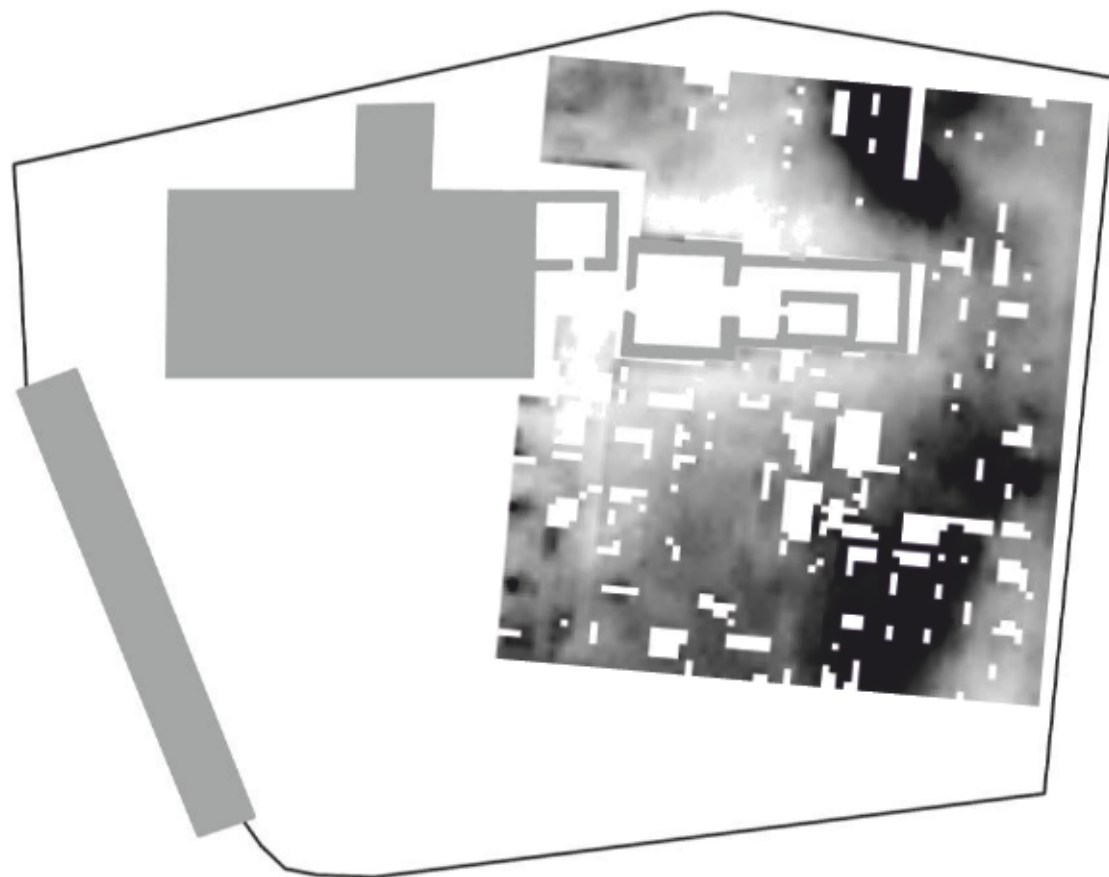
20m



Figure 18

**BOOK OF DEER PROJECT
2015**

**Resistance Survey
Interpolated Data**



0m

20m

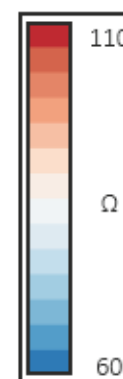
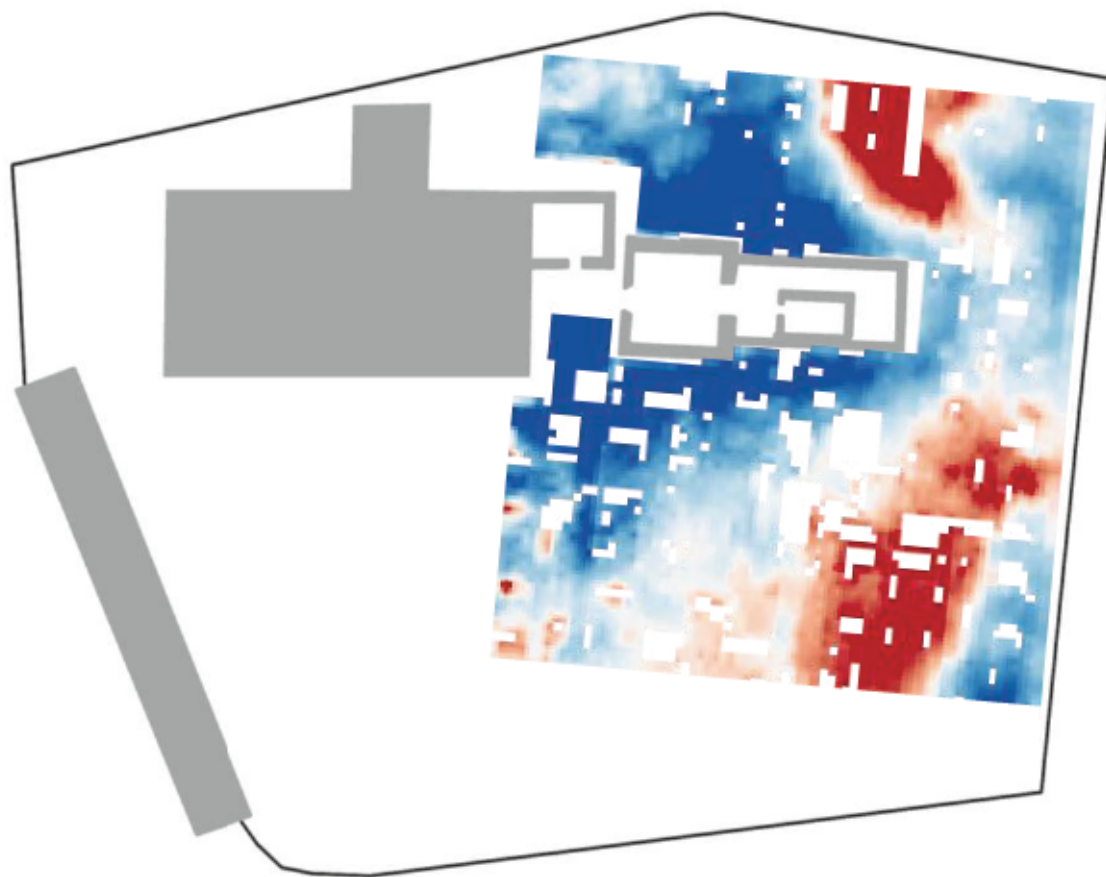


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Figure 19

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2015

Resistance Survey
Interpolated Data



0m

20m

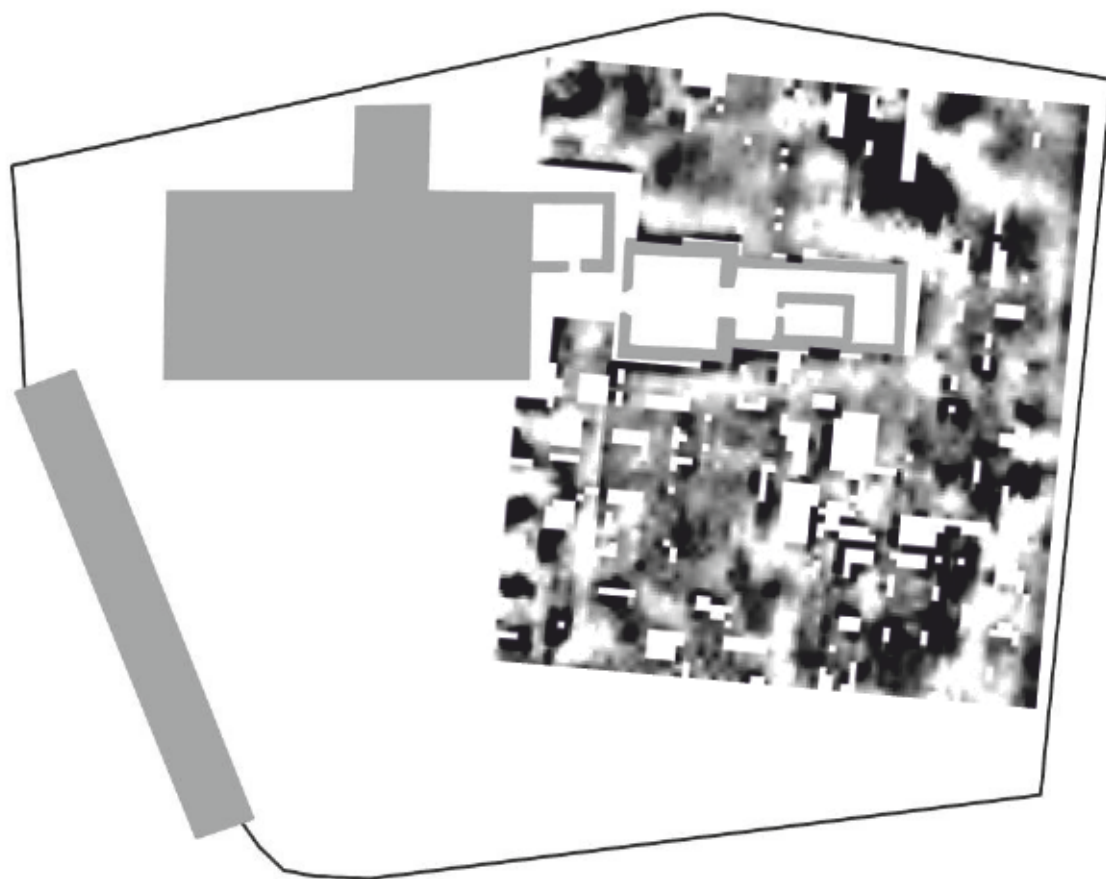


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Figure 20

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2015

Resistance Survey
High Pass Filtered Data



0m

20m

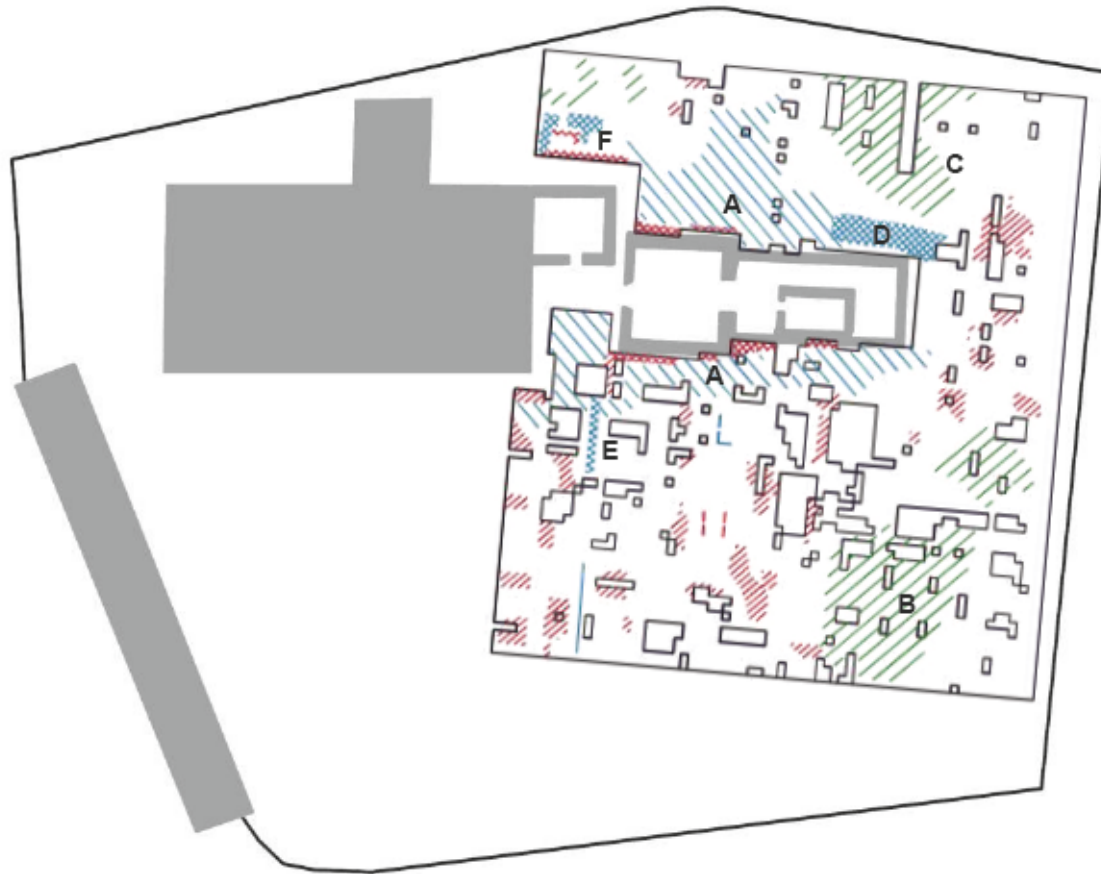







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Figure 21

**BOOK OF DEER PROJECT
2015**

**Resistance Survey
Interpretation**



-  High Resistance: ?Foundations
-  High Resistance: ?Burials
-  High Resistance Trend
-  High Resistance: ?Natural
-  Low Resistance: ?Archaeology
-  Low Resistance: ?Natural
-  Low Resistance Trend



0m

20m



APPENDIX 5 PHOTOGRAPHS

Photo No	Description	Facing
DSC_0687-93	Clearing area of Tr 1	
DSC_0694-5	Building 1 E arm	E
DSC_0696	Building 1 E wall with moved stone (foreground)	S
DSC_0697-9	Building 1 E wall with moved stone (background)	N
DSC_0700-2	Clearing area of Tr 1	
DSC_0703-4	S wall E end	E
DSC_0705-11	Clearing area of Tr 1	
DSC_0712	Clearing area of Tr 1 wall foundation 11	SE
DSC_0713-20	Clearing area of Tr 1	
DSC_0721	Stones 2 opposite wall foundation 11	W
DSC_0722	Wall foundation 11	N
DSC_0723-4	Wall foundation 11	W
DSC_0725-8	Wall foundation 11	E
DSC_0729-32	Stones 81	N
DSC_0733-4	Clearing area of Tr 1	
DSC_0735-6	Wall foundation 3 with large stone included in 2	S
DSC_0737-8	Wall foundation 3 with large stone included in 2	W
DSC_0739-40	Iron drain pipe fragments from N end Building 1 (they were lying on top of one of the stones)	
DSC_0741-2	N wall foundation 10	S
DSC_0743-6	Clearing Building 1	
DSC_0982	Clearing Building 2	N
DSC_0027-8	Wall Foundation 7 including large block of quartz with natural hole, also included in feature 2	N
DSC_0029-30	Wall Foundation 7 including large block of quartz with natural hole, also included in feature 2	W
DSC_0031	Wall Foundation 7 including large block of quartz with natural hole, also included in feature 2	E
DSC_0032-34	Wall Foundation 7	N
DSC_0035	Wall Foundation 7	E
DSC_0037-9	Wall Foundation 7 (N end)	W
DSC_0040	Wall Foundation 7 (N end)	E
DSC_0041	Wall Foundation 7 (N end)	S
DSC_0042-3	Wall foundation 5	E
DSC_0044-5	Wall foundation 5	N

DSC_0046-49	Wall foundation 5 being planned by Jan and Alice	W
DSC_0050-1	Stones 17	N
DSC_0052-3	Stones 17	E
DSC_0054	Jan and Alice recording wall foundation 11	NE
DSC_0055-6	Stones 17	N
DSC_0057-60	Stones 17	S
DSC_0061-2	Building 2	
DSC_0063-5	Building 2 floor 24	
DSC_0066-8	Building 1 wall foundation 3 including large curved stone included in feature 2	S
DSC_0069-70	Building 1 wall foundation 3 including large curved stone included in feature 2	W
DSC_0071-73	Building 1 wall foundation 13	W
DSC_0074-76	Christina and Andrew uncovering stones 17	
DSC_0077-79	Pete working on wall foundation 5	
DSC_0080	Looking W across Building 1	W
DSC_0081	Wall foundation 5	E
DSC_0082	Wall foundation 5	N
DSC_0083-85	Wall foundation 5	W
DSC_0087-8	Stones 17	N
DSC_0089-90	Stones 17	E
DSC_0091-98	Wall foundation 5	E/N
DSC_0099-100	Building 2 floor 24	SE
DSC_0101-2	Building 2 floor 24	E
DSC_0103-107	Stones 81 cleaned and sectioned	N
DSC_0108	Building 1 N wall with stones 9 and 'pulpit stone' 82	E
DSC_0109	Stone 82	E
DSC_0110-113	Stone 82	N
DSC_0114-5	Wall foundation 10 N wall Building 1 with stone 82 (background)	S
DSC_0116	Wall foundation 10 N wall Building 1	E
DSC_0117-8	Wall foundation 10 N wall Building 1	W
DSC_0119-20	Stones 9	W
DSC_0121-23	Stones 9 with wall foundation 10 (right)	W
DSC_0124-5	Wall foundation 10 N wall Building 1 with stone 82 (foreground)	N
DSC_0126	Stones 9	N
DSC_0127-8	Wall foundation 10 N wall Building 1 with stone 82 (foreground)	N
DSC_0129-32	Building 2 S wall foundation 22	N
DSC_0133	Building 2 S wall foundation 22	W
DSC_0134-38	Building 2 S wall foundation 22	E
DSC_0140	Building 2 W wall foundation 22	
DSC_0141-2	Building 2 S wall foundation 22	W

DSC_0143-56	School class with Elizabeth Cameron and Heather Jennings	
DSC_0157-60	Alice planning floor 24	
DSC_0161-4	Building 2 W wall foundation 22	N
DSC_0165-6	Building 2 W wall foundation 22	E
DSC_0167-8	Building 2 W wall foundation 22 S end	S
DSC_0169-77	Building 2 W wall foundation 22 stones 26 and 27 ?entrance	N
DSC_0178-9	Building 2 W wall foundation 22 N end	N
DSC_0180	Building 2 NW corner being cleared by Alice and Heather	N
DSC_0181-2	Room partition 29 being cleared by visitors Alison and Talitha	E
DSC_0183-4	Large stone in W wall Building 2	N
DSC_0185	Large stones in W wall Building 2 with wall partition 29 (top)	SE
DSC_0187-8	Building 2 NW corner N wall 73	E
DSC_0189	Building 2 N wall	S
DSC_0190-92	Building 2 N wall	SW
DSC_0193-96	Building 2 NE corner	S
DSC_0197	Building 2 NE corner	W
DSC_0198-9	Building 2 E wall	S
DSC_0200-1	Wall foundation 29 being uncovered	W
DSC_0202	Wall foundation 29 being uncovered	S
DSC_0203	Wall foundation 29 being uncovered	N
DSC_0204-5	Details of 29	
DSC_0207	Deturfing Tr 4	N
DSC_0208	Deturfing Tr 5	NNE
DSC_0209-11	Tr 4	W
DSC_0212	Tr 5	NNE
DSC_0213	Tr 4	N
DSC_0214	Tr 4	E
DSC_0215	Tr 4	N
DSC_0216-17	Tr 4 slate spindle whorl found by Alice SF1	
DSC_0218-19	Tr 5 small stone surface 52	W
DSC_0220-21	Tr 5 small stone surface 52	E
DSC_0222	Tr 4	N
DSC_0223	Tr 5	E
DSC_0224-27	Tr 3	W
DSC_0228-30	Tr 4 first clean	N/W/E
DSC_0231	Tr 3 stones in topsoil	W
DSC_0232	Tr 5 52 half sectioned	E
DSC_0233-4	Tr 5 52 half sectioned	W
DSC_0235-7	SF 1 slate spindle whorl	
DSC_0238-9	Tr 4 iron railings (photographed and given to Louis from church)	
DSC_0240-3	Tr 3	

DSC_0244-5	Tr 4 iron railings (photographed and given to Louis from church)	
DSC_0246	Tr 3 Mortar spreads 31 and 34	E
DSC_0247-8	Tr 3 Mortar spreads 31 and 34	S
DSC_0249	Tr 3 Mortar spreads 31 and 34	W
DSC_0250-1	Tr 3	SW
DSC_0252-3	Tr 5 digging through 51	E
DSC_0254	Tr 5 digging through 51	S
DSC_0255	Tr 5 Irvine and Heather	NE
DSC_0256	Tr 4 Derek mattocking	N
DSC_0257-60	Tr 3	SW/S
DSC_0261	Tr 5 Irvine and Heatherwith Gordon Noble	
DSC_0262-7	Mortar 31	
DSC_0268-77	Tr 5 digging through 51	
DSC_0278-9	Tr 5 disarticulated human bones	
DSC_0280-85	Mortar 31	
DSC_0287-90	Backfilling Tr 5	
DSC_0291-93	Tr 4 iron railings (photographed and given to Louis from church)	
DSC_0294-5	Tr 4	N
DSC_0296-7	Tr 6	SE/W
DSC_0298-302	Tr 3, Tr 6, Tr 4	NW
DSC_0303-11	Tr 3 metalwork from below 31	
DSC_0311-12	Alice digging Tr 6	
DSC_0314-6	31 half sectioned; mortar and stone spread cut by burials with coffin fittings underneath	
DSC_0317-22	Tr 4 heavy clay fill down to 1.2m	
DSC_0323-4	Gravestone ('Joyce's step') SF4	
DSC_0325-6	Backfilling Tr 4	
DSC_0327	Sorting disarticulated human bone from Tr 3 ready for reburial	
DSC_0328	Metal detecting Tr 3 spoil heap	
DSC_0329-30	Tr 3 S section	S/SE
DSC_0331-2	Tr 3 34 removed	W
DSC_0333	Sorting disarticulated human bone from Tr 3 ready for reburial	
DSC_0334-5	Tr 3 plan	
DSC_0336-45	Tr 3 metalwork reburied	
DSC_0346-7	Gravestone SF4	
DSC_0348-9	Metal staple Tr 4	
DSC_0350-2	Tr 6 sandy fill down to 1m	
DSC_0353-4	Metal from Tr 6 backfilled	
DSC_0355-6	Tr 5 returfed	
DSC_0357	Tr 4 being backfilled by Reach Group with Becky	
DSC_0358-63	Tr 6 backfilled	
DSC_0364-66	Tr 4 backfilled	

DSC_0367	Building 2 S wall foundation	N
DSC_0368	Building 2 S wall foundation	W
DSC_0369-70	Building 2 S wall with floor 24 (right)	WSW
DSC_0371	Building 2 S wall with floor 24 (right)	SW
DSC_0372	Building 2 S wall foundation	E
DSC_0373-6	Building 2 W wall foundation	N
DSC_0377-80	Building 2 W wall foundation	E
DSC_0381	Stone 26	E
DSC_0382-3	Building 2 W wall foundation including large stone uncovered by school classes	E
DSC_0384-5	Building 2 W wall foundation	S
DSC_0386	Building 2 W wall foundation junction with wall foundation 29 (right)	N
DSC_0387	Wall foundation 29	E
DSC_0388	Building 2	S
DSC_0389	Wall foundation 29	N
DSC_0390-91	Wall foundation 29	W
DSC_0392-4	Wall foundation 29 details	
DSC_0395-7	Large earthfast boulder on W side NW corner Building 2 (not planned)	
DSC_0399-400	NW corner Building 2	E
DSC_0401-2	N wall Building 2	S
DSC_0403	N wall Building 2	WSW
DSC_0404-5	N wall Building 2	W
DSC_0406-8	N wall Building 2	WSW
DSC_0409	N wall Building 2	S
DSC_0410-12	N wall Building 2	W
DSC_0413	E wall Building 2 at NE corner	N
DSC_0414-5	E wall Building 2	S
DSC_0416	Wall foundation 29	W
DSC_0417	E wall Building 2 S end junction with S wall	S
DSC_0418-9	E wall Building 2 S end junction with S wall	W



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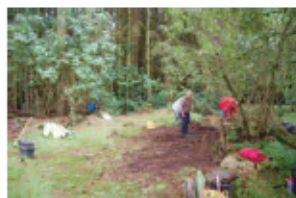
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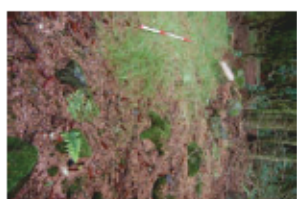
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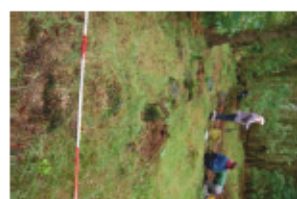
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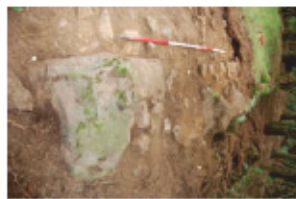
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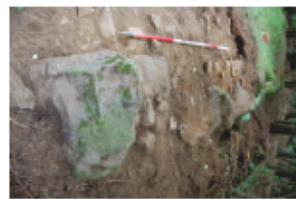
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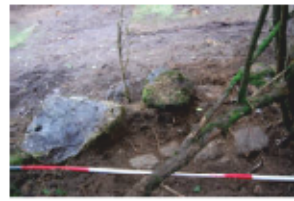
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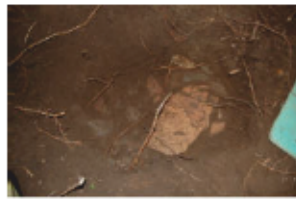
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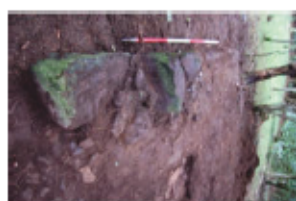
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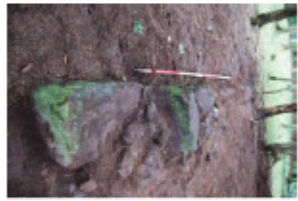
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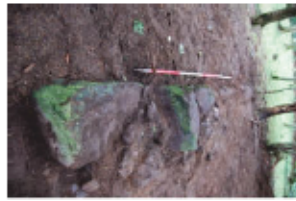
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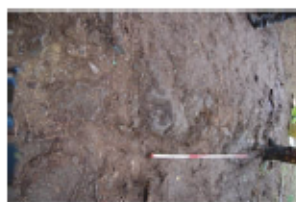
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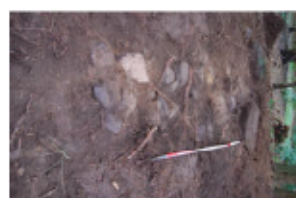
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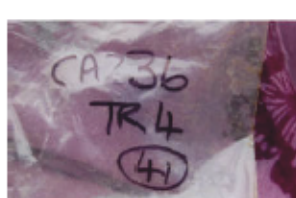
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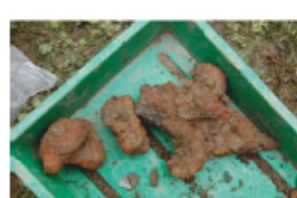
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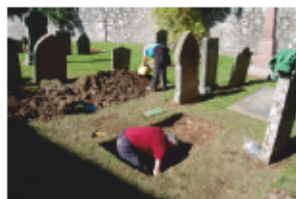
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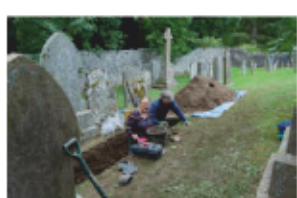
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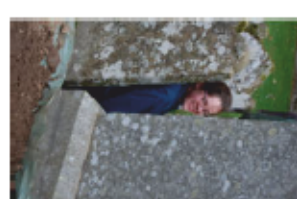
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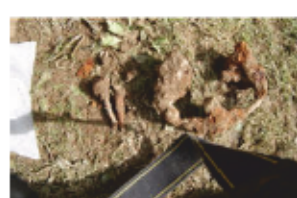
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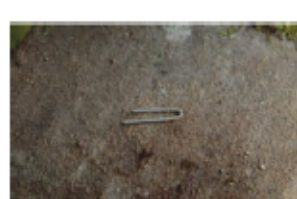
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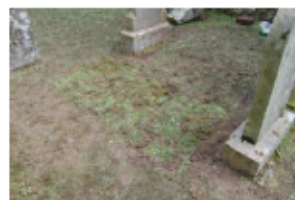
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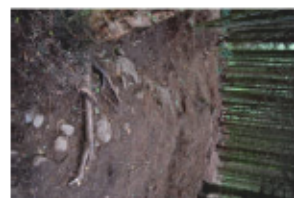
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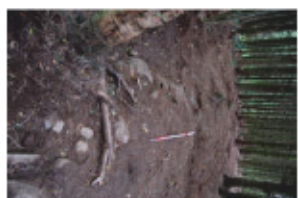
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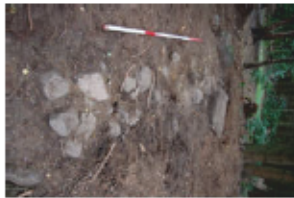
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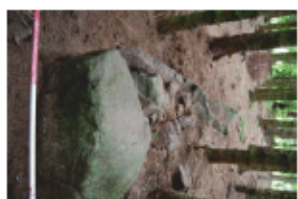
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