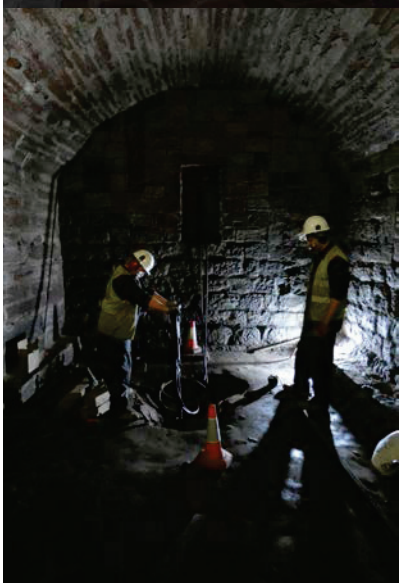
CARLISLE CASTLE KEEP, CARLISLE, CUMBRIA

Archaeological Watching Brief



Client: English Heritage

NGR: NY 39748 56224

May 2021

The Site	
Site Name	Carlisle Castle Keep, Carlisle
County	Cumbria
NGR	NY 39748 56224
Scheduled Monument No.	1014579
Listed Building Name, Grade, and No.	Inner Bailey Keep, Grade I, No. 1208315

Client	
Client Name	English Heritage
Client's architect/agent	n/a

Planning	
Pre-planning?	n/a
Planning Application No.	n/a
Plans (e.g. conversion, extension, demolition)	Investigation of area of damp inside dungeon/storeroom of keep
Condition number	n/a
Local Planning Authority	Carlisle City Council/Historic England
Scheduled Monument Consent Ref.	S00241213
Planning Archaeologist	Andrew Davison, Historic England/JeremyParsons, Cumbria County Council
Groundworks subject to watching brief	Extraction of core samples from dungeon/storeroom floor

Archiving	
Relevant Record Office(s)/Archive Centre(s)	Carlisle/English Heritage
Relevant HER	Cumbria
Relevant museum	Tullie House Museum and Art Gallery/English Heritage

Staffing	
Desk-based assessment	Dan Elsworth
Watching brief	Tom Mace
Report writing	Dan Elsworth Tom Mace
Report editing	Jo Dawson
Illustrations	Tom Mace
Date(s) site work carried out	4th May 2021

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Non-Technical Summary

An archaeological watching brief was conducted during the course of core drilling in the dungeon / storeroom of the keep at Carlisle Castle, Cumbria. The floor of the room at the south corner of the keep had collapsed slightly in one spot as a result of the weight of water pooling in a depression close to a vent slot in the wall ultimately breaking the 'crust' of the floor and causing it to settle into a shallow void below. The site is located within the Scheduled Monument area for the castle, and the archaeological work was carried out on 4th May 2021.

Carlisle Castle is located on the site of a Roman fort established in the 1st century AD, which became the focus for a major Roman city and went on to be the focus of an important early medieval and medieval settlement on the River Eden and the border with Scotland. A castle was first established on the site at the end of the 11th century but the earliest surviving fabric is largely 12th century and later. It remained of strategic importance into the 16th century but as conflict on the border decreased by the end of the 18th century it gradually became less significant and poorly maintained. During the 19th and into the 20th century it became an important garrison and, although not used for defence, was at least maintained.

Each of the core samples revealed that a reddish-brown clay continued without any voids to a depth of around 3m below the surface. Below that was a softer dark brown silt deposit. No finds or archaeological features were observed; however, information from the core samples themselves will inform decisions about how best to repair the floor and reopen the space to the public.

Acknowledgements

Greenlane Archaeology would like to thank English Heritage for commissioning the project. Additional thanks are due to Juliet Fellows-Smith and John Bonner, Property Manager and Site Manager at Carlisle Castle respectively, and staff from Geoinvestigate Ltd (Jason, Tristan and Tom) for their assistance on site.

1. Introduction

1.1 Circumstances of the Project

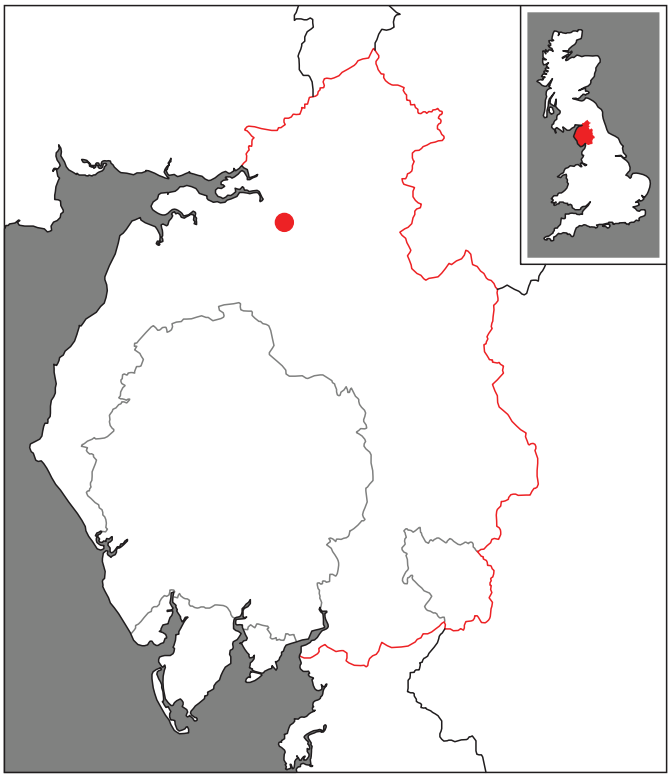
1.1.1 The circumstances of the project are set out in the tables on the inside cover of this report.

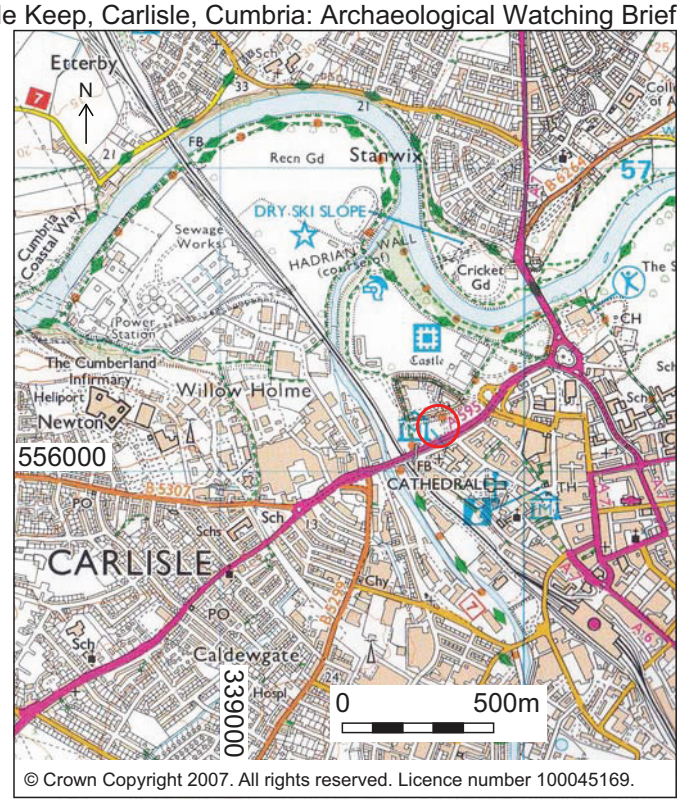
1.2 Location, Geology, and Topography

1.2.1 Carlisle is located towards the northern edge of the Cumberland Plain, *c*15km south of the Scottish border (Figure 1). The castle is to the south side of the River Eden and east of the River Caldew, approximately 20m above sea level (*ibid*; Countryside Commission 1998, 65). The surrounding area is now urbanised.

1.2.2 Limestone, mudstone and sandstone deposits of the Jurassic and Triassic periods underlying the city (Moseley 1978, plate 1) are overlain by glacial drift deposits of boulder clay, glacial sands and gravels (McCarthy *et al* 1990, 3-4).

1.2.3 The watching brief took place inside the dungeon/storeroom on the lower ground floor to the south corner of the keep of Carlisle Castle, which is a Scheduled Monument (No. 1014579); the groundworks were carried out following the receipt of Scheduled Monument Consent (Ref. S00241213). The monument includes '*the upstanding and buried remains of Carlisle medieval tower keep castle, two lengths of Carlisle city wall, a 16th century battery, and the buried remains of much of the Roman fort*' (Historic England 2021a). The castle is enclosed by a curtain wall and accessed by a bridge across the outer ditch (or moat) on the south side. The inner bailey keep is a Grade I Listed Building (No. 1208315) and is early 12th century, with mid-16th and 19th century alterations (Historic England 2021b; see *Appendix 2*).





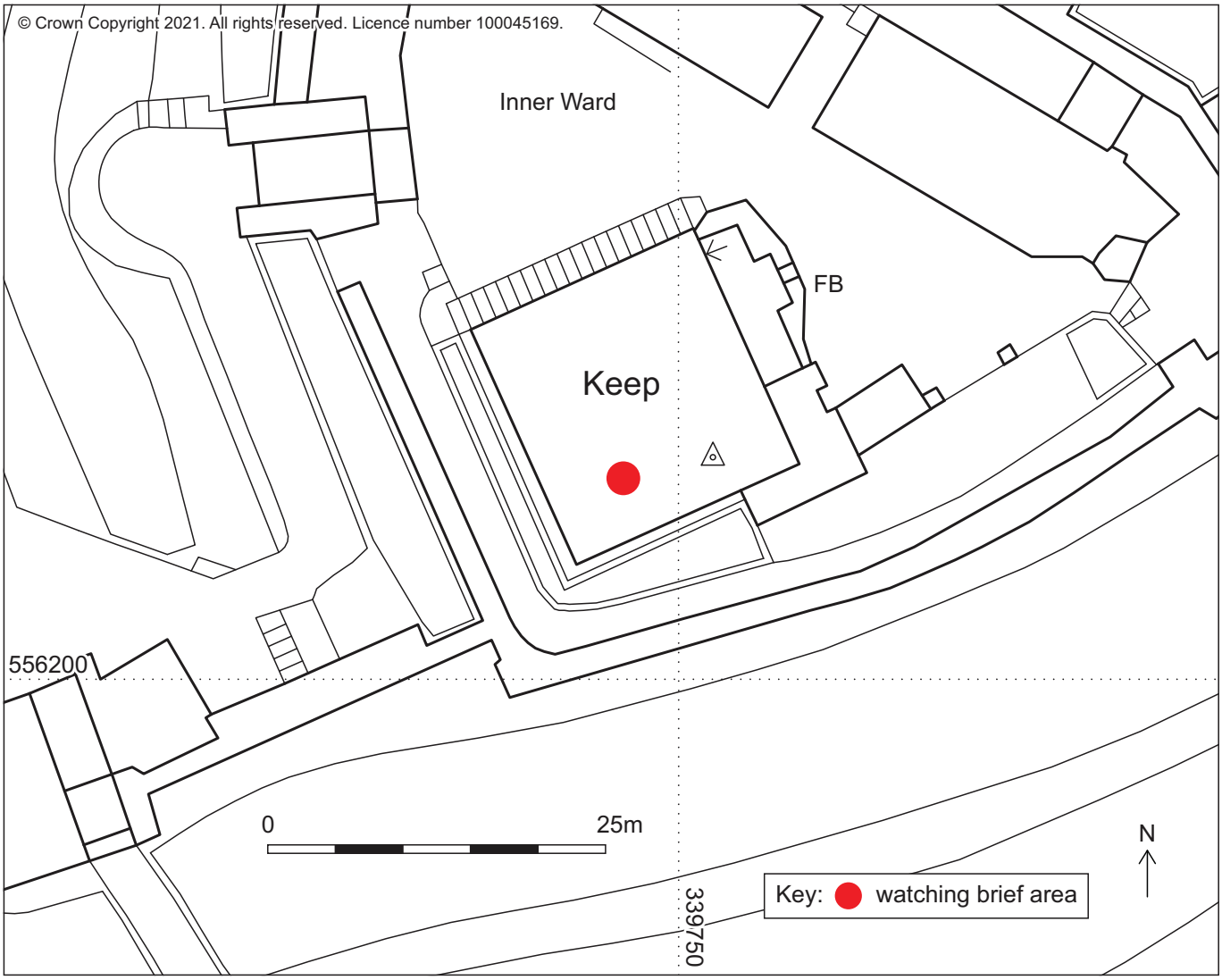


Figure 1: Site location

Client: English Heritage

2. Methodology

2.1 Desk-Based Assessment

2.1.1 A desk-based assessment was carried out in accordance with the guidelines of the Chartered Institute for Archaeologists (CIfA 2020b). This principally comprised an examination of published secondary sources in order to produce a historical and archaeological background to the site and provide some context for the results. A number of sources of information were used during the compilation of the desk-based assessment:

- ***Greenlane Archaeology***: Greenlane Archaeology's office library includes maps, local histories, and unpublished primary and secondary sources. These were consulted where relevant, in order to provide information about the history and archaeology of the site and the general area.

2.2 Archaeological Watching Brief

2.2.1 The watching brief monitored groundworks associated with the project set out in the tables on the inside cover of this report.

2.2.2 All aspects of the archaeological recording were carried out according to the standards and guidance of the Chartered Institute for Archaeologists (CIfA 2020a) and Greenlane Archaeology's own excavation manual (2007). The deposits encountered were recorded in the following manner:

- ***Written record***: descriptive records of all deposits were made using Greenlane Archaeology's *pro forma* record sheets. A detailed description of the contexts encountered is presented in *Appendix 1*;
- ***Photographs***: photographs in colour digital format (both 12 meg JPEG and RAW file format) were taken of the site as well as general working shots. A selection of the colour digital photographs is included in this report. A written record of all of the photographs was also made using Greenlane Archaeology's *pro forma* record sheets;
- ***Drawings***: drawings were produced on site as follows:
    i. a location plan was produced on site by hand-annotating a copy of an English Heritage plan of the ground floor of the Keep printed at a scale of approximately 1:200;
    ii. a plan of the watching brief area was drawn by hand on site at a scale of 1:20.

2.3 Environmental Samples

2.3.1 No environmental samples were taken as no appropriate deposits were encountered.

2.4 Finds

2.4.1 No finds were recovered during the course of the watching brief.

2.5 Archive

2.5.1 The archive of the project will be deposited with the relevant Record Office or Archive Centre, as detailed on the cover sheet of this report, together with a copy of the report. The archive has been compiled according to the standards and guidelines of the CIfA guidelines (CIfA 2020c). In addition, details will be submitted to the *Online Access to the Index of Archaeological Investigations* (OASIS) scheme. This is an internet-based project intended to improve the flow of information between contractors, local authority heritage managers and the general public. A copy of the report will be provided to the client and a digital copy of the report will be provided for the relevant Historic Environment Record, as detailed on the cover sheet of this report.

3. Historical and Archaeological Background

3.1 Introduction

3.1.1 The background to the site is intended to place the results of the watching brief in its local context. More specifically, information regarding the development and use of the site, where known, is also presented, which allows a more detailed understanding of the results of the watching brief.

3.2 Prehistoric Period (c11,000BC – 1st century AD)

3.2.1 While there is limited evidence for human activity in the county in the period immediately following the last Ice Age, this is typically found in the southernmost part on the north side of Morecambe Bay in the south of the county. Excavations of a small number of cave sites in this area have found the remains of animal species common at the time but now extinct in this country and artefacts of Late Upper Palaeolithic type (Young 2002). Human remains from one of these have also recently been dated to approximately 7,100 BC (Smith *et al* 2013). No remains of this date are known from the immediate area of the site, although a pair of barbed spearheads made from antler were found at Crosby-on-Eden (Hodgson 1895), which, although undated, may belong to the end of the Palaeolithic or early Mesolithic. The county was clearly more densely inhabited during the following period, the Mesolithic (*c*8,000 – 4,000 BC), as large numbers of artefacts of this date have been discovered during field-walking and eroding from sand dunes along the coast, but these are typically concentrated in the west coast area and on the uplands around the Eden valley (Cherry and Cherry 2002). More recently a particularly large assemblage has been recovered during excavations, directly on the edge of the River Eden, immediately outside Carlisle, as part of work carried out for the construction of the Carlisle Northern Development Route (Clark 2010; Brown 2021). In addition, field-walking has found additional scatters of some significance also in the Eden valley near Penrith (Clarke *et al* 2008). Coastal areas and river valleys are notably places where such material is frequently found in the wider region (Middleton *et al* 1995, 202; Hodgkinson *et al* 2000, 151-152; Hodgson and Brennand 2006, 26).

3.2.2 In the following period, the Neolithic (*c*4,000 – 2,500 BC), large scale monuments such as burial mounds and stone circles begin to appear in the region and the population became generally more settled, although there is still come continuity from the hunter gatherer lifestyle of the Mesolithic, as demonstrated by the work on the CNDR project. There are relatively few in the immediate area around Carlisle, although sites such as the possible cursus near Scotby (Webster and Newman 2007, 8), and the stone circle at Long Meg, which has seen recent new investigation (Frodsham 2021), probably only give a small insight into the extent of such activity at the time. One of the most recognisable tool types of this period, the polished stone axe, is found in large numbers across the county, having been manufactured at Langdale in the central Lake District and transported over a wide area (Hodgson and Brennand 2006, 45), with examples found during the CNDR excavations, and increasing work on the Neolithic is beginning to more fully demonstrate the extent of activity in the county as a whole (Evans *et al* 2021). During the Bronze Age (*c*2,500 – 600 BC), monuments, particularly those thought to be ceremonial in nature, become more common still. These perhaps include enigmatic features known as burnt mounds which have been recorded on the outskirts of Carlisle near Garlands Hospital to the east (LUAU 1996; Neighbour and Johnson 2005) and on the CNDR site to the west. At Garlands a considerable amount of Bronze Age pottery was also found in 1861 when erecting new hospital buildings, and this is thought to represent a Bronze Age cemetery. Hodgson lists 15 urns, but Spence says there were 13 cinerary urns of overhanging rim type, five burial urns of food vessel type, four incense cups, and one beaker (Hodgson 1956, 6-12; Spence 1940, 101-4). A flint implement was also found in one of the urns, which is now held at Tullie House Museum (*ibid*).

3.2.3 It is likely that settlement sites thought to belong to the Iron Age have their origins in the Bronze Age. Sites of this type are typically recorded as cropmarks revealed in aerial photographs in the rural area around Carlisle (Webster and Newman 2007, 7), although they are often undated and not understood in detail. In addition, there is likely to have been a considerable overlap between the end of the Iron Age and the beginning of the Romano-British period; it is evident that in this part of the country,

initially at least, the Roman invasion had a minimal impact on the native population in rural areas (Philpott 2006, 73-74).

3.3 Romano-British to Early Medieval Period (1st century AD – 11th century AD)

3.3.1 The site is located within the site of the Roman fort at Carlisle and immediately north of the Roman city, known as *Luguvalium*. The fort at Carlisle was first established in the autumn or winter of AD 72-73 (Zant 2009; Zant 2011, 35) but was soon altered, in AD 83-84 (Zant 2011, 36-37). It was abandoned for a time, before being rebuilt in the early 2nd century, *c*AD 105, but its character changed by the AD 120s, probably on account of the construction of Hadrian's Wall, which began in AD 122-123 (*op cit*, 42-43). This led to the construction of a new fort at Stanwix, but the fort at Carlisle continued and in the early 3rd century AD it was rebuilt in stone (*op cit*, 48). Both Carlisle and Stanwix continued to be occupied into the 4th century and beyond, along with an extensive civilian settlement at the former.

3.3.2 Evidence for post-Roman habitation is limited and inconclusive (*op cit*, 50-51); however, it is apparent that Carlisle remained an important place into the early medieval period, with an historical account of the 7th century famously describing the extant walls of the Roman town and a working fountain (Zant 2009, 15). Excavations within the fort have found evidence for a build up 'dark earth' in the post-Roman period and evidence for limited activity within this area, primarily in the form of stray finds of 9th and 10th century date (Zant 2009, 363-367). Elsewhere in Carlisle there is some more substantial evidence of continuous activity and settlement, in particular around the priory church, which evidently formed a site of Christian worship in the Anglian and Norse periods (McCarthy 2014).

3.3.3 Documentary and place-name evidence points to the north of Cumbria, undoubtedly including Carlisle, becoming part of the kingdom of Strathclyde, which expanded from the north in what is now Scotland into much of present-day Cumbria in the 9th and 10th centuries (Clarkson 2010), although how far is debatable (Elsworth 2018). Place-name evidence from the area around Carlisle certainly demonstrates that by this time it was populated by a range of different peoples including the decedents of the native Britons, those of Anglian descent, and Norse people who arrived in the area via Ireland and the Isle and Man (Paterson *et al* 2014). Again, archaeological evidence for this pre-Norman Conquest period is extremely limited, with the exception of stray finds and more substantial discoveries such as a group of Viking burials from Cumwhitton (*ibid*).

3.4 Medieval Period (11th century AD – 16th century AD)

3.4.1 By the medieval period Carlisle had already been inhabited for several centuries and was an important strategic location overlooking the River Eden; it remained an important city in the medieval period and the site of the former Roman fort was made use of continuously. A castle was built there by William Rufus after he took the city in 1092; nothing of this now remains as it was probably constructed from earth and timber (McCarthy *et al* 1990, 5-11), although the large ditch that it sat inside was probably retained in later phases (*op cit*, 28). The earliest surviving elements are most likely from the 12th century, when a stone keep and later curtain walls with a gatehouse were built (*op cit*, 28). Subsequent alterations in the medieval period essentially amounted to repairs and alterations to this existing fabric into the 16th century, when various parts were evidently in poor condition (*op cit*, 29-30). Recent excavations immediately to the south of the castle revealed extensive evidence for activity right up to the edge of the castle's outer ditch including various phases of buildings, roads, and other features associated with medieval tenements (Zant 2009, 371-412).

3.5 Post-Medieval (16th century AD – present)

3.5.1 The castle continued to be used into the post-medieval period, although following the end of cross-border conflicts with Scotland after the second Jacobite rebellion of 1745 its importance waned. While some substantial repairs and improvements were made in the 17th century, there are increasing reports of the walls being in poor condition by the 18th century and in 1834 Queen Mary's Tower was demolished (McCarthy *et al* 1990, 30). At the beginning of the 19th century, after a period of stagnation during the 18th century when the castle had become little more than a romantic ruin, it was used once again by the military. Initially this was largely as an arms depot, but from 1819 it housed a garrison and

this ultimately led to a range of alterations and the construction of new barrack buildings, although older buildings were modified to suit the new requirements, a situation that continued into the 20th century (*op cit*, 232-264).

4. Fieldwork Results

4.1 Introduction

4.1.1 The watching brief monitored the extraction of core samples in the dungeon/storeroom to the south corner on the lower ground floor of the keep (Plate 1 and Plate 2). An area of the floor in this room had dropped and subsequently settled as a result of the weight of a pool of water fracturing the 'crust' of the upper floor surface and causing it to collapse into a shallow void below (L Walsh, Senior Structural Engineer, Historic England pers comm). Water has been noted to collect in this location for a number of years, probably due to water ingress from a nearby ventilation slot and percolation through the walls (L Walsh pers comm).

Plate 1 (left): Carlisle Castle keep, viewed from the north

Plate 2 (right): The south-west side of the keep

4.1.2 Core samples were extracted by drilling a hollow cylindrical tube into the floor to a depth of *c*4m below the surface to identify any issues which may have caused the affected area to collapse (Plate 3). The process pushes underlying deposits more or less intact into the tube, which are then removed and analysed. The core drills used were progressively narrower at greater depths. In this instance, the uppermost core drill was *c*1m long and *c*80mm diameter, the next core drill was *c*1m long and *c*60mm diameter and the lowest core drill was *c*2m long and *c*40mm diameter.

4.1.3 Cables from the generator for the drilling equipment were fed through the same vent slot which is believed to have been one of the causes of water ingress into the dungeon / storeroom (visible in Plate 3). The floor level of the dungeon / storeroom is *c*4m below ground level outside on the south-east side (L Walsh pers comm), where the generator was positioned on top of the sunken paved stone walkway which abuts the keep.

Plate 3: Working shot

4.1.4 When they had been removed the core drills were placed in the adjacent room where smaller subsamples were extracted. In subsequent photographs, the uppermost sample is to the top of the photograph with the highest point of each sample being to the left hand side (the layered deposits below the floor can therefore be 'read' in section, starting with the uppermost deposits, by viewing the core drills from left to right and top to bottom).

4.1.5 Three samples were extracted: the first sample (TP1) was outside the area of collapse to the south-west side of the room, the second sample (TP2) was to the centre of the area of collapse, and the third (TP3) was towards the north-west end of the area of collapse (Figure 2).

4.2 Pre-excavation photographic record

4.2.1 As general good practice the site was recorded prior to the commencement of groundworks. The floor collapse had occurred on the lower ground floor in the room to the south corner of the *c*12th century stone keep (Figure 2). The room has a corbelled ceiling and measures *c*4.2m by 4.7m across, with a plinth along the north-east and south-west sides. There is a vent slot in the south-east elevation and a doorway with a step up in the north-west elevation. The floor surface comprises a very well-compacted clay with a thin, dark grey silty 'crust', which was noted to be up to 15mm thick where it had collapsed in an area *c*1.5m across (L Walsh pers comm; see Plate 4 and Plate 5). The sunken area had settled to *c*0.2m below the level of the rest of the floor prior to the commencement of the watching brief and a wider crack had appeared *c*0.4m away from the north-west side of the depression formed.

4.2.2 An information board in the corridor outside the affected room states that the rooms on the lower ground floor were mainly used for storage, especially for times of siege. Prisoners were reputedly held here during the Jacobite Rising of 1745-6 and pitted, '*well worn stones* [on the south-east elevation of the room; known as the 'licking stones'] *are said to be where moisture gathered so that parched prisoners could press their tongues against the damp stone*' for water (Plate 6).

Plate 4: Area of collapse in the dungeon / storeroom, viewed from the north-east

Plate 5: Area of collapse in the dungeon / storeroom, viewed from the west

Plate 6' 'Licking stones' in the south-east elevation of the dungeon/storeroom

4.3 Watching Brief

4.3.1 ***TP1***: the uppermost deposit in the first core drill (i.e., the first c1m of deposits below the floor) comprised a firm-to-stiff reddish-brown, slightly sandy clay (***100***) (Plate 7), which had been apparent where the floor collapsed. A possible lens of a soft, darker, grey-brown silt material was noted 0.8m along the length of the drill from its top end, but otherwise this deposit was fairly uniform, with some small sandstone inclusions. The second sample (i.e., the next c1m of deposit below the floor) evidenced continuation of this reddish-brown clay. The deposit was still fairly firm, very uniform, and with few inclusions. 'Voids' in the core sample were said to be probably from where the sample had been compressed by the drill and not indicative of voids below the floor (Jason, Geoinvestigate staff pers comm). The final core section showed a further c0.8m of the reddish-brown clay, which was tending to soft at this depth, and the last 1.0-1.2m of the core sample (i.e., c2.8-4.0m depth below the surface) comprised a uniform, soft, dark grey-brown silty-clay, with very few inclusions (***101***) (Plate 8 and Plate 9). It did not appear to contain any organic material and did not have the characteristic 'smell' which is often associated with such deposits. The deposits in all of the samples were noted by Geoinvestigate staff to not be unduly wet or waterlogged at the time they were taken (Jason, Geoinvestigate staff pers comm).

Plate 7: The first core sample from TP1

Plate 8: All the core samples from TP1

Plate 9: Close up of the transition from a reddish clay to a dark silt layer in TP1

4.3.2 ***TP2***: this core drill sample was started in the centre of the collapsed area; however, it had to be abandoned when an obstruction was encountered by the first core drill (in this case, at a depth of less than a metre). The same reddish-brown clay as was noted in TP1 was extracted and the obstruction was found to be a sizeable piece of unworked sandstone.

4.3.3 ***TP3***: the same reddish-brown clay was noted in each of the core drills as in TP1 (Plate 10 and Plate 11). It was slightly softer towards the surface in this area (said to be 'soft to firm' as opposed to 'stiff to firm' by GeoInvestigate staff), but again the clay (***100***) was not reported to be particularly moist. At around 3m depth of core drilling, a similar soft, dark brown, silty-clay layer (***101***) was noted to that found at a similar depth in TP1 (Plate 12).

Plate 10: The first core sample from TP3

Plate 11: All core samples from TP3

Plate 12: Close up of the transition from a reddish clay to a dark silt layer in TP3

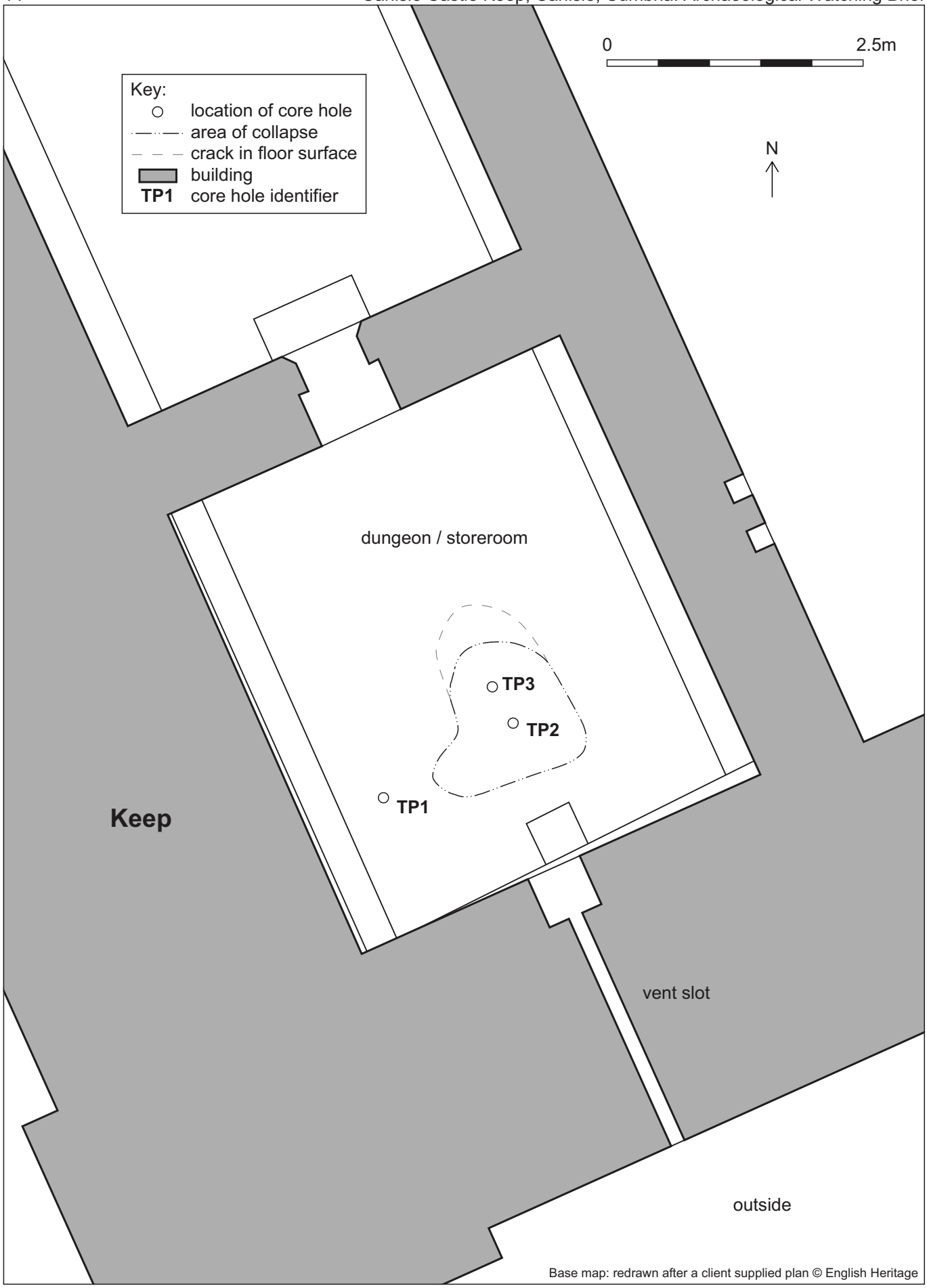


Figure 2: Plan of the watching brief area

Client: English Heritage

5. Discussion

5.1 Results

5.1.1 The core drill samples showed that the reddish-brown clay, exposed beneath the surface crust where the floor had collapsed, continued to a depth of *c*3m before becoming a softer, dark grey-brown silt. The reddish clay and the distinct silt deposit below it were each fairly uniform in colour, consistency and composition, with very little indication of organic content, and no finds were recovered from either deposit. The clay deposit was fairly firm; none of the deposits were noted to be excessively moist and no voids were detected in any of the areas sampled.

5.2 Conclusions

5.2.1 Boring small core holes into the floor in the dungeon/storeroom did not reveal any archaeological finds or features. The underlying layers within this room seem to be fairly uniform in nature, not apparently containing organic matter or artefacts; however, it is possible that opening a wider area of excavation might yield more interesting (and conclusive) results from an archaeological perspective about the nature of these deposits.

5.2.2 The most significant outcome from the groundworks conducted during the course of the watching brief will come from the analysis of the core samples themselves and the implications that this analysis has for the strategic management of the heritage asset; specifically, how best to repair the damage to the floor such that the area may safely be reopened to the public.

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Appendix 1: Summary Context List

Context	Type	Description	Interpretation
100	Deposit	Reddish-brown, slightly sandy clay, with few small sandstone inclusions; generally firmer towards the surface, becoming softer at greater depths; encountered in TP1, TP2 and TP3 to a depth of c3m below the current floor surface; above ***101***; no organic content noted; no finds; not particularly moist; no voids detected	Thick clay deposit below well-compacted 'crust' comprising the floor of the dungeon / storeroom
101	Deposit	Uniform, soft, dark grey-brown silty-clay, with very few inclusions; below ***100*** in TP1 and TP3; no organic content noted; no finds; not particularly moist; no voids detected	Silt deposit below clay layer in the dungeon / storeroom

Appendix 2: Summary Listed Building Information

Heritage Category: Listed Building

Grade: I

List Entry Number: 1208315

Date first listed: 01-Jun-1949

Statutory Address: INNER BAILEY KEEP

County: Cumbria

District: Carlisle (District Authority)

National Grid Reference: NY 39748 56224

Details: Keep of Carlisle Castle and adjoining forebuilding. Early 12th century with mid-16th century and 19th century alterations. Extremely thick walls of squared red sandstone with stepped chamfered plinth, broad pilasters and splayed embrasures to parapets. Flat lead roof. Four storeys, roughly square. East face has off-centre doorway recessed for portcullis. An additional entrance at first floor level at left has been covered by a two-storey forebuilding, which is partly medieval, but very altered (a 1577 replica panel is built into one wall). Various original slit windows, but some enlarged as casements or sashes with glazing bars; over one window is the inscription JOHN HYDE 1714. Sloping gun ramp on north face is now stepped; earthen ramparts cover parts of the west and south faces. Broad splayed embrasures to parapets are thought to be a 16th century alteration, removing part of its original height. INTERIOR retains many original and later features; vaulted basement; 12th century fireplace; mural chambers with 15th century carvings. For full details McCarthy *et al* (1990). Listing includes the former 1827 Quartermaster's store adjoining the Forebuilding and remaining rear wall of the 1577 Governor's House which adjoins the Keep.