

PORTENCROSS CASTLE;  
ARCHAEOLOGICAL EVALUATION  
DATA STRUCTURE REPORT



PROJECT 2597

carried out  
on behalf of  
Friends of Portencross Castle Ltd

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by  
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This document has been prepared in accordance with GUARD standard operating procedures.

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## 1.0 Executive Summary

In April 2008, Glasgow University Archaeological Research Division (GUARD) carried out evaluations of the floor deposits in the basement and Great Hall of Portencross Castle, Portencross, North Ayrshire. The work was carried out on behalf of the Friends of Portencross Castle Ltd (FoPC) and was funded by FoPC and the Heritage Lottery Fund.

The evaluation found that the existing basement floor, which comprised flagstones and cobbles, was of relatively recent date and that the original stone floor lay about 0.45 m below the flags and cobbles. A drainage culvert in the basement had also been in-filled in modern times. The evaluation in the Great Hall found a compacted clay floor layer overlying rubble covering the barrel vault of the basement.

## 2.0 Introduction

This report refers to the archaeological evaluation of the floor surfaces of the basement and of the Great Hall of Portencross Castle, North Ayrshire. The evaluation involved ground-breaking works in the basement and the Great Hall in order to determine and state of repair of the walls of the structure and the nature of the underlying deposits. This investigation is part of an on-going programme of works to the castle that will help ensure its long term future. The investigation was commissioned by the Friends of Portencross Castle, and was carried out by GUARD from 22 to 25 April 2008. The project was funded by the Friends of Portencross Castle and the Heritage Lottery Fund.

## 3.0 Site Location, Topography and Geology

Portencross Castle is located on the shore of the Firth of Clyde, near West Kilbride (NGR: NS 1754 4891). It is built on an outcrop of bedrock, and is surrounded by the Firth of Clyde on three sides, with the Old Harbour being immediately north of the castle. To the east is an access track for the nearby houses.

The underlying drift geology consists of raised marine deposits of Flandrain age, while the solid geology consists of Portencross Sandstone formation of early Devonian age (Geology Digimap).

## 4.0 Historical and Archaeological Background

The medieval hall-house at Portencross (NMRS NS14NE 2) is both a Scheduled Ancient Monument and a grade A Listed Building. It is believed to have been built in the mid to late fourteenth century by the Boyd family, and it may have been used by the early Stuart kings as a staging post between the castles at Dundonald and Rothesay. The castle may have been built to replace the earlier medieval motte and bailey at Auld Hill (NMRS NS14NE 1), which itself appears to have succeeded a stone-built rampart of uncertain date. Portencross Castle was abandoned after 1660 and lost its roof after a storm in 1739. It remained a roofless ruin until a modern concrete roof was added in **XXXX**. In the early to mid nineteenth century, the castle was occupied by local fishermen working from the fishing station at Portencross north harbour (WoSASPIN 22569).

Four phases of construction have been identified at Portencross Castle involving initially a rectangular-shaped hall house built in the mid to late fourteenth century, the addition of an east wing in the late fourteenth century, the addition of further space and battlements in the late fifteenth century and finally the post-abandonment alterations (Caldwell et al 1988).

Previous archaeological work at the site has included a desk-based study (James 2002) which was incorporated into a preliminary assessment undertaken by ARP Lorimer & Associates and ARUP Scotland (2003). This was followed by a watching brief during works to the roof (Francoz 2006) and the writing of a Conservation Management Plan undertaken by Austin-Smith: Lord LLP (2007).

Other archaeological remains have been found in the area surrounding Portencross. Rig and furrow plough marks (NMRS NS14NE 18) are visible on aerial photographs at four sites to the east and south-west of the castle. An iron cannon (NS14NE 3), traditionally associated with the sinking of a ship from the Spanish Armada, was recovered from the sea in 1740 and is now on display at the offices of Hunterston Power Station. In the mid-1970s, over thirty lithics (NMRS NS14NE 11) were found on the

hill overlooking Portencross. These comprised polished blades, flakes and cores. In the mid-1980s, a worn bronze Roman coin from the reign of Trajan Dacius (AD 149-50) was found 50 yards offshore to the south of the castle (WoSASPIN 5173, (National Monuments Record for Scotland database; West of Scotland Archaeology Service database)

## 5.0 Aims and Objectives

The general aims of the archaeological evaluation were to expose, investigate and fully record the floor surfaces in the castle cellar/basement and in the Great Hall. This phase of work also aimed to determine whether any floor surfaces contemporary with the late medieval use of the castle still remained, to establish their state of preservation, and to investigate the formation processes that created and altered the floor levels over time.

The specific objectives were:

- to record the castle basement and the Great Hall in plan;
- to excavate a trial trench in the castle basement, the location of which was agreed with the project architect;
- to excavate two small test pits close to the walls in the Great Hall;
- to sample deposits and features in order to gather information on the contemporary environment and on the site formation processes, as well as material for dating, and
- to record all archaeological features during and after their excavation.

## 6.0 Methodology

### 6.1 *Basement* (Figure 2)

The castle basement is 7.8 m long by 4.7 m wide with barrel-vaulted ceiling, an entrance in the south-east, an inserted window in the north corner. The floor was lightly cleaned using a brush, trowel and shovel, with the spoil being stored in the south corner of the basement. The exposed floor surface was recorded by digital photography and by measured plan at a scale of 1:20. In consultation with the project architect, and in accordance with the Scheduled Monument Consent, an evaluation trench 4.7 m long and 0.6 m encompassed the full width of the basement. The trench was located over both the flagstone and cobbled floor surface in order to investigate the relationship between the two. The larger flagstones within the area of the excavation could not be lifted, so the trench was excavated in two stages, hereafter referred to as North Trench and South Trench.

The sections were recorded by digital photography and by measured drawings at a scale of 1:10. The fills were recorded by written description, and environmental samples were taken for potential future analysis, for retrieval of botanical remains and for archaeological artefacts. All finds from deposits below the existing floor level were recorded in three dimensions. The trench was back-filled after recording.

### 6.1 *Great Hall* (Figure 3)

The Great Hall was 7.6 m long and 5.0 m wide with doorways to the south and south-east, windows at the north and south, and a fireplace in the north-west wall. The hall is situated directly above the basement. At the time this work was carried out, scaffolding occupied most of the floor-space, with a gap of around 0.25 m between the scaffolding and the interior walls. Due to the safety implications of excavating outside the area protected by scaffolding, test pits were located 0.5 m from the interior walls adjacent to the windows.

Two test pits each 0.5 m by 0.5 m were excavated using trowels and mattocks. The test pits were recorded using digital photography, measured plan and section drawings at a scale of 1:10 and by written description. Environmental samples of the fills of the test pits were taken for possible future analysis, the retrieval of botanical remains and for archaeological artefacts. All finds from the pits were recorded in three dimensions. For safety reasons, the test pits were covered over after recording but were not backfilled to allow further inspection.

Scheduled Monument Consent was granted for these limited works in April 2008.

## 7.0 Results

### 7.1 Basement (Figure 4 & X)

#### *Early floor level and related deposits*

At the bottom of the evaluation trench bedrock was noted, which had a deposit of gravel and pebbles (026) that lay above larger sub-rounded stones (not excavated). These two deposits are very likely to be the original levelling layer within the castle basement and were used to fill the spaces between the uneven surfaces of the bedrock. Above this, and partially set into it, was a deposit of squared and rectangular stones (025) that are probably the remains of the original floor. This surface was quite rough and the stones did not appear to have been dressed, making the floor surface uneven. The surface may have been levelled naturally by deposits of what appears to be domestic or industrial debris (024). This deposit comprised heavily compacted white/light-grey crushed lime or ash. A deposit of black or dark brown silt (016) that had inclusions of small rounded stones and sea shells lay above the crushed lime/ash. This deposit was quite loosely compacted and would not have been robust enough to have been a floor surface. The inclusions of sea shell and the general composition of this deposit suggest that it most likely represents material that built up during a period of abandonment of the castle. A sherd of modern white-glazed pottery (SF7) was recovered from this layer, and was most likely deposited during later renovations to the basement floor.

#### *Culvert*

Although a stone culvert was visible within the north wall of the basement, and also externally, its nature and function remain unknown as any features associated with its construction lay beneath the flagstone floor. A thin deposit of orange/brown clay (018) at the south end of the evaluation trench may be the lining of a drainage channel, but this cannot be more fully established without further archaeological investigation. Any construction trench that might have been associated with the clay has been destroyed during more recent modifications to the basement floor.

#### *Recent modifications to the floor level*

Above the probable abandonment layer (016) at the south end of the trench was a very heavily compacted deposit of black silt (015) that had inclusions of charcoal, clinker, coal and broken sea shells, and smelled quite strongly of hydrocarbons. This is a modern deposit and may relate to the in-filling/destruction of the drainage culvert or to preparing the floor prior to the laying-down of the cobbles and flagstones. However, its actual purpose is presently unknown. Two distinct layers of sand lay above (015). The earlier of these was fine and yellow in colour (014) and closely resembles modern builder's sand, and the more recently deposited layer was coarse-grained yellow/brown sand (013) that appeared similar in composition to the sand at the Old Harbour at Portencross. Pieces of modern nylon rope and plastic (SF5) were recovered from the coarse sand deposit (013). Both of these deposits appear to be of relatively modern date and are probably contemporary with the use of the castle basement for fishing-related activities.

The upper layers of the basement floor, visible after cleaning, were flagstones (001) and cobblestones (002). Other floor deposits that related to fishing activities (004) were concentrated in the north-west corner of the basement and comprised timbers, pieces of rope embedded in tar and a thick metal chain.

### 7.2 Great Hall (Figure 5 & X)

The two test pits in the Great Hall showed that the floor above the barrel-vaulting in the basement was levelled using an infill of rounded and squared stones (011) and gravel (009). A very thin deposit of black silt (008) with inclusions of pea gravel, charcoal and lime mortar above the rubble infill is probably a cushioning or levelling layer for the actual floor surface. In test-pit 1, additional evidence for levelling is provided by a thin layer of red/brown silt (012). A layer of heavily compacted orange/brown clay (007) with inclusions of small rounded stones is likely to be the floor surface in the Great Hall. At the time of the evaluation, a heavily compacted deposit of mid-brown silt (006) covered the floor surface of the Great Hall. Patches of windblown sand, thin slivers of wood and pieces of lime mortar, presumably having fallen from the ceiling and walls, were included in this layer and a copper nail (SF1) was recovered from it. The pieces of wood were included in an environmental sample and may be the subject of future analysis.



Figure X Part of North-west facing section of trench, north end



Figure X Post-excavation view of Test Pit 1

## 8.0 Discussion

### 8.1 *Summary of the Fieldwork Results*

#### 8.1 *Basement*

The evaluation in the castle basement established that there at least two phases of flooring in this area, the earliest of which is a rough stone floor about 0.45 m below the level of the existing flagstone and cobble floor. The entire level of this earlier floor had to be built-up using a foundation layer of large, rounded stones capped with a deposit of silty gravel. The squared stones that comprise the floor were set into the silty gravel, and this uneven surface was levelled by the addition of a compacted layer of domestic or industrial debris. An upper deposit of black silt is likely to date to the period when the castle was abandoned.

In more modern times, two layers of sand were deposited onto the black silt, and it is possible that the drainage channel in the south wall of the basement was filled in at this time. The existing floor of flagstones and cobbles is much more recent than was initially thought, as modern plastics and nylon rope fragments were found below the cobblestones at the south of the basement. It is likely that the flagstones were laid down before the cobbles, with the latter being found in patches that suggest they are repairs to the floor rather than an integral part of it.

#### 8.2 *Great Hall*

The test pits in the Great Hall showed that the gaps at the north and south walls between the walls and the barrel-vaulted ceiling of the basement were infilled using gravel, broken masonry blocks and rounded stones. The surface was levelled using what appears to be raked-out material and domestic debris, and a fairly thick orange/brown clay floor was laid down on top. No other floor surface was found in the Great Hall, although it is possible that flagstones or wood comprised the actual walking surface. Thin, fragmentary pieces of wood were found in the existing floor deposit, but there is no indication that they are associated with an earlier floor surface.

#### 8.3 *Interpretive Issues*

The findings in the castle basement trench raise some questions about the original level of the floor and the source for the flagstones. If, as the evaluation indicates, the floor level was previously about 0.45 m below the existing flagstone surface, has the floor level also been built up in the entrance-way, or were there steps down into the basement? The existing flagstone and cobble floor has clearly been laid or re-laid in modern times, as the presence of modern plastic and nylon indicates, but there is no record of this substantial work having taken place. As the flagstones are not part of the original basement floor, have they been brought from elsewhere, or has another floor of the castle been removed and re-laid in the basement?

## 9.0 Recommendations

Given that the original floor level in the castle basement is substantially lower than the existing floor, and that there is a high potential for the survival of datable archaeological artefacts in the medieval deposits, GUARD recommends that any work to remove the flagstones and cobbles in this part of the castle is carried out by qualified archaeologists, or is closely monitored by a qualified archaeologist.

Although no firm evidence of a floor level above the compacted clay was found in the Great Hall, it is possible that such evidence could remain below the present floor surface. GUARD, therefore, recommends that the removal of the existing floor surface in the Great Hall should be carried out by qualified archaeologists, or closely monitored by a qualified archaeologist.

The environmental samples taken from the floor and sub-floor levels in the basement and Great Hall will potentially contain botanical and archaeological remains that will help to date the various phases of work carried out. GUARD recommends that these samples be processed by flotation in order to retrieve any such evidence that they may contain.

## 10.0 Acknowledgements

The project was funded by the Friends of Portencross Castle and the Heritage Lottery Fund. The evaluation was managed for GUARD by Beverley Ballin Smith. Technical assistance was provided by Aileen Maule and John Kiely and administrative assistance by Jen Cochrane. The director was assisted in the field by Tom Horne. Thanks are due to the Friends of Portencross Castle, and in particular to Ann McLachlan, for arranging access to the castle.

## 11.0 Bibliography

Caldwell, D H; Ewart, G & Triscott, J 1988 “Auldhill, Portencross” in *Archaeological Journal* 155 1988, 22-81

Francoz, C 2006 Portencross Castle; Data Structure Report. GUARD Unpublished Report 2282

James, H F 2002 Portencross Castle, North Ayrshire. GUARD Unpublished Report 989.2

### Online resources

Geology Digimap; [www.digimap.edina.ac.uk](http://www.digimap.edina.ac.uk)

National Monuments Record for Scotland; [www.rcahms.gov.uk](http://www.rcahms.gov.uk)

West of Scotland Archaeology Service online SMR; [www.wosas.net](http://www.wosas.net)

## 12.0 Appendices

### 12.1 *List of Contexts*

Area B = Basement

Area GH = Great Hall

<i>Area</i>	<i>Context</i>	<i>Description</i>	<i>Interpretation/Relationships</i>
B	001	Flagstones	Existing floor
B	002	Cobble stones	Existing floor
B	003	Debris between and above existing floor	Accumulation of silt and sand
B	004	Debris from use by fishermen	Modern floor deposit
B	005	Worked stones	Internal partitioning features
GH	006	Compacted light brown sandy silt	Existing floor deposit
GH	007	Orange clay deposit	Earlier floor
GH	008	Dark brown/black sandy silt	Probable levelling layer
GH	009	Light brown/yellow gravel	Infill above barrel-vaulted ceiling
GH	010	Stone deposit at north of Great Hall	Infill above barrel-vaulted ceiling
GH	011	Stone deposit at south of Great Hall	Infill above barrel-vaulted ceiling
GH	012	Red/brown silt	Possible levelling layer
B	013	Coarse yellow sand below cobbles (002)	Bedding-in layer
B	014	Fine yellow sand below flagstones (001)	Bedding-in layer
B	015	Heavily compacted black/dark brown mixed deposit	Probable modern deposit
B	016	Dark brown/black silt	Possible abandonment deposit
B	017	Same as (016)	Void
B	018	Heavily compacted orange/brown clay	Possible base of drain
B	019	Same as (016)	Void
B	020	Same as (016)	Void
B	021	Same as (016)	Void
B	022	Orange sandy silt	Possible levelling deposit
B	023	Same as (016)	Void
B	024	White/light grey burnt lime and ash	Possible industrial debris
B	025	Unbonded stones	Stone floor
B	026	Mid brown gravel and pebbles	Original levelling layer above bedrock and large stones

### 12.2 *List of Finds*

<i>Area</i>	<i>Find No.</i>	<i>Context</i>	<i>No. of Pieces</i>	<i>Material</i>	<i>Description</i>
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		No.			
GH	1	006	1	Metal	Copper nail
GH	2	006	1	Wood	Thin piece of wood
GH	3	009	1	Lithic	Possible worked lithic
B	4	017	1	Metal	Fe. Band
B	5	013	Many	Plastic	Nylon rope & plastic bag fragments
B	6	017	1	Glass	Clear sherd
B	7	016	1	Ceramic	Modern white glazed body piece
B	8	016	1	Ceramic	Greenglaze rim

### 12.3 List of Samples

Area	Sample No.	Context No.	Size	Reason for Sampling					Application
				Pot	Bone	Lithics	Botanics	Other	
GH	001	006	101	x		x	x	CV	Existing floor. Test Pit 1
GH	002	006	101	x		x	x	CV	Existing floor. Test Pit 2
GH	003	007	101	x		x	x	CV	Clay floor. Test Pit 1
GH	004	008	101	x		x	x	CV	Black deposit. Test Pit 1
B	005	013	101	x		x	x	CV	Coarse sand below cobbles
B	006	015	101	x		x	x	CV	Possible floor deposit
B	007	003	101	x		x	x	CV	
B	008	016	101	x		x	x	CV	Possible floor deposit
B	009	017	101	x		x	x	CV	Same as (016)
B	010	018	101	x		x	x	CV	Clay deposit
B	011	019	101	x		x	x	CV	Same as (016)
B	012	020	101	x		x	x	CV	Same as (016)
B	013	021	101	x		x	x	CV	Same as (016)
B	014	022	101	x		x	x	CV	Orange silt deposit
B	015	023	101	x		x	x	CV	Same as (016)
B	016	025	81	x		x	x	CV	Silt deposit, related to floor (026)
B	017	024	101	x		x	x	CV	Lime or shell layer

### 12.4 List of Drawings

<i>Area</i>	<i>Drawing No.</i>	<i>Sheet No.</i>	<i>Subject</i>	<i>Contexts</i>	<i>Scale</i>
B	1	1	Floor plan of castle basement	001-005	1:20
GH	2	2	Floor plan of Great Hall	006	1:20
GH	3	3	Post-excavation plan of Test Pit 2	009	1:10
GH	3	4	North-east facing section of Test Pit 2	006-009	1:10
GH	3	5	Post-excavation plan of Test Pit 1	010	1:10
GH	3	6	South-west facing section of Test Pit 1	006-008, 010	1:10
B	3	7	South-east facing section of trench; south and centre	002, 013-016, 018, 024, 026	1:10
B	3	8	Post-excavation plan of trench; south and centre	001-003, 005	1:20
B	4	9	South-east facing section of trench; north	001, 014, 016, 025, 026	1:10
B	4	10	Post-excavation plan of trench; north	001,004,026	1:20

### 12.5 *List of Photographs*

#### Digital Photographs

<i>Area</i>	<i>Frame</i>	<i>Context No.</i>	<i>Subject</i>	<i>Taken from</i>
B	1	-	Items removed from basement floor prior to cleaning	S
B	2	-	Pre-excavation view of south-east corner	W
B	3	-	Pre-excavation view of south-west corner	E
B	4	-	Pre-excavation view of north-west corner	E
GH	5	-	Pre-excavation view of south of Great Hall	N
GH	6	-	Pre-excavation view of north of Great Hall	S
GH	7	-	South window of Great Hall	N
GH	8	-	North window of Great Hall	S
GH	9	-	General view	E
GH	10	-	General view	E
B	11	001	Flagstones after cleaning	S
B	12	001	Flagstones after cleaning	W
B	13	001	Flagstones after cleaning	E
B	14	001	Flagstones after cleaning	E
B	15	002	Cobbled area after cleaning	N
B	16	004	Fishermen's debris after cleaning	E
B	17	004	Fishermen's debris after cleaning	E
GH	18	006,007	Orange clay floor deposit in Test Pit 2	N
GH	19	008	Possible floor deposit in Test Pit 1	SW
GH	20	012	Mid excavation view of Test Pit 1	SW
GH	21	012	Mid excavation view of Test Pit 1	SW

GH	22	009	Post-excavation view of Test Pit 2	SE
GH	23	006-009	North-east facing section of Test Pit 2	NE
GH	24	006-009	South-east facing section of Test Pit 2	SE
GH	25	006-009	South-west facing section of Test Pit 2	SW
GH	26	006-009	North-west facing section of Test Pit 2	NW
GH	27	010	Post-excavation view of Test Pit 1	SW
GH	28	006-010	South-west facing section of Test Pit 1	SW
GH	29	006-010	North-east facing section of Test Pit 1	NE
GH	30	006-010	North-west facing section of Test Pit 1	NW
GH	31	006-010	South-east facing section of Test Pit 1	SE
B	32	002, 013-016	South-east facing section of trench, south end	SE
B	33	002, 013-016	South-east facing section of trench, south end	
B	34	002, 013-016	South-east facing section of trench, south end	
B	35	002,016- 016, 018	South-east facing section of trench, south end	
B	36	002, 013-016	South-east facing section of trench, south end	
B	37	002, 013-016	Post-excavation view of centre of trench	SW
B	38	002, 013-016	Post-excavation view of south end of trench	NE
B	39	002,013 - 026	North-west facing section of trench, south end	NW
B	40	002,013 - 026	North-west facing section of trench, south end	
B	41	002,013 - 026	North-west facing section of trench, south end	
B	42	002,013 - 026	North-west facing section of trench, south end	
B	43	002,013 - 026	North-west facing section of trench, south end	
B	44	017-023, 025	North-east facing section of trench, north end	NE
B	45	017-023, 025	South-east facing section of trench, north end	SE
B	46	026	Post-excavation view of trench, north end	N
B	47	026	Post-excavation view of trench, north end	S
B	48	001	Culvert after cleaning	E
GH	49	-	Wall footing in north-west corner	E
GH	50	-	Wall footing in north-west corner	E
GH	51	-	Wall footing in north-west corner	S
B	52	001	Back-filled trench, north end	S
B	53	001	Back-filled trench, south end	N