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Archaeological Investigations into the Deterioration of Stonework within the Dining Room at Anglesey Abbey House, Cambridgeshire

Archaeological Excavation

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Report Date: January 2010



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Summary

In early January 2010, Oxford Archaeology East was commissioned by the National Trust to carry out an investigation within the dining room at Anglesey Abbey house, in the parish of Lode, Cambridgeshire.

Anglesey Abbey house is converted from the remains of an Augustinian Priory and the present dining room is in the medieval undercroft. The vaulting for this undercroft is supported on two pillars. In recent years some spalling of these pillars has been observed which may be caused by rising damp. The purpose of this archaeological investigation was to help identify the cause of spalling by excavating on one side of the foundations of one of the pillars, below the present modern floor and specifically to locate a possible raised water table.

Excavation was possible to a depth of 0.60m as space was restricted once the original 13th century foundations were encountered and exposed. Subsequently, a hand operated auger was used to bore into the soils for a further 40cm. The water table was not encountered and no other evidence for the cause of the spalling was identified within this investigation.



1 INTRODUCTION

1.1 Location and scope of work

- 1.1.1 An archaeological excavation was conducted within the dining room at Anglesey Abbey, Cambridgeshire. Anglesey Abbey is located within the parish of Lode, less than half a mile from the village of Lode itself in East Cambridgeshire. It is set back from the B1102, Quy Road and accessed via a private road (Figure 1).
- 1.1.2 This archaeological excavation was undertaken in accordance with a Brief issued by Angus Wainwright of the National Trust, supplemented by a Specification (Mortimer, 2009) prepared by OA East (formerly Cambridgeshire County Council's CAM ARC).
- 1.1.3 The work was designed to assist in helping to identify the cause of spalling of pillars within the dining room which may be caused by rising damp. The aim was to investigate the foundations of one of the pillars below the present modern floor, specifically to locate a possible raised water table.
- 1.1.4 The site archive is currently held by OA East and will be deposited with the National Trust in due course.

1.2 Geology and topography

- 1.2.1 The local geology consists of Lower Chalk which lies beneath the current sea level (IGS Sheet188). The site is located on the edge of Quy Water, a tributary of the River Cam, at around 5m OD.
- 1.2.2 The natural water table lies just above where the Middle Chalk (upon which the site is located), meets the underlying Gault Clay. The Middle Chalk itself is up to 70m at its greatest depth and the site lies less than half a mile from where the Gault clay rises in Bottisham fen to the west.

1.3 Historical background

Anglesey Abbey House

- 1.3.1 The Augustinian priory at Anglesey was built in 1236 with the papal chaplain, Master Lawrence of St Nicholas, selling 600 sheep to pay for construction works. The priory was dissolved by Henry VIII in 1536, ending over 400 years of religious life on the site (www.nationaltrust.org.uk).
- 1.3.2 In the years that followed the dissolution of the priory, the site was owned by the Parker family with the Abbey turned into a country home. In 1848, the Abbey was acquired by the Reverend John Hailstone and it may have been him that christened the house 'Anglesey Abbey'. His son, a local historian, wrote what is still the most detailed history of the house in 1873. It was during this time that much of the medieval history of the site was revealed. In 1926, Anglesey Abbey was bought by the first Lord Fairhaven and his brother, Henry Broughton (www.nationaltrust.org.uk).
- 1.3.3 The house itself is Grade I listed (LB number 49311). The listing description is as follows :



"Country house incorporating part of a priory of Augustinian Canons. C13 origin. converted to a house C17, enlarged C19 and C20 (part by Sir A Richardson). Limestone and clunch with steeply pitched, tiled roof. Two main ranges forming a Tplan. The range to the North was originally a first floor hall with an undercroft, and detached from the South range. It was probably the Abbots Lodging. The original building has been added to on the North and South. The gable end walls are visible internally. At the left hand of the East wall the surface has been cut back indicating an extension or range on the East side. The walls are of coursed clunch with some Barnack limestone particularly in the lower courses. On the East wall there are two, two-stage buttresses. The upper stage has been rebuilt but the lower stage of clunch and Barnack on a splayed sill is C13. The upper part of the walls has been rebuilt and the steeply pitched, tiled roof is C19 or C20. The West wall is obscured by later building. The lodgings were of three bay plan, and of two storeys and an undercroft. The original entry was on the West side at the North end. The present fenestration is C17 or dates from the restoration in C19 or C20 but there is a two centred arch and the springing for a second arch at ground floor which are C13. The South range is also C13 in origin and of clunch with some Barnack but its original use is uncertain. In the early C17 it was converted to domestic use probably by the Fowkes family, and the present external appearance is generally of a house of that period. The roof is steeply pitched with later end parapets, but early C17 end stacks of clunch and reused Barnack limestone. The shafts set diagonally on the base are all later. Two storeys and attics. Five C20 gabled eaves dormers in style of and replacing five similar dormers. The main elevation is in five bays, each with a five light cross frame casement of clunch or restored in limestone, except for the centre bay which has an early C17 two storey porch. The doorway is in a round headed and double wave moulded arch on a high sill with a renewed, jewelled keyblock at the centre. Above is a reset medieval carving of stone and a similar casement window. Surmounting the porch is a pediment of "C" and "S" scrolls on either side of a late C18 Coadestone sculpture of St George and the Dragon. To the right hand is a two storey canted oriel window with cross-frame casements of clunch. In 1955, a gallery was added to the end of the Abbots lodging or North range. This was designed by Sir Albert Richardson. The interior of the North range or former Abbots lodging contains two features of importance. The first is the undercroft which is in three bays and two aisles with quadripartite rib vaulting with chamfered arches springing from octagonal columns with moulded capitals and hold water bases. At the walls the arches spring from triple lobed corbels. Much of the stonework, including the marble columns, has been renewed. The second feature is on what was formerly the South West external wall. It is part of the raking wall arches to what was the staircase entry to the first floor hall. Only four and a half two centred arches of triple hollow and roll moulding with a continuous roll moulded label survive. The arches spring from corbels which have been badly mutilated. The South range contains little internally even from the 1600 alterations. A doorway to the South porch has a reversed arch with spandrels carved with "PW" and "R" for William Reche, prior from 1515 and probably reset. The fireplaces and surrounds are mostly early C17 and inserted during Lord Fairhaven's ownership. The roof is of c1600 and of staggered, butt purlin construction. The priory was founded in early C13 on the site of a c12 hospital of St Mary. Much of the priory was dismantled after the dissolution but one range was converted to a house in early C17. The house was acquired by Lord Fairhaven in 1926 who added some of the buildings on the West and the Gallery on the North. R.C.H.M. (North East Cambs.), p74, mon (3) Pevsner: Buildings of England, p291"



The Dining Room and Columns (from National Trust guide)

- 1.3.4 The dining room is the only complete area surviving from the original Augustinian Priory and is thought to have been built around 1236. The room would have served as the monastic 'calefactorium' or 'warming room' and the only room in the Priory where they would have had a fireplace. The vaulted ceiling is supported by two columns of Alwalton marble with bases and capitals of Barnack stone (plate 1).
- 1.3.5 The elaborate fireplace in this room was added in the 1930s, replacing a much smaller one, when Lord Fairhaven converted the room into a dining room. When he purchased the house this room was the main entrance hall, the door was where the end window is now.

1.4 Acknowledgements

1.4.1 The author would like to thank the National Trust for commissioning the work and particular thanks to Chris Calnan and the house staff of Anglesey Abbey house. The author carried out all on-site excavation and photography. The project was managed by Richard Mortimer and illustrations were undertaken by Louise Bush.



2 AIMS AND METHODOLOGY

2.1 Aims

- 2.1.1 The objective of this excavation was to determine as far as reasonably possible the cause of spalling in the lower part of the pillars in the dining room by investigating the foundations of one of the pillars below the present modern floor and specifically to locate a possible raised water table.
- 2.1.2 A secondary purpose was to record and interpret any original medieval structures such as foundations and floor levels which may be encountered.

2.2 Methodology

- 2.2.1 The brief stated that an area was to be excavated archaeologically to a maximum depth of one metre, however excavation may be terminated at a shallower depth if a) significant in-situ archaeological structures were found, b) the water table is struck.
- 2.2.2 The investigation was in the dining room and concentrated on the west side of the south pillar (Figure 2). An area of tiles measuring approximately 1.15m x 0.75m was raised in advance of the work by a building contractor (plate 2).
- 2.2.3 All archaeological features and deposits were recorded using OA East's *pro-forma* sheets. Trench locations, plans and sections were recorded at appropriate scales and digital photographs were taken of all relevant features and deposits.
- 2.2.4 Material was removed from the dining room using a wheelbarrow, taking spoil out of the house through the service passage to the west of the dining room. Ramps and protection were constructed in advance of the project. A dump location was also provided outside the house.
- 2.2.5 One 6 litre environmental sample was collected to investigate the possible survival of micro and macro botanical remains (see Appendix A).
- 2.2.6 Site conditions indoors were favourable, however limited lighting made taking photographs difficult.



3 Results

3.1 Context Descriptions

The results of the excavation are presented below. Each deposit is described in chronological order, with the earliest context first. An illustrated plan and section are shown on Figure 3 and detailed photograph of the excavated layers can be seen in plate 3.

Natural Layers

Layer 15 was a firm, light creamy white and yellow marl deposit. Its full depth was not established and it represents the undisturbed geology at this location.

Layer 14 was a fairly firm, light brown silty marl measuring approximately 0.10cm in thickness. This layer was recorded from the auger results. This layer also represents undisturbed geology

Layer 13 was a soft, sterile mid to dark brown deposit which contained pockets of swirled natural silts, indicating this deposit may have been waterlogged of a result of flooding. This layer measured 0.28m in thickness.

Foundation / Construction Levels

Layer 12 comprised large clumps / deposits of firm, white natural chalk. Two pockets of this chalk were recorded within the excavation area and measured between 0.03m and 0.10m thick. No dating evidence was retrieved.

Layer 11 was a soft, orangey brown silty subsoil deposit containing patches of a darker brown silt. This layer had a maximum recorded thickness of 0.15m and did not contain any dating evidence.

Layer 10 was a firm, compacted layer of white chalk. This layer had a maximum recorded thickness of 0.06m and did not contain any obvious dating evidence or other artefacts or ecofacts.

Make-Up Layers

Layer 09 was a moderately compact, soft, mid brown clayey silt with frequent inclusions of clunch and occasional charcoal. This layer had a maximum recorded thickness of 0.15m and did not contain any dating evidence.

Layer 08 was a mid-dark brown layer of soft silt with occasional charcoal and chalk flecks. This deposit had a maximum recorded thickness of 0.03m and no artefacts were retrieved.

Layer 07 was a firm, compacted deposit of redeposited natural white chalk. This layer had a maximum recorded thickness of 0.08m and did not contain any obvious dating evidence or other artefacts or ecofacts.

Layer 06 was a mid-dark brown deposit of soft silt with occasional charcoal and chalk flecks. This deposit had a maximum recorded thickness of 0.02m and no artefacts were retrieved.

Layer 05 was a light, creamy coloured deposit of firm, compacted, crushed mortar, chalk and flint with a crumbly, sandy texture. This deposit had a maximum recorded thickness of 0.07m, no artefacts were retrieved.

Floor Levels

Layer 04 was a compacted, very dark brown layer with frequent charcoal inclusions and occasional chalk flecks with a maximum thickness of 0.09m. A single 5 litre soil sample was taken from this context for environmental analysis (Appendix A). This sample revealed evidence of numerous fish bones including eel bones and fish scale and a sheep/goat humerus (Appendix B).



Layer 03 was a thin, shallow lens of red fired clay / ceramic building material. This layer measured approximately 0.015m in thickness and did not contain any dating evidence or other artefacts.

Layer 02 was a light, orangey brown sandy layer measuring approximately 0.03m in thickness. No dating evidence was retrieved.

Layer 01 was a very pale brown sandy and mortar deposit. This layer measured approximately 0.02m thick and represents a foundation layer for the floor tiles directly above.

Foundations (16 and 17)

The foundations of the pillar (16), were not fully excavated for safety reasons, however excavation revealed they measured approximately 0.4m in thickness and comprised a lower layer of crushed limestone with no obvious bond other than a loose crumbly sand. Above this layer were clunch blocks each measuring approximately 0.20m in length. Beneath the column itself was a large padstone (17). This stone appeared to be the same limestone as the column above, however without the same brushed and polished finish as seen at the base. It is the presence of this large padstone, which is likely to be in excess of the size of the base of the column, which would indicate there has not been any repairs or alterations to the area around the foundations. The foundations were set upon layer 10, a firm chalk deposit and sealed by context 04 and 05.

3.2 Summary of all artefactual evidence.

3.2.1 There were no artefacts retrieved from any of the excavated deposits within this investigation.

3.3 Environmental Summary

3.3.1 A single 6 litre sample was taken from layer 04 and processed for the recovery of plant remains and artefact retrieval. The sample was found to be devoid of plant remains other than charcoal but it did contain numerous fish bones including eel bones and fish scale as well as a sheep / goat humerus (Appendices A and B).



4 DISCUSSION AND CONCLUSIONS

4.1 Discussion

- 4.1.1 The excavations at Anglesey Abbey have shown that the foundations were constructed upon a layer of crushed stone with large cut (?) blocks of local clunch (plate 4). The materials used in the construction of the abbey have been locally sourced (Barnack stone, Alwaton marble) and the nearby village of Burwell, less than 4.5 miles to the north east has a number of documented quarries and produced clunch right up to the end of the twentieth century. The foundations for the pillar appear to go no deeper than 0.40m below the current floor surface. The depth/location of layer 10 (a compacted, firm redeposited natural chalk) shown within the section (Figure 3) corresponds with the base of the foundations and represents the level of construction of the building. Beneath this level is a dark orangey brown layer (11) which is likely to have been an imported subsoil used to fill a much larger area into which the abbey was built. It is evident from standing outside of the building that the ground level inside is at least 0.50m lower, suggesting a "cut" was made for the building, possibly as the soils were unsuitable to build directly onto. Excavation ceased at the level of truncated natural geology (13) which was further recorded by auger survey (14 and 15) to a depth of 1.0m. Layer 13 was a very silty soft, deposit and had been truncated by the construction cut for the building.
- 4.1.2 The various thin bands and layers above the construction level (10) are likely to represent deposits which built up during the construction of the rest of the abbey; layers 09 up to 05 (Figure 3) show this sequence of build up and levelling.
- 4.1.3 The dark layer (04) which was recorded beneath the foundations of the present 19th century floor (01 and 02) contained fish scales and bones from eels, fish and sheep. This layer appears to represent debris and food waste which has built up into a deposit of more than 0.09m thick. It is known that before the purchase of the house in 1848 by Reverend John Hailstone, the occupants used this part of the house for various agricultural functions including the keeping of chickens (Angus Wainwright and house staff *pers. comm.*). This layer is most likely to represent the occupation of animals / chickens and their waste. Any previous or original tile or stone floor surface was likely to have been removed prior to this and perhaps sold or re-used elsewhere in the house.
- 4.1.4 The current floor was then laid sometime after this in the late 19th century, presumably by Reverend Hailstone. Lord Fairhaven then took over the house in 1926 (www.nationaltrust.org.uk). It is well documented that during his occupation of the house, Lord Fairhaven undertook some dramatic renovations which included changing the location of the main entrance to the house and other internal alterations. Images of the replacing of the fireplace in the dining room before, during and after the work can be seen in Figure 4.

4.2 Conclusions

- 4.2.1 This investigation has revealed the original foundations of the calefactory from the thirteenth century abbey. It has shown the foundations to be 0.40m below the current room floor level and constructed using local clunch and supported by a large padstone of Barnack limestone.
- 4.2.2 Although this excavation did not reveal the source of water which may be causing damp within the column above, it is not conclusive that it is not present at a higher level



elsewhere within the room. What is certain however, is that the water table at the time of the investigation was not at a high enough level to cause the moisture problems currently being encountered and there was no archaeological evidence in this location of other historical activity such as drainage systems which may be contributing to the problem.

4.3 Significance

4.3.1 The aim of this investigation was primarily to look for evidence of what may have been causing the spalling in the columns within the room. Although the source was not located within the excavated area, this investigation successfully identified and exposed the foundations of the original part of the abbey building and provided an opportunity to record and examine early medieval construction techniques.



APPENDIX A. ENVIRONMENTAL REPORTS

By Rachel Fosberry, HNC AIFA

A single 6 litre sample was taken from floor layer 4 and processed for the recovery of plant remains and artefact retrieval. The sample was found to be devoid of plant remains other than charcoal but it did contain numerous fish bones including eel bones and fish scale.

APPENDIX B. FAUNAL REMAINS

By Chris Faine, MA, MSc AIFA

Sixteen fragments were recovered from layer 04 at Anglesey Abbey, with 4 elements identifiable to species (25% of the total sample). These consisted of a portion of sheep/goat humerus, two eel vertebrae and a portion of supercleithrale, most likely perch.



APPENDIX C. BIBLIOGRAPHY

Institute of Sciences (IGS)	Geological	1978	Cambridge:Sheet 188 Solid and Drift Edition 1:50 000 Series
Mortimer, R.		2009	Specification for Archaeological Excavation : Anglesey Abbey, Lode
Wainwright, A.		2009	Brief Archaeological Investigations at Anglesey Abbey, Lode, Cambridgeshire

Websites Consulted

www.lbonline.english-heritage.org.uk

www.nationaltrust.org.uk



APPENDIX D. OASIS REPORT FORM

All fields are required unless they are not applicable.

Project Details

OASIS Number	Oxfordar3-70780			
Project Name	Anglesey Abbey,	Lode, Cambridgeshire		
Project Dates (fiel	dwork) Start	12-01-2010	Finish	13-01-2010
Previous Work (by	/ OA East)	No	Future	Work

Project Reference Codes

Site Code	LODANA10	Planning App. No.	n/a
HER No.	ECB 3331	Related HER/OASIS No.	N/A

Type of Project/Techniques Used

Prompt

Conservation/restoration

Please select all techniques used:

Field Observation (periodic visits)	X Part Excavation	Salvage Record
Full Excavation (100%)	Part Survey	Systematic Field Walking
Full Survey	Recorded Observation	Systematic Metal Detector Survey
Geophysical Survey	Remote Operated Vehicle Survey	Test Pit Survey
Open-Area Excavation	Salvage Excavation	Watching Brief

Monument Types/Significant Finds & Their Periods

List feature types using the NMR Monument Type Thesaurus and significant finds using the MDA Object type Thesaurus together with their respective periods. If no features/finds were found, please state "none".

Monument	Period	Object	Period	
Abbey Calefactory	Medieval 1066 to 1540	None	Select period	
	Select period		Select period	
	Select period		Select period	

Project Location

County	Cambridgeshire	Site Address (including postcode if possible)
District	East Cambridgeshire	Anglesey Abbey House Quy Road, Lode Cambridgeshire, CB25 9EJ
Parish	Lode	
HER	Cambridgeshire	
Study Area	2msq	National Grid Reference TL533622



Project Originators

Organisation	OA EAST
Project Brief Originator	The National Trust
Project Design Originator	Richard Mortimer
Project Manager	Richard Mortimer
Supervisor	Taleyna Fletcher

Project Archives

Physical Archive	Digital Archive	Paper Archive
National Trust Stores	OA East Offices	National Trust Stores
LODANA10	LODANA10	LODANA10

Archive Contents/Media

	Physical Contents	Digital Contents	Paper Contents
Animal Bones			
Ceramics			
Environmental	\mathbf{X}	\mathbf{X}	\times
Glass			
Human Bones			
Industrial			
Leather			
Metal			
Stratigraphic		\times	\times
Survey			\times
Textiles			
Wood			
Worked Bone			
Worked Stone/Lithic			
None			
Other			

Notes:



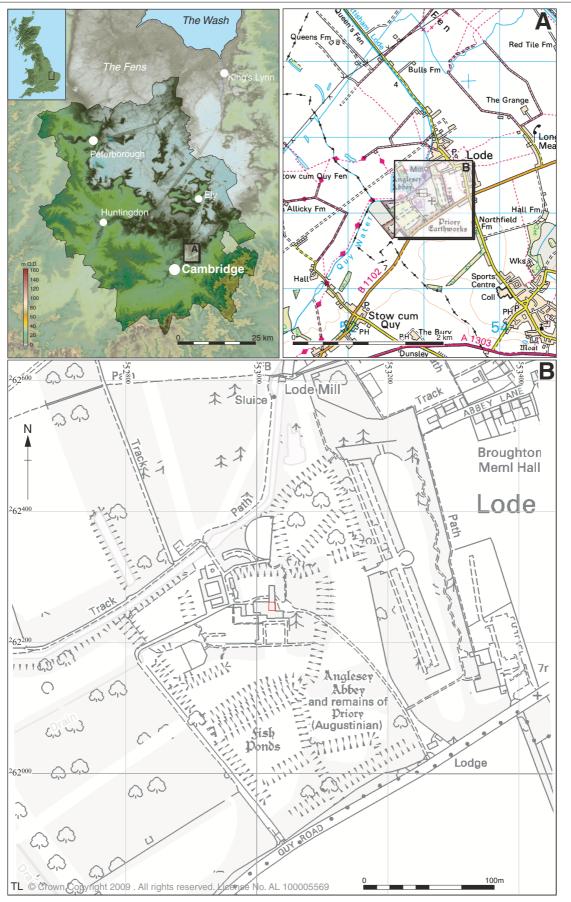


Figure 1: Site location map with investigation are (red)



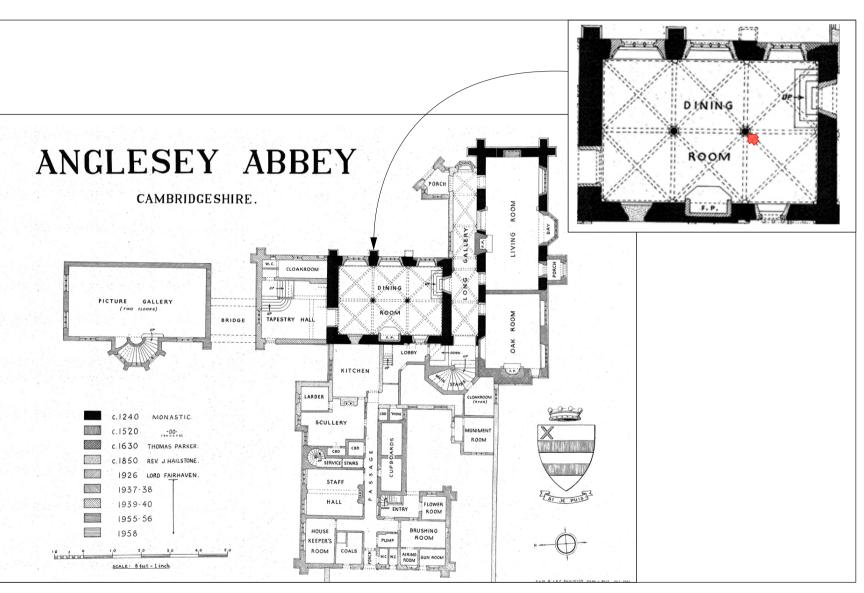


Figure 2: Ground floor plan of Anglesey Abbey showing location of excavation area (red)(reproduced with kind permission from the National Trust)



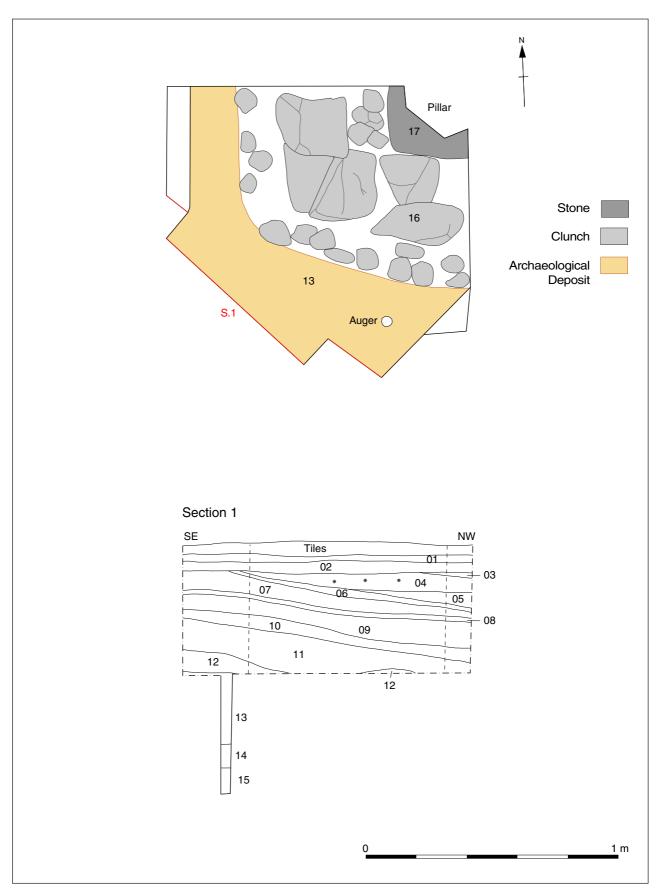


Figure 3: Excavation plan showing foundations and section

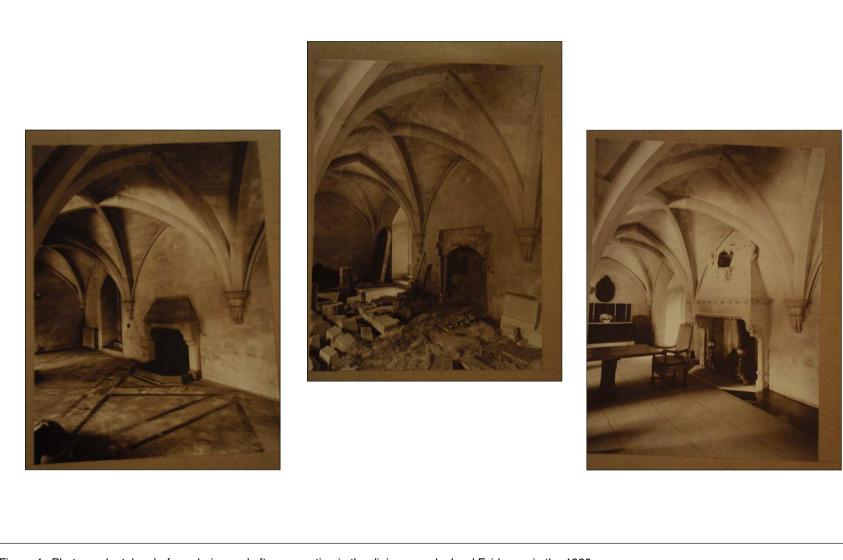


Figure 4: Photographs taken before, during and after renovation in the dining room by Lord Fairhaven in the 1930s (reproduced with kind permission from the National Trust)





Plate 1: Column under investigation within dining room



Plate 2: Investigation area on west side of the south pillar





Plate 3: Detail of excavated layers



Plate 4: Excavated foundations



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