Culzean Castle, Outfall, 2016 Works: Archaeological Monitoring

Data Structure Report

by Claire Williamson

issued 27th May 2016

on behalf of The National Trust for Scotland

RATHMELL ARCHAEOLOGY LTD

Quality Assurance

This report covers works which have been undertaken in keeping with the issued brief as modified by the agreed programme of works. The report has been prepared in keeping with the guidance of Rathmell Archaeology Limited on the preparation of reports. All works reported on within this document have been undertaken in keeping with the Chartered Institute for Archaeologists' Standards and Policy Statements and Code of Conduct.

Signed Claire Williamson …….. Date ….27th May 2016…..

In keeping with the procedure of Rathmell Archaeology Limited this document and its findings have been reviewed and agreed by an appropriate colleague:

Checked Thomas Rees. …….. Date ….27th May 2016…….

Quality Assurance Data

Author(s)	Claire Williamson		
Date of Issue	27th May 2016	Version	1.0
Commissioning Body	The National Trust for Scotland		
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Event Type	Watching Brief		
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Rathmell Archaeology Code	RA14009	OASIS Ref	rathmell1-244217
Location	United Kingdom : Scotland : South Ayrshire		
NGR	NS 23207 10286	Parish	Ayr
Designation(s)	Garden & Designed Landscape – GDL00124		
Canmore IDs	Castle, Country House, Tower House (40959)		

Contents

Introduction

1. This Data Structure Report has been prepared for the National Trust for Scotland in support of the insertion of a new sewage outfall at Culzean Castle, South Ayrshire. The archaeological works were designed to mitigate any adverse impact on the archaeological remains within the development area. The location of the work is in proximity to several known historical and archaeological features including:

   - Culzean Castle Estate, Culzean Castle, which is a category A Listed Building protected under the terms of Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997.
   - Culzean Coves, Caves, which is a Scheduled Monument protected under the terms of Ancient Monuments and Archaeological Areas Act 1979.

2. A number of other structures and significant archaeological sites are known to exist in proximity to the development area and as elements of the wider Designed Landscape surrounding Culzean Castle (Inventory Ref: GDL00124). The route of the outfall has been located so as not to disturb any known archaeological sites.

3. Rathmell Archaeology Ltd has been appointed by the National Trust for Scotland to undertake the implementation of archaeological mitigation works. All works undertaken comply with Rathmell Archaeology Ltd standard working procedures and the West of Scotland Archaeology Service standard conditions. This Data Structure Report is designed to meet the requirement of the National Trust for Scotland.

Archaeological and Historical Background

4. From the 12th to the early 17th century, Culzean was one of a number of small castles of the Kennedy family. It occupied a strong position on top of cliffs, with a steep valley and escarpments defending the landward side (Figure 1a). A series of caves in the rock beneath contained "two dainty spring wells". The fortified caves can still be seen at NS 2327 1030, just above high water mark. In the hands of a cadet branch before it became the seat of the head of the family in the mid-18th century, it remained a comparatively modest and typical Scots tower house.

5. The old castle was remodelled by Robert Adam (Close and Riches 2012) for David, 10th Earl of Cassilis, starting in 1775. The southern front was built up, incorporating some of the masonry of the old tower in the main block; wings were added to east and west. Although the central range of Culzean Castle incorporates remains of the earlier castle it is not built on the site of it. After some years, the drum tower on the edge of the cliff was added, and the central well was filled in. Adam's work included the stable buildings, and also the mock ruined arch and causeway which now form the main approach to the castle. Figure 1b shows Culzean Castle as it appears on the 1st edition Ordnance Survey in 1859. In 1879, the castle took its final form with the addition of the west wing on the site of Adam's brewhouse.

6. In 1945, the Kennedy family gave the castle and its grounds to the National Trust for Scotland (thus avoiding inheritance tax). In doing so, they stipulated that the apartment at the top of the castle be given to General of the Army Dwight D. Eisenhower in recognition of his role as Supreme Commander of the Allied Forces in Europe during the Second World War. The General first visited Culzean Castle in 1946 and stayed there four times, including once while he was President of the United States. An Eisenhower exhibition occupies one of the rooms, with mementoes of his lifetime.

7. The Ayrshire (Earl of Carrick's Own) Yeomanry, a British Yeomanry cavalry regiment, was formed by The Earl of Cassillis at Culzean Castle in about 1794. The castle re-opened in April 2011 after a refurbishment funded by a gift in the will of American millionaire William Lindsay to the National trust for Scotland. Lindsay, who had never visited Scotland, requested that a significant portion of his $4 million go towards Culzean.

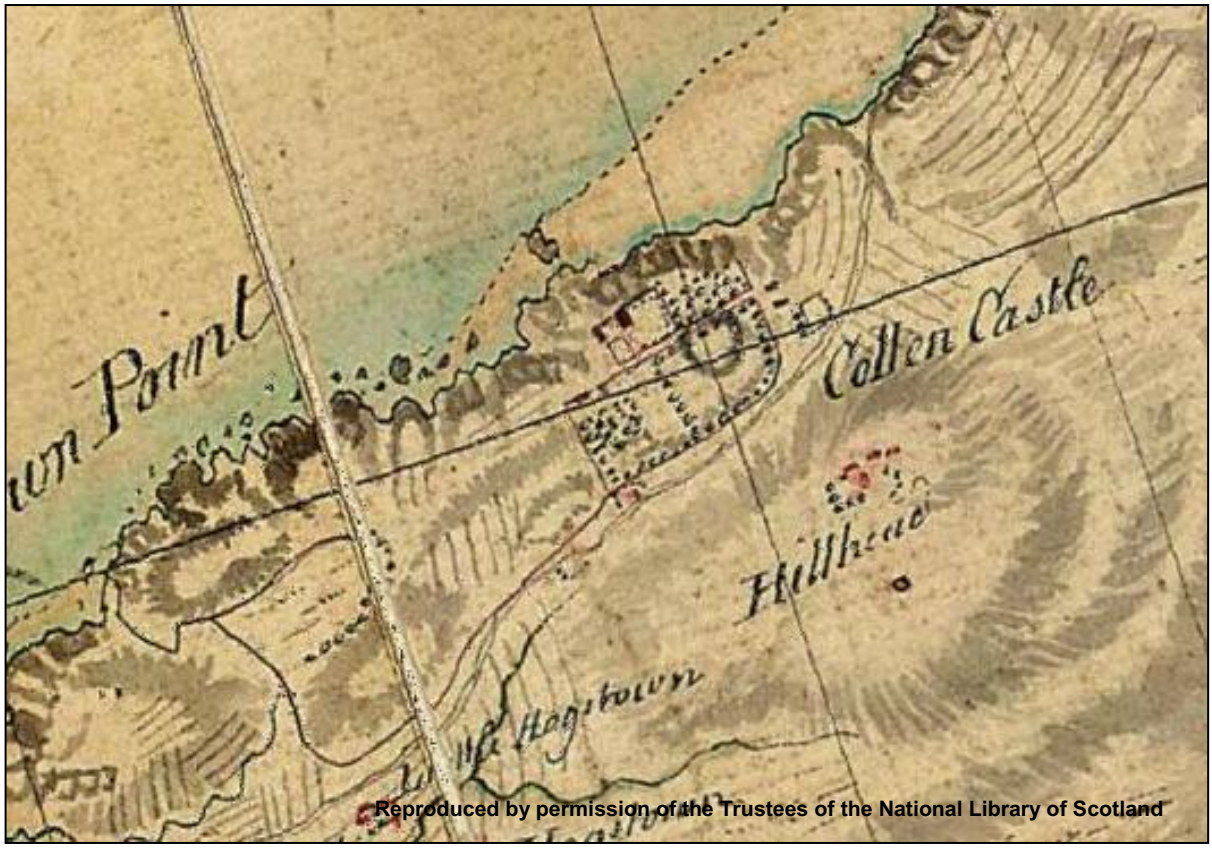

Figure 1a: Extract from Roy's Military Map of 1752-55

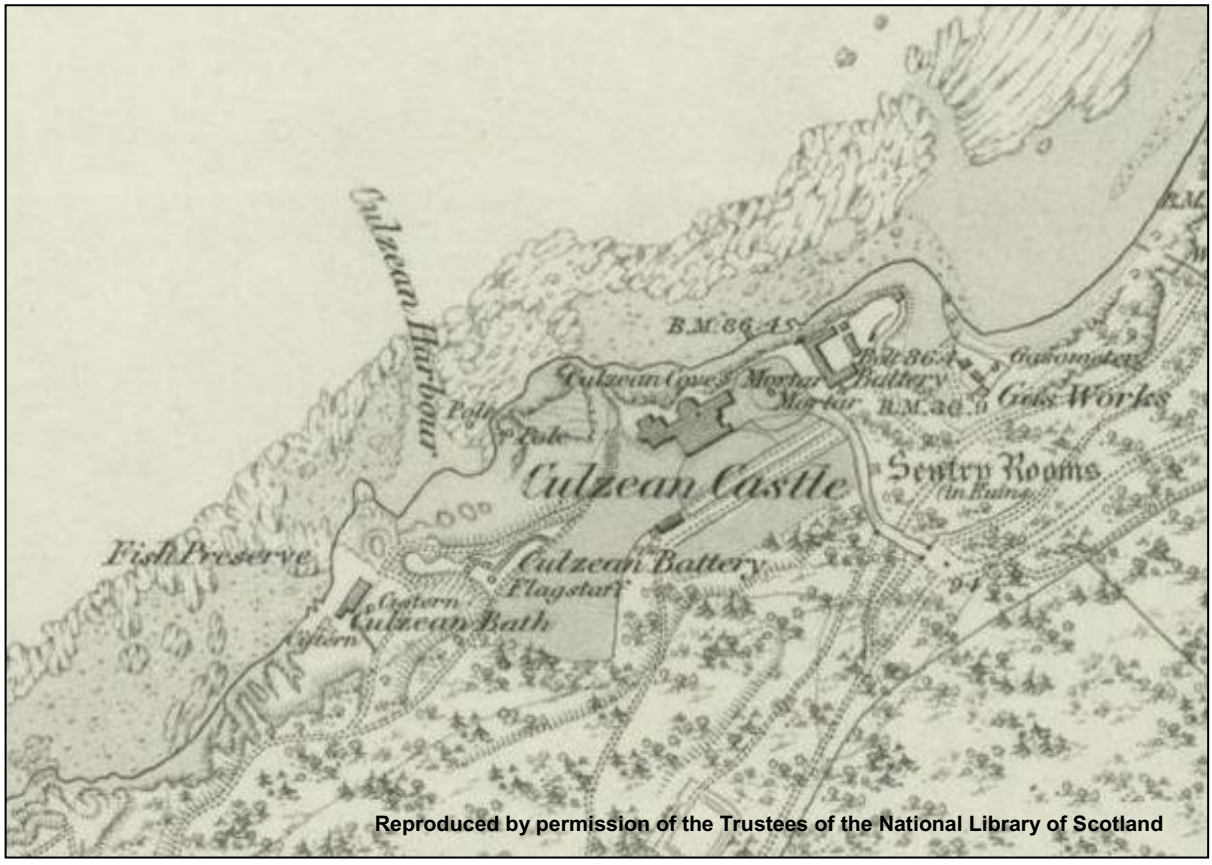

Figure 1b: Ordnance Survey 1st edition Map of 1859

Figure 2a: Culzean Castle

Figure 2b: Machine stripping the access road up the slope, from the W

Project Works

8. The programme of works comprised the archaeological monitoring of an access road and trench for the insertion of a new outfall pipe to the northwest of Culzean Castle. The road and trench were machine excavated using a mini digger and a larger 360° tracked excavator depending on access.

9. In compliance with the Method Statement (Matthews 2016), any potential archaeological features were investigated and recorded, with the on-site works taking place intermittently from the 19th April to 4th May 2016. All works were conducted in accordance with the Chartered Institute for Archaeologists' Standards and Policy Statements and Code of Conduct and Historic Scotland Policy Statements.

Findings

10. Culzean Castle sits directly on the coast aligned southwest to northeast. The area stripped for siting of the new outfall pipe was located to the immediate northwest of the castle (Figure 2a), starting at the current sceptic tank positioned in a private garden to the rear overlooking the coastline, and running downslope to the foreshore.

11. The excavation works consisted of the stripping and grading of a wider access road to allow for the movement of materials up from the foreshore, and a narrower trench for the pipe which sat within the limits of the access road (see Figure 5).

12. The access road ran roughly north-northeast to south-southwest up the majority of the slope (Figure 2b) and measured approximately 35m long and up to 6m wide. The depth of the stripped area varied depending where it sat on the slope. In the lower portions of the slope and along the western edge it could be a minimum of 300mm, while along the upper eastern edge it exposed a section measuring 1.5-2m deep. This was due to having to cut through the steeper slope running to the east on this side in order to create a surface that sat level with the western edge. The access road stopped just to the west of the garden leaving a gap in between the two areas where the slope was at its steepest.

13. At this point an area measuring 3-4m wide, and approximately 500mm deep, was stripped for a distance of approximately 6m to the east-northeast, running up the highest section of the slope stopping at the point where it levelled off into the garden.

14. In the garden, the pipe trench, measuring 0.7-1.1m wide and 1.2m deep, started at the northeastern access chamber for the sceptic tank (Figure 3a) and ran to the southwest to connect with the stripped area on the slope, for a total length of approximately 12m. The trench was then continued down the slope, within the limits of the stripped access road, measuring approximately 1.1-1.6m wide and up to 1.1m deep from the stripped ground level until it reached the beach, although becoming shallower in depth as it went further downslope to a minimum of 500mm. As the creation of the graded access road involved casting the excavated material over the stripped area to form a more level surface, the pipe trench on the lower slope did not make it through the redeposited material.

15. Prior to excavation, the area of the garden was covered by a layer of turf and topsoil (002) which consisted of a quite compacted dark brown silty clay with frequent stone inclusions, measuring 200mm thick.

16. Underlying (002), sat made ground (003) relating to the insertion of the sceptic tank (Figure 3a). This consisted of a loosely compacted dark brown silty clay with frequent gravel inclusions. It contained modern artefacts including an 'HP' glass bottle, sherds of blue and white glazed white earthenware (transfer printed) and both worked and unworked sandstone blocks measuring up to 650mm by 550mm by 180mm in size. As excavated the deposit measured 800mm thick, but the base of it was not reached and the trench stopped within this deposit.

17. Prior to excavation, the slope was covered by a layer of turf, moss and rough vegetation, including trees, over a thin layer of quite compact dark brown silty clay measuring 200mm deep (001). Underlying this was a mixture of gravel (004) and topsoil (005) (Figure 3b). Gravel (004) started at the top of the slope at the point where it levelled off

into the garden and stopped 11.5m from the base of the slope. It comprised a loosely compacted grey gravel containing frequent artefacts including brick, window glass, sherds of white glazed white earthenware and building debris. It measured up to 1m thick but thinned towards the base and top of the slope.

18. Underlying (004), and (001) at the base of the slope where (004) wasn't present, sat an earlier layer of topsoil (005). This consisted of a quite compact mid- to dark yellow brown sandy clay with frequent roots and gravel inclusions, containing sherds of white gazed white earthenware, glass and fragments of ceramic drain pipe. It measured up to 700mm thick. Across the majority of the slope the works did not go any deeper than these deposits.

19. The only area where (004) and (005) were not present was along the southwest side at the top of the slope, where it was at its steepest just below the garden. Here, underlying topsoil (001) the pipe trench revealed deposit (006). This consisted of a loosely compacted pale yellow brown sand and fine gravel with lenses of firmly compacted dark brown silt clay forming tip lines throughout (Figure 4a). It contained occasional sandstone blocks (both worked and unworked) and measured 800mm to 1.5m thick.

20. Underlying (006), sat deposit (007). This was only exposed in a small area at the base of the pipe trench just before it ran into the access road, and consisted of a very compact mid- to dark orange/yellow silty sand (Figure 4b). It was dug to a depth of 200mm but continued deeper than the area excavated.

21. No significant archaeological features or *in situ* structural remains were uncovered during the works.

Discussion

22. The monitoring works did not reveal any significant archaeological features within the excavated area.

23. The area of the garden had already been previously disturbed by the insertion of the sceptic tank and the original outfall pipe which ran to the northeast. The pipe trench excavated for these works skirted around the northeast and northwest sides of the two access chambers for the sceptic tank before running down the slope, and as such, never went outwith the extent of the 20th century made ground which had been infilled around these features.

24. Running down the slope, the pipe trench and wider access road revealed a number of deposits which revealed past activities of dumping of material by casting it down the slope. At the very top of the slope this material took the form of mostly soil deposits represented by (006) but further to the northeast, and increasing as it moved downslope, the material became gravel (004) with large quantities of artefacts including ceramics, metal, glass, worked and unworked sandstone blocks and even fragments of sink and fireplace surrounds.

25. It is possible that the soils at the top of the slope may have been the excess material dumped to the side after the insertion of the sceptic tank, while the gravel and artefacts which spread down the majority of the slope, relate to the dumping of old material during refurbishments to the castle. While the overlying dense vegetation and tree coverage (001) indicates that the material wasn't dumped that recently, the material included within it points to a date at some point after the early to mid-20th century.

Figure 3a: Pipe trench meeting the sceptic tank in the garden (with original pipe at the base) showing made ground (003) from the NW

Figure 3b: WNW facing section along access road on slope showing (from top to bottom) deposits (001), (004) and (005)

Figure 4a: N facing section of pipe trench at very top of slope (where it starts to drop away from garden) showing deposit (006)

Figure 4b: Deposit (007) exposed in pipe trench at base of the uppermost steep section of the slope before the trench turns to run down the access road

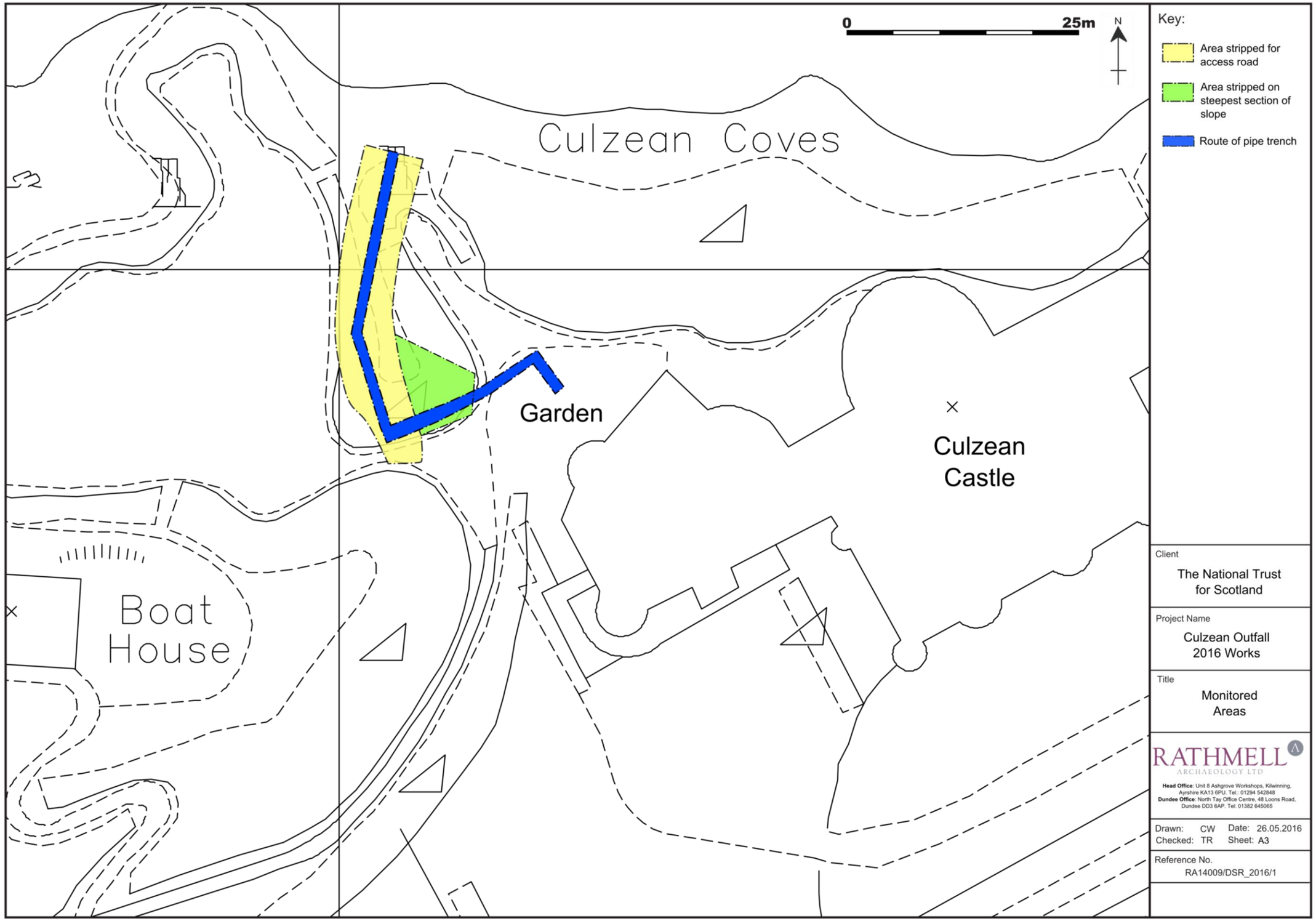

Figure 5: Plan of monitored area

Recommendations

26. The replacement of the outfall pipe at Culzean Castle will have added greatly to the maintenance of the site and should hopefully negate the need for future works to be carried out on the outfall services in this area for some time to come.

27. As no new significant archaeological features were uncovered during the monitoring, no further archaeological works are recommended as a direct consequence of these works. It is also recommended that shallow works within these areas will not require monitoring in the future. However, the high potential for archaeological features in the remainder of the areas surrounding Culzean Castle, and at greater depths within these areas, should still be taken into account whenever any future works are to be carried out.

28. The appropriateness and acceptability of our recommendations rest with the National Trust for Scotland.

Conclusion

29. Archaeological monitoring works were carried out in respect to the insertion of a new outfall pipe at Culzean Castle. The archaeological works were designed to mitigate the impact on the archaeological remains within their development area.

30. The works did not reveal the presence of any significant archaeological features or *in situ* structural remains within the excavated areas. The pipe started in the garden to the immediate rear of the castle, and only met modern made ground surrounding the insertion of the sceptic tank. As it ran down the slope, it exposed 20th century dumped material which had likely been cast down the slope during an earlier phase of refurbishments to the castle. With the possible exception of one small area near to the top of the slope, the works did not reach deeper than these deposits and did not reveal the underlying natural subsoil.

Acknowledgements

31. The author is grateful to Gavin Walker and Derek Alexander from the National Trust for Scotland who gave their support and guidance for these archaeological works. I would also like to thank Scott and Barry from JJL Groundworks for all their assistance on site. Thanks also go to Liam McKinstry who covered some of the on-site works, and to Thomas Rees for editing this report.

References

Close, R. and Riches, A., 2012, *The Buildings of Scotland, Ayrshire and Arran*. Yale University Press.

Matthews, A. 2016 *Culzean Outfall, South Ayrshire: Archaeological Mitigation, Method Statement*, unpublished commercial document by Rathmell Archaeology Ltd

Cartographic

1752-55	Roy, W.	Military Survey of Scotland
1859	Ordnance Survey	Six-inch 1st edition, Ayrshire, Sheet XLIv

Appendix 1: Registers

Within this appendix are all registers pertaining to works on-site during the watching brief.

Context Register

Context No.	Area/ Trench	Type	Description	Interpretation
001	Slope	Deposit	Vegetation and moss over a thin layer of quite compact dark brown silty clay (200mm deep) with frequent roots and small stones. Extends across full extent of slope.	Layer of topsoil and vegetation covering entire extent of slope
002	Garden	Deposit	Quite compact dark brown silty clay with frequent stone inclusions. Covered by turf. Measures 200mm thick, and extends across garden adjacent to main building.	Turf and topsoil in garden
003	Garden	Deposit	Loosely compacted dark brown silty clay with frequent gravel inclusions (including medium sized angular sandstone boulders). Contains modern artefacts including an 'HP' glass bottle, sherds of blue and white glazed white earthenware (transfer printed) and sandstone blocks ≤65cm by 55cm by 18cm (some squared off, some rubble). Measures 800mm thick although bottom of deposit not reached. Located surrounding the current sceptic tank and outfall pipe (sitting at 0.9-1m below ground level) in the garden area.	Made ground from the insertion of the current sceptic tank
004	Slope	Deposit	Loose angular stone gravel (grey in colour) containing frequent inclusions of brick, window glass, sherds of white glazed white earthenware, and building debris. Covered by (001). Starts at the top of the slope (before it levels into the garden) and runs downslope, stopping approximately 11.5m from the base. Not present along SW side of stripped area on upper slope where (006)/(007) underlies (001) instead. Measures up to 1m thick although gets thinner towards base and top of slope.	Large deposit of dumped material which has been thrown down the slope, containing late 19th to 20th century material
005	Slope	Deposit	Quite compact mid- to dark yellow brown sandy clay with frequent roots and gravel inclusions. Artefact inclusions include sherds of white glazed white earthenware, glass and fragments of ceramic drain pipe. Measured up to 700mm thick and extended up full length of slope, apart	Topsoil across slope

Context No.	Area/ Trench	Type	Description	Interpretation
			from the SW side of stripped area on upper slope where (006)/(007) present instead. Underlies (004), and (001) where (004) not present at base of slope.	
006	Slope	Deposit	Loose pale yellow brown sand and fine gravel with lenses of firmly compacted dark brown silt clay forming tip lines throughout. Contains occasional sandstone blocks (some squared off). Measure 0.8 to 1.5m deep. Extends across SW side of stripped area on uppermost steep portion of slope, just below garden. Underlies topsoil (001).	Further dumped deposits underlying topsoil (001) on uppermost portion of slope
007	Slope	Deposit	Very compact mid- to dark orange/yellow silty sand. Small area exposed at base of pipe trench at base of steep slope just below garden. Revealed to depth of 200mm although full depth not revealed.	Possible natural subsoil, but not enough exposed to be certain

Photographic Register

Image No.	Description	From	Date
01	Digging access on slope to beach	N	19/04/16
02	Digging access on slope to beach	NNE	19/04/16
03	Digging access on slope to beach	NW	19/04/16
04	Digging access on slope to beach	NNE	19/04/16
05	Digging access on slope to beach	N	19/04/16
06	General mid-ex of access road on slope	NNE	19/04/16
07	W facing section at top of access road	W	19/04/16
08	General mid-ex of access road on slope	SSW	19/04/16
09	Pre-ex of garden area at top of slope (joining with current tank)	E	19/04/16
10	Pre-ex of garden area at top of slope (joining with current tank)	ENE	19/04/16

Image No.	Description	From	Date
11	Pre-ex of garden area at top of slope (joining with current tank)	E	19/04/16
12	Current pipe exposed at top	NE	19/04/16
13	Current pipe exposed at top	NNE	19/04/16
14	General shots from base of slope	N	19/04/16
15	General shots from base of slope	NNW	19/04/16
16	General shots from base of slope	W	19/04/16
17	General shots from base of slope	NNE	19/04/16
18	General shots from base of slope	NNE	19/04/16
19	General shots from base of slope	W	19/04/16
20	General shots from base of slope	NE	19/04/16
21	Working shot	SSE	19/04/16
22	Working shot	SSE	19/04/16
23	Mid-ex of excavated section on lower slope	SSE	19/04/16
24	WNW facing section on slope showing (001)/(004)	WNW	20/04/16
25	WNW facing section on slope showing (001)/(004)	WNW	20/04/16
26	WNW facing section on slope showing (001)/(004)	NNW	20/04/16
27	WNW facing section on slope showing start of (004)	NNW	20/04/16
28	Working shot	SSW	20/04/16
29	Working shot	SW	20/04/16
30	SW facing section on upper half of slope	SW	20/04/16
31	Shot of stripped area (material from top spread over)	NNE	20/04/16
32	Shot of stripped area (material from top spread over)	NNE	20/04/16
33	Shot of stripped area (upper slope)	NW	20/04/16

Image No.	Description	From	Date
34	Shot of stripped area (from top)	ENE	20/04/16
35	Route up steep slope to garden	W	21/04/16
36	Route up steep slope to garden	SW	21/04/16
37	Top of slope just below steep section	SSE	21/04/16
38	Shot down slope	S	21/04/16
39	Top of slope just below steep section	NNW	21/04/16
40	Shot of section at manhole in garden, current pipe still *in situ*	SE	21/04/16
41	Section meeting tank in garden	NW	21/04/16
42	Section meeting tank in garden	NE	21/04/16
43	NE facing section showing (003) around tank	NE	21/04/16
44	Working shot – digging in garden area	NE	21/04/16
45	Working shot – digging in garden area	NE	21/04/16
46	Working shot – track in garden	NE	21/04/16
47	Working shot – track in garden	NE	21/04/16
48	NE-SW portion of track in garden (fully excavated)	NE	21/04/16
49	Working shot – pipe trench in upper slope	NE	25/04/16
50	Working shot – pipe trench in upper slope	NE	25/04/16
51	N facing section through upper steep section of slope	NNE	25/04/16
52	N facing section through upper steep section of slope	NE	25/04/16
53	Shot of pipe trench through upper slope	W	25/04/16
54	Shot of pipe trench through upper slope	W	25/04/16
55	Shot of architectural fragments/glass bottles pulled out of (004)/(005)	-	28/04/16
56	Shot of architectural fragments/glass bottles pulled out of (004)/(005)	-	28/04/16

Image No.	Description	From	Date
57	Shot of architectural fragments/glass bottles pulled out of (004)/(005)	-	28/04/16
58	(007) exposed at base of upper section	W	28/04/16
59	(007) exposed at base of upper section	W	28/04/16
60	Pipe trench at base of steep upper section	W	28/04/16
61	Pipe trench running to base of upper slope	W	28/04/16
62	Void	-	28/04/16
63	Shot of machine on beach	S	29/04/16
64	Working shot – pipe trench at top of access road	S	29/04/16
65	Pipe trench at top of access road	SSW	29/04/16
66	ENE facing section, pipe trench at top of access road	WSW	29/04/16
67	Pipe trench, upper half of slope	NW	29/04/16
68	Pipe trench, upper half of slope	SSW	29/04/16
69	Pipe trench midway at second manhole	SSW	03/05/16
70	Pipe trench midway at second manhole	SSW	03/05/16
71	Pipe trench midway at second manhole (2nd pipe)	SSW	03/05/16
72	Pipe trench midway at second manhole (2nd pipe)	SSW	03/05/16
73	Pipe trench midway at second manhole (3rd pipe)	SSW	03/05/16
74	Pipe trench midway at second manhole (3rd pipe)	SW	03/05/16
75	View of upper access to site	NNE	04/05/16
76	View of excavation area (shows uneven ground)	NNE	04/05/16
77	View of excavation area (shows uneven ground)	N	04/05/16
78	4th pipe trench excavated	SSW	04/05/16
79	4th pipe trench excavated	SSW	04/05/16

Image No.	Description	From	Date
80	5th pipe trench excavated	SSW	04/05/16
81	5th pipe trench excavated (close to final manhole)	SSW	04/05/16
82	Final pipe and manhole excavated (at beach)	SSE	04/05/16
83	Final pipe and manhole excavated (at beach)	SSE	04/05/16

Appendix 2: Discovery & Excavation in Scotland

LOCAL AUTHORITY:	South Ayrshire
PROJECT TITLE/SITE NAME:	Culzean Outfall – 2016 Works
PROJECT CODE:	RA14009
PARISH:	Kirkoswald
NAME OF CONTRIBUTOR:	Claire Williamson
NAME OF ORGANISATION:	Rathmell Archaeology Limited
TYPE(S) OF PROJECT:	Monitoring
NMRS NO(S):	NS21SW 1
SITE/MONUMENT TYPE(S):	Castle, Country House, Steps, Tower House, Wall
SIGNIFICANT FINDS:	None
NGR (2 letters, 8 or 10 figures)	NS 23207 10286
START DATE (this season)	19th April 2016
END DATE (this season)	4th May 2016
PREVIOUS WORK (incl. *DES* ref.)	Watching brief on test pits (Matthews 2014)
MAIN (NARRATIVE) DESCRIPTION: (may include information from other fields)	Archaeological monitoring works were carried out in respect to the insertion of a new outfall pipe at Culzean Castle. The archaeological works were designed to mitigate the impact on the archaeological remains within their development area. The works did not reveal the presence of any significant archaeological features or *in situ* structural remains within the excavated areas. The pipe started in the garden to the immediate rear of the castle, and only met modern made ground surrounding the insertion of the sceptic tank. As it ran down the slope, it exposed 20th century dumped material which had likely been cast down the slope during an earlier phase of refurbishments to the castle. With the possible exception of one small area near to the top of the slope, the works did not reach deeper than these deposits and did not reveal the underlying natural subsoil.
PROPOSED FUTURE WORK:	None
CAPTION(S) FOR ILLUSTRS:	None
SPONSOR OR FUNDING BODY:	The National Trust for Scotland
ADDRESS OF MAIN CONTRIBUTOR:	Unit 8 Ashgrove Workshops, Kilwinning, Ayrshire KA13 6PU
E MAIL ADDRESS:	contact@rathmell-arch.co.uk
ARCHIVE LOCATION (intended/deposited)	Report to West of Scotland Archaeology Service and archive to HES Collections.

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