

# COCKERSAND ABBEY, THURNHAM, LANCASHIRE AN ANALYTICAL EARTHWORK SURVEY

Andrew Burn, Al Oswald and Marcus Jecock



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## SUMMARY

In 2008, English Heritage carried out an analytical survey of the earthwork remains of the Premonstratensian Abbey of St Mary-in-the-Marsh at Cockersand, Lancashire. The abbey, which originated as a hermitage in around 1180, occupies an outcrop of sandstone lying to the south of the broad mouth of the River Lune and stands only 4.8m above mean high tide level. By 2007, dilapidation of the standing remains and active coastal erosion had resulted in the site being assessed as at 'High Risk' in English Heritage's 'Heritage at Risk Register' for the North-West Region. Following this, English Heritage's Regional Advice and Grants Team provided grant-aid for urgent works to the standing Chapter House and requested the present survey of its environs.

The conventual area had been extensively excavated between 1922 and 1927 and some remote sensing work was undertaken in 1997, followed by preparation of a conservation assessment of the site in 2004. The present investigation builds on the previous work, clarifying the extent and layout of the inner and outer precincts and setting the abbey in its wider context. The survey also offers insights into the rate and nature of past coastal erosion. It will help to inform advice to the owners on the management of the site and feed in to the current review of coastline policy via the North-West Shoreline Management Plan.

## CONTRIBUTORS

The field investigation was carried out by Andrew Burn, Al Oswald and Marcus Jecock of English Heritage Research Department's Archaeological Survey and Investigation team. Simon Crutchley assisted with the supply of Lidar data and Trevor Pearson with the ground modelling of the environs of the site. The text was produced by Andrew Burn and Alastair Oswald, and the illustrations by Phil Sinton and Andrew Burn. Pete Murphy, English Heritage's Coastal Strategy Officer, and Jennie Stopford, the local Inspector of Ancient Monuments, provided useful comments. The report was edited by Marcus Jecock.

## ACKNOWLEDGEMENTS

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## CONTENTS

1. INTRODUCTION	I
2. DOCUMENTED HISTORY OF THE SITE	3
3. HISTORY OF ARCHAEOLOGICAL INVESTIGATION	7
4. THE SETTING OF THE ABBEY	II
5. DESCRIPTION AND INTERPRETATION OF THE SITE	14
6. DISCUSSION	20
7. COASTAL EROSION ISSUES	23
8. METHODOLOGY	28
9. REFERENCES	29



## LIST OF ILLUSTRATIONS

Cover	The chapter house and the facing wall of the sea cliff from the south	
Figure 1.	Location of Cockersand Abbey	1
Figure 2.	Cockersand Abbey and its immediate environs	3
Figure 3.	Extract from Ordnance Survey 1891 First Edition 25-inch scale map	5
Figure 4.	Roper's 1886 interpretative plan of the earthworks at Cockersand	6
Figure 5.	Swarbrick's excavation plan of 1923	7
Figure 6.	Geophysical survey plot of the western area of the abbey, produced in 1997	8
Figure 7	Lidar imagery showing local topography; darker red areas denote higher ground	10
Figure 8.	Lidar data highlighting the earthwork remains of Cockersand Abbey	11
Figure 9.	Interpretative plan of the earthworks recorded by the 2008 survey	15
Figure 10.	View southwards along the sea wall showing areas of erosion at its base	23
Figure 11.	View southwards along the facing wall of the sea cliff, showing landslips caused by wave action	24
Figure 12.	View of standing remains around the chapter house showing conservation work in progress	26
Figure 13.	Comparison of 2008 and 1975 surveys and 1913 OS map, showing mapping of the sea cliff revetment over the last 90 years	27
Figure 14.	Location of permanently marked survey station	28
Figure 15.	Hachured earthwork plan of Cockersand Abbey	30





## I. INTRODUCTION

It is documented that in around 1180, Hugh Garthe founded a hermitage at Cockersand in Lancashire (Figure 1). The site he chose was then one of a number of small eminences at the western edge of the extensive tidal salt marshes and peat mosses at the southern extreme of the broad estuary of the River Lune (Figure 2). As a result of reclamation in the 18th century, all the marshes are now farmland. By about 1192, the hermitage had been re-established as the Premonstratensian Abbey of St Mary-in-the-Marsh, which prospered until its suppression in 1539. The abbey was in ruins by 1727, but in 1750 the chapter house was renovated by the Dalton family and subsequently used by them as a mausoleum until 1861. The most recent repair of this building, which is Listed Grade I (LB UID 182270), was grant-aided by English Heritage in 2007. The remainder of the complex, comprising earthworks and a few upstanding fragments of walls, is protected as a Scheduled Ancient Monument (RSM 27844) and lies within the Lune estuary Site of Special Scientific Interest (Figure 1).

Rising sea levels and more frequent storm events are bringing about more severe coastal erosion. This is increasingly threatening the stability of both the sea wall that defends the

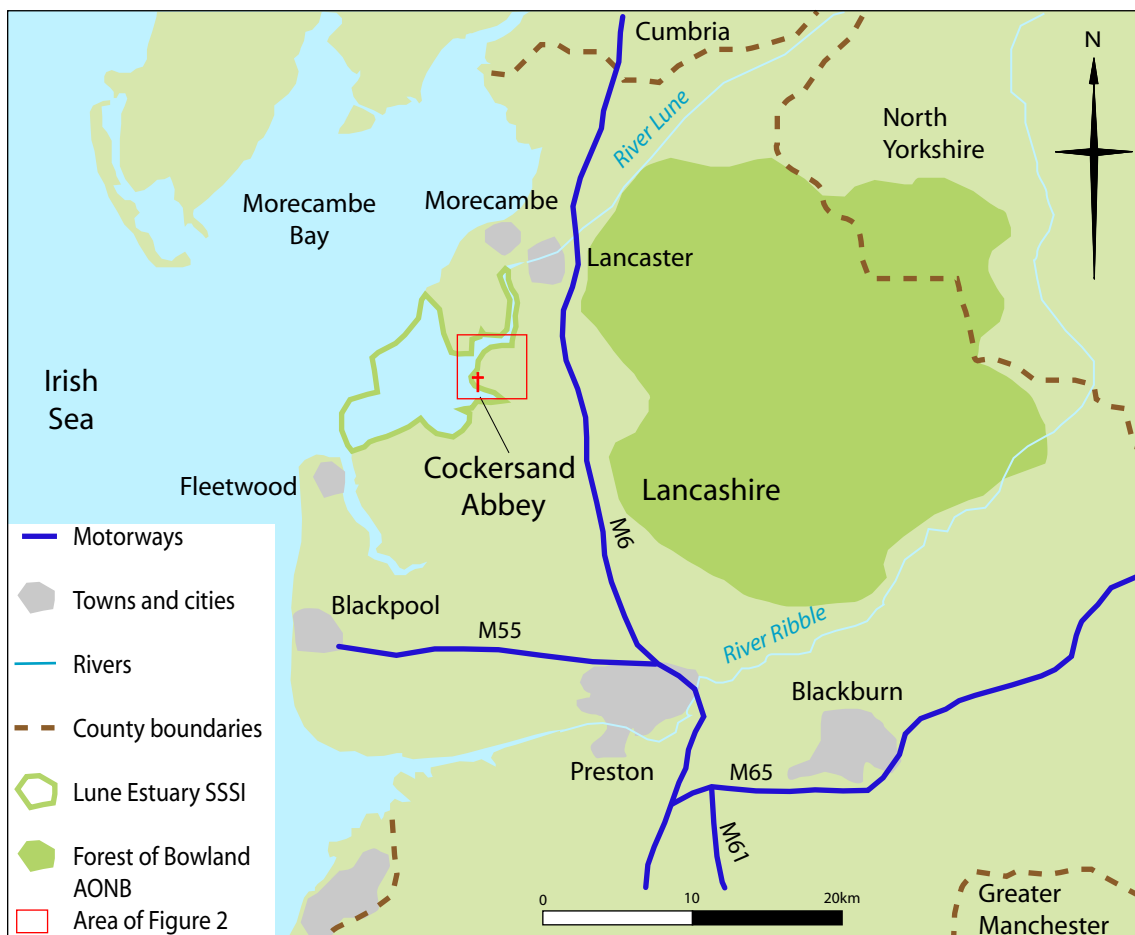


Figure 1. Location of Cockersand Abbey.

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reclaimed land and the facing wall which protects parts of the low sandstone cliff that defines the western edge of the eminence on which the abbey sits. The portion of the sea cliff standing above the facing wall, which comprises a layer up to 2m deep of sandy soil overlying sandstone, is particularly vulnerable to erosion by larger waves, resulting in numerous small-scale incursions and landslips. The upper part of this soil layer includes archaeological deposits relating to the abbey. The foot of both the sea wall and the facing wall are also being undermined in places, potentially posing a more serious threat in the longer term, since loss of a significant length of this barrier would presumably cause increased erosion of the eminence on which the abbey is situated and eventually flooding of the hinterland, exposing the periphery of the archaeological site to erosion from all sides. A Shoreline Management Plan for Morecambe Bay, including the Lune estuary and the site of the abbey, was drawn up in 1999 by Wyre Borough Council, the Environment Agency and other stakeholders (Shoreline Management Partnership 1999). This has adopted a 'hold the line' strategy, in part to protect the historic environment and the natural heritage. However, repeated attempts to protect the face of the soil layer with poured concrete and dumps of rubble and to strengthen the face and foot of the sea cliff revetment are having limited effect. Partly as a result of this, in 2000, the Abbey was put on the Buildings at Risk Register, subsequently being assessed as being at 'High Risk' in the audit of Scheduled Monuments at Risk in the North-West (English Heritage 2008).

In July 2008, Dr Jennie Stopford, English Heritage's local Inspector of Ancient Monuments, initiated a rapid survey and analysis by the organisation's Archaeological Survey and Investigation team, part of the Research Department. The proposed survey was targeted to elucidate, as far as possible, the nature and extent of archaeological remains under immediate threat from coastal erosion. The area of the measured earthwork survey was to coincide with the extent of a geophysical survey carried out in 1997 by GeoQuest (see Section 4, Figure 6). From the outset, it was immediately clear that the understanding of these earthworks in particular, and the creation of a meaningful record in general, could be better served by an analytical survey of the entire abbey, which is neither large nor complex. The survey area was therefore expanded to cover the precinct and its environs, a total area of 4.6 hectares (11.4 acres). The survey was completed over the course of two days in August 2008 at Level 3 standard (as defined in Ainsworth *et al* 2007).

## 2. DOCUMENTED HISTORY OF THE SITE

The documentary evidence for the history of Cockersand Abbey has been thoroughly researched (Farrer and Brownbill 1908; Malim 2004; Marshall 2001; Sherdley and White 1975; Swarbrick 1923), so this account presents no more than a summary of that work.

At some point between 1180 and 1184, Hugh Garth established a hermitage on the highest of the sandstone outcrops along the western edge of Thurnham Moss. The land was given to him by William de Lancaster I, his wife Gundreda and their son William II, who described him as a hermit 'of great perfection' (Middleton *et al* 1995, 128). Hugh presumably had some link with the Premonstratensian order, as it is recorded that in 1189 two canons helped him set up a hospital dedicated to St Mary as a daughter house of Croxton Abbey, a Premonstratensian house in Leicestershire (Marshall 2001).

Given its isolation, this may have been a leper hospital, but the Premonstratensian order generally valued the seclusion offered by more inhospitable sites. In 1192 a larger community of Premonstratensian canons was established, presumably initially under a

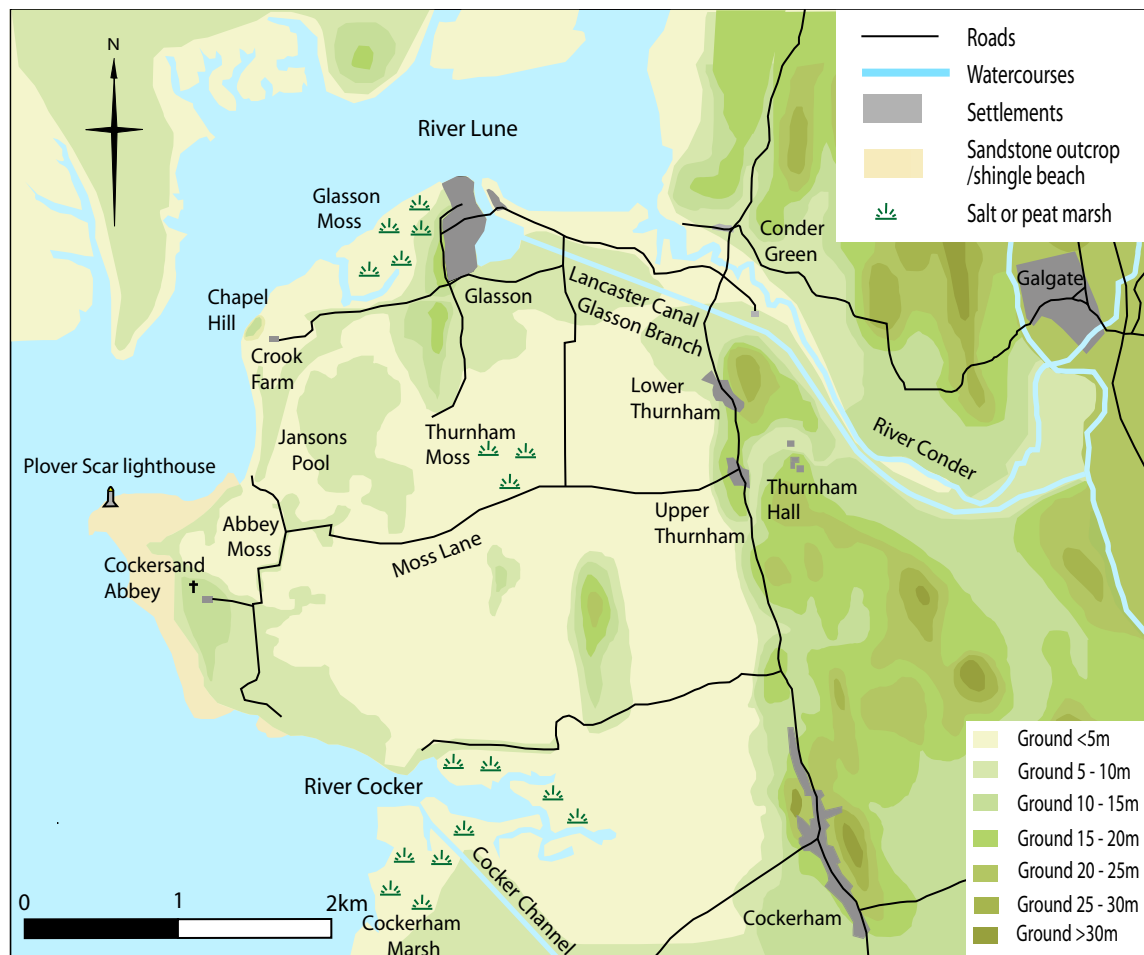


Figure 2. Cockersand Abbey and its immediate environs.

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prior. However, within two years the community was led by an Abbot Thomas, indicating that the status of the house had been promoted to an abbey, which was initially known as St Mary-on-the-Marsh-on-the-Cockersand (Farrer and Brownbill 1908, 159).

Most of the monastic buildings now visible as excavated foundations date to the early 13th century. The Lady Chapel is generally thought to have been added later in the century (Swarbrick 1923, see also fig 4), although there are grounds for contesting this date (see Section 6). Cockersand Abbey grew steadily in prosperity over the course of the 13th century, as the Premonstratensian order became more popular and as England as a whole experienced economic growth. It accumulated numerous small gifts of land throughout the North-West, eventually acquiring an unusually large amount of land for a house of this size.

It is known that the abbey was a victim of Scottish raids in 1316 and 1322, but the physical effects of these are unknown (Sherdley and White 1975). It is highly likely that during the 13th century some form of sea wall was constructed to protect the outcrop on which the abbey sits. Evidence for the existence of such a wall comes from the relaxation granted by Pope Gregory in 1372 to penitents who would give alms for the repair of the monastery, 'which was stated to be so near to the sea that the walls built for the preservation of its buildings were being worn away and destroyed by the waves' (Swarbrick 1923, 165).

In 1378 the abbot and convent begged Richard II to confirm their charters without fine, in view of their poverty and the fact that 'each day they are in danger of being drowned and destroyed by the sea.' (Farrer and Brownbill 1908, 155, quoting Dugdale). John Leyland, chaplain to Henry VIII, later described the abbey as 'standing very bleakly and object to all winds' (Marshall 2001, 5). Continued erosion is suggested by Whitaker's comment in his *History of Richmondshire*, that the waves used to wash out the dead and leave their bones to whiten on the beach (quoted in Swarbrick 1923, 165). These skeletons may relate to the documented pre-monastic use of the site as a hospital, as the monastic graveyard would normally be expected to lie to the east of the church. What is clear from these historical sources collectively, however, is that the canons had a significant problem with erosion and an ongoing battle against the elements.

Although the abbey was the third wealthiest in Lancashire by the time of its suppression in 1536 (Swarbrick 1923, 174), Henry VIII's commissioners initially valued its annual income at £157, well below the minimum income required for the smaller houses to avoid immediate dissolution (Marshall 2001, 55). However, the house was reprieved when the commissioners gave it a good report and found sufficient cause to revalue its income at £282. As a result, it was allowed to remain in existence until 1539, when it became the last monastic house in Lancashire to be dissolved. The survey by the commissioners in 1536 provides some of the most detailed information about the abbey, as it contains a systematic inventory and valuation of the contents of each room. It also records the number of occupants: 22 canons, 57 servants and 5 old men who were either resident in the hospital or *conversi*, lay brothers who did manual labour and were responsible for the maintenance of the monastery (Marshall 2001, 56).

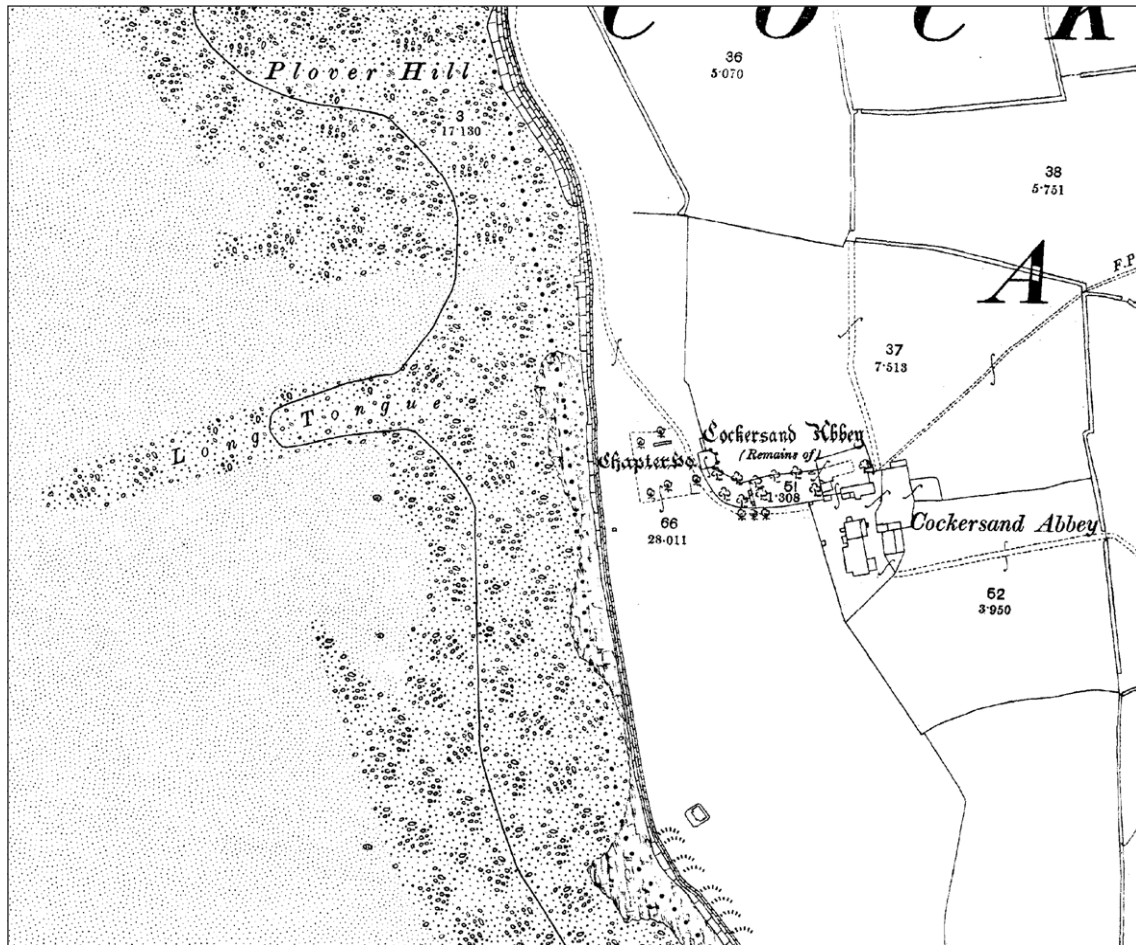


Figure 3. Extract from Ordnance Survey 1891 First Edition 25 inch scale map surveyed in 1888 (reduced from original scale)

The monastic lands had been let out to tenant farmers prior to the suppression and, once the abbey had gone, not much changed, except that the rents were then paid to the Crown and, after the Crown sold the abbey to John Kitchen for £700 8s 6d in 1543, to private landowners. With the marriage of Kitchen's daughter Anne, it passed into the ownership of the Dalton family of Thurnham Hall, 3.8km to the east, and remained part of the Dalton estate for nearly 400 years (Farrer and Brownbill 1908, 58). An engraving by Samuel Buck, dated 1727 (Swarbrick 1923, fig C) shows the chapter house as a shell, along with other overgrown ruins which are far more extensive than those recorded in 1842 on the Ordnance Survey's First Edition 6-inch map (Ordnance Survey 1848). The ruins depicted include upstanding walls belonging to the crossing of the church to the north of the chapter house and the southern range of the cloister; what appears to be a grave slab is shown in the nave of the church. While it is possible that Buck has used a degree of artistic licence, the general impression is credible.

In 1750, the Dalton family repaired and converted the chapter house into a mausoleum; it fell into disuse as such in 1861 but has been maintained ever since (Figure 12).

# COCKERSAND ABBEY.

## SKETCH PLAN.

15 Jan. 1886.

W. O. Roper.

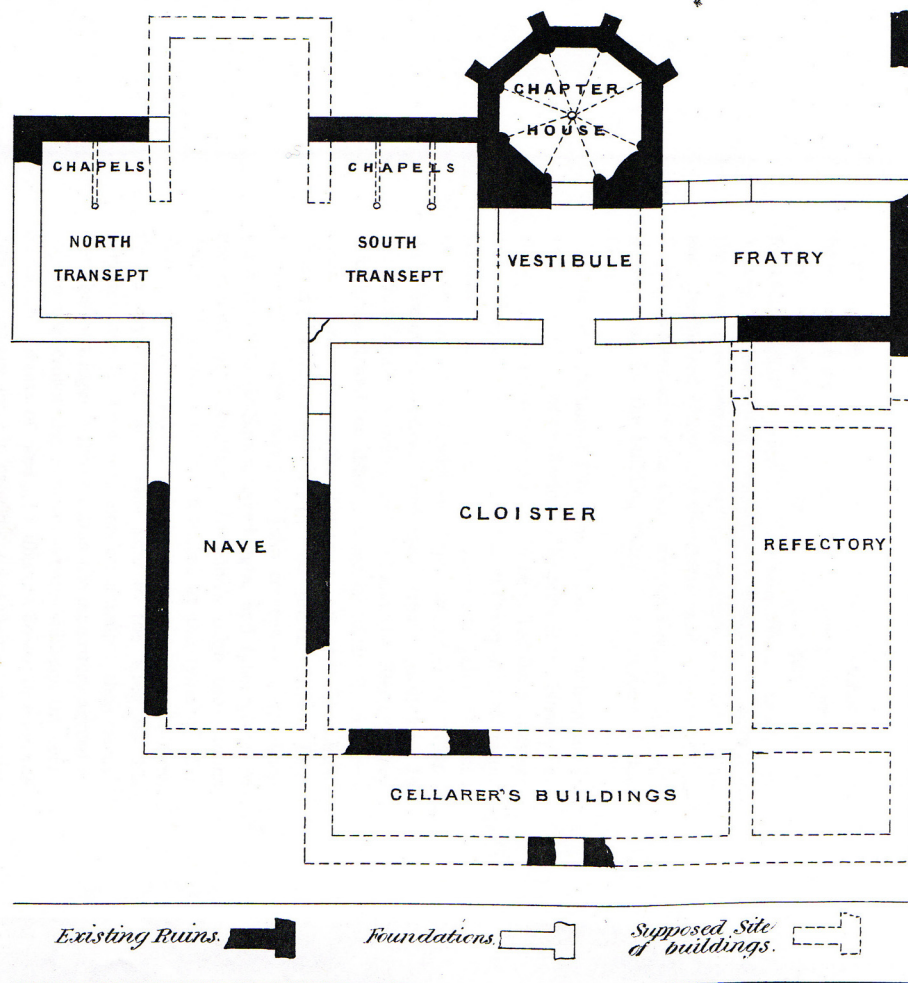


Figure 4. Roper's 1886 interpretive plan of the earthworks at Cockersand

### 3. HISTORY OF ARCHAEOLOGICAL INVESTIGATION

In the 19th century, an unknown degree of excavation, described as 'destructive', was reportedly carried out by unnamed antiquarians (Roper 1886, 34). Toward the end of the century, Roper attempted a reconstruction of the abbey plan based on 'the existing remains and indications afforded by the ridges and swellings in the turf' (Swarbrick 1923, 173), which is sufficiently accurate to indicate that he undertook some form of measured survey (Figure 4). The earthworks are not depicted on early Ordnance Survey mapping (Ordnance Survey 1848; 1891; 1913; 1919) although the standing wall fragments are shown (see, for example, Figure 3).

Extensive excavations were carried out by the Exploration Committee of the Ancient Monuments Society between 1923 and 1927 but the findings were not fully written up until half a century later (Sherdley and White 1975; Swarbrick 1923). These exposed the ground plan of the conventual nucleus by 'chasing' the walls, working outwards from extant fragments around the chapter house (the excavation plan is reproduced here as Figure 5). The excavations also revealed a short stretch of wall adjacent to the cliff edge interpreted as part of a late monastic building which the excavators, following

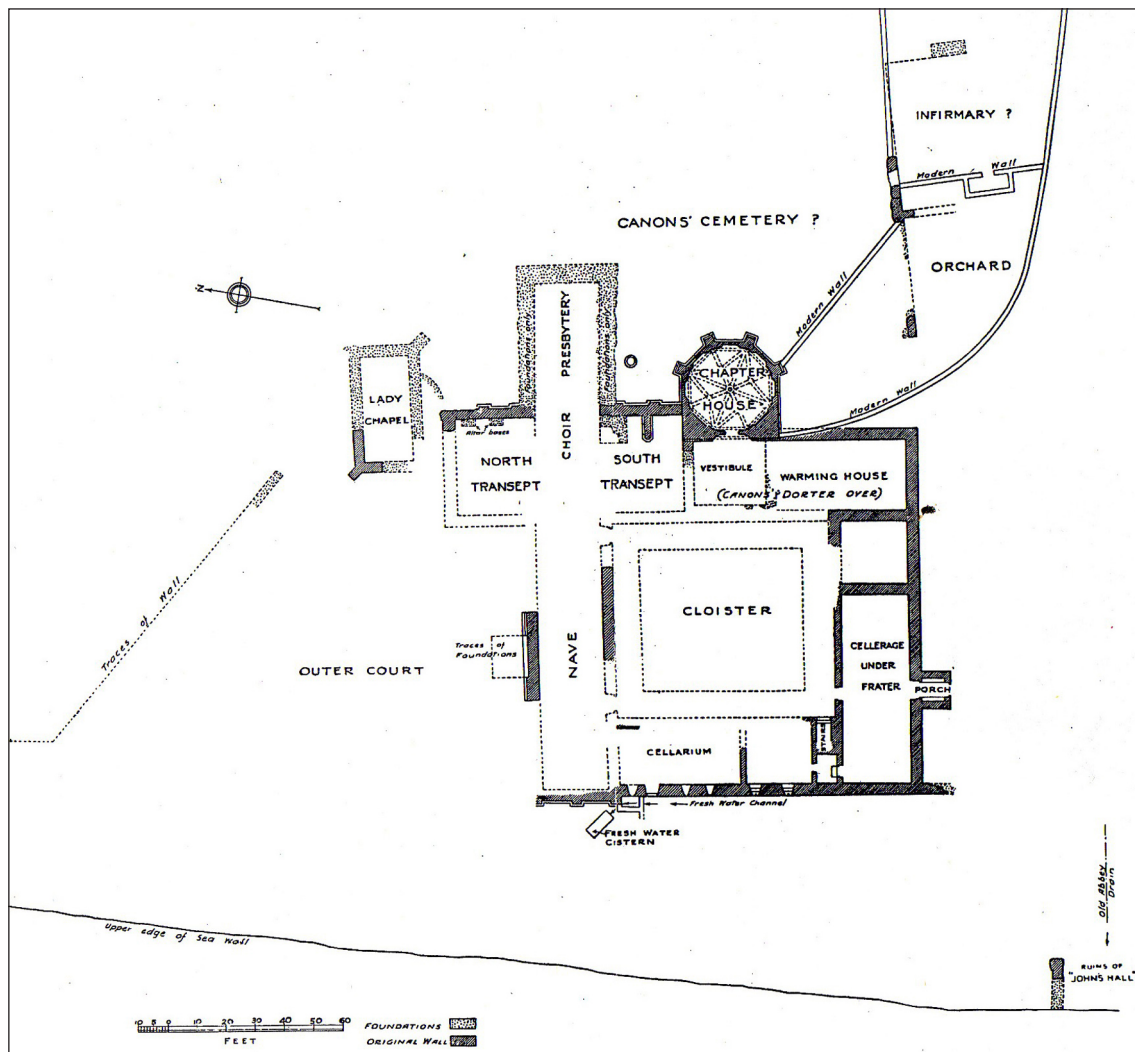


Figure 5. Swarbrick's excavation plan of 1923



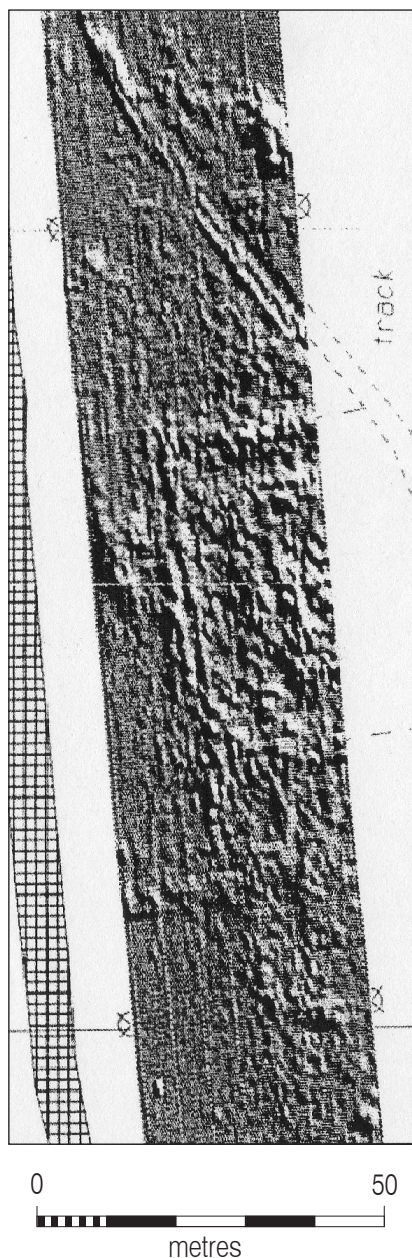


Figure 6. Geophysical survey plot of the western area of the abbey, produced in 1997 by Geoquest

local oral tradition, called John's Hall (Swarbrick 1923, 173; Sherdley and White 1975) - apparently in reference to the 'King Johns Hall' mentioned by Henry VIII's commissioners (Swarbrick 1923, 166), although the origins of the name are unknown. A series of photographs illustrate the excavation methodology employed: as was typical at that date, there was virtually no concern for identifying stratigraphy. While the precise limits of the trenches are not shown on the published plan, the extents of most can be inferred from the wall remains that are depicted. Two exploratory trenches, which evidently did not reveal any walling and whose existence could not therefore be deduced from the published plan, were identified by the 2008 survey, surviving as shallow depressions radiating out from a surviving fragment of masonry. The locations of numerous spoil dumps resulting from the excavations have also been clarified by the 2008 survey (see Figure 15).

The Department of the Environment (Ministry of Works) commissioned a close-interval contour survey of the site in 1975; although this clearly showed some archaeological features, there was no attempt at interpretation. This survey did show soil erosion at the top of the cliff and illustrated the topography of the site (Malim 2004, 9). Comparison with the 2008 survey shows little change in the line of the bottom of the facing wall of the sea cliff, but some change in the line of the top of the wall relating to landslips in the past 30 years. The same can be seen when the 1975 survey is compared with the 1925 excavation plan. This survey can be of use as a midpoint between the two plans of the abbey, showing how the landslips and erosion have affected the coast line over the past 75 years.

In 1983, a severe storm eroded a section of the facing wall of the sea cliff, revealing a 'tunnel' which local people believed to be a secret escape route leading from Thurnham Hall. As the landowner, Mr D H Kellet, concluded in a later article, the tunnel was almost certainly the abbey drain: his description was accompanied by drawings and photographs (Kellet 1991, 12). The exact position of the outflow appears to have passed unrecorded and was concealed by subsequent repairs to the facing wall, but the 2008 survey has re-established its location.

More recently, research by the Lancaster University Archaeological Unit was carried out as part of the North West Wetlands Survey. This concentrated on the likely topographic setting of the abbey in the medieval period, and the resources available to the monastery from nearby Thurnham Moss, the low lying land east of the abbey (Middleton *et al* 1995; Malim 2004, 10; see *also* Figure 2). The Unit subsequently recorded a section eroded through the soil layer above the facing wall of the sea cliff by winter storms in 2000, revealing archaeological deposits contemporary with the occupation of the abbey (Malim 2004, 10).

In 1997 and 1999, the Environment Agency commissioned Babbie Group to undertake assessments of the coastal defences at Cockersand. As part of this work, in 1997, GeoQuest undertook a geophysical survey of a 30m by 280m transect in between the abbey ruins and sea wall revetment set 10m back from the sea cliff (Malim 2004, 10; Figure 6). This revealed a few additional details of the layout of this part of the site, with some walls detached from the main church and claustral area. The 2008 survey has shown that these are parts of the monastic precinct boundary to the north and to the south of the claustral range.

In 2003-4, Lancashire County Council commissioned Gifford and Partners to undertake a conservation study of the environs of Cockersand Abbey to inform the Morecambe Bay Shoreline Management Plan (Malim 2004). The report was specifically intended to underpin better management of the facing wall protecting the sea cliff and included a survey of the integrity of this and the main sea wall. The report made proposals for maintaining sea defences, as well as investigating various broad-brush options for the conservation of the abbey remains (although analytical earthwork survey was not specifically mentioned).

The earthwork survey undertaken by English Heritage in 2008 complements the 1997 geophysical survey (Malim 2004). Detailed consideration and recording of the earthwork remains has not been undertaken as part of previous modern studies, the only investigation of the earthworks having been carried out in the 19th century, with only interpretative plans surviving (Figures 4 and 5). More importantly, the new research serves to contextualise the remains currently threatened by erosion of the upper part of the sea cliff.

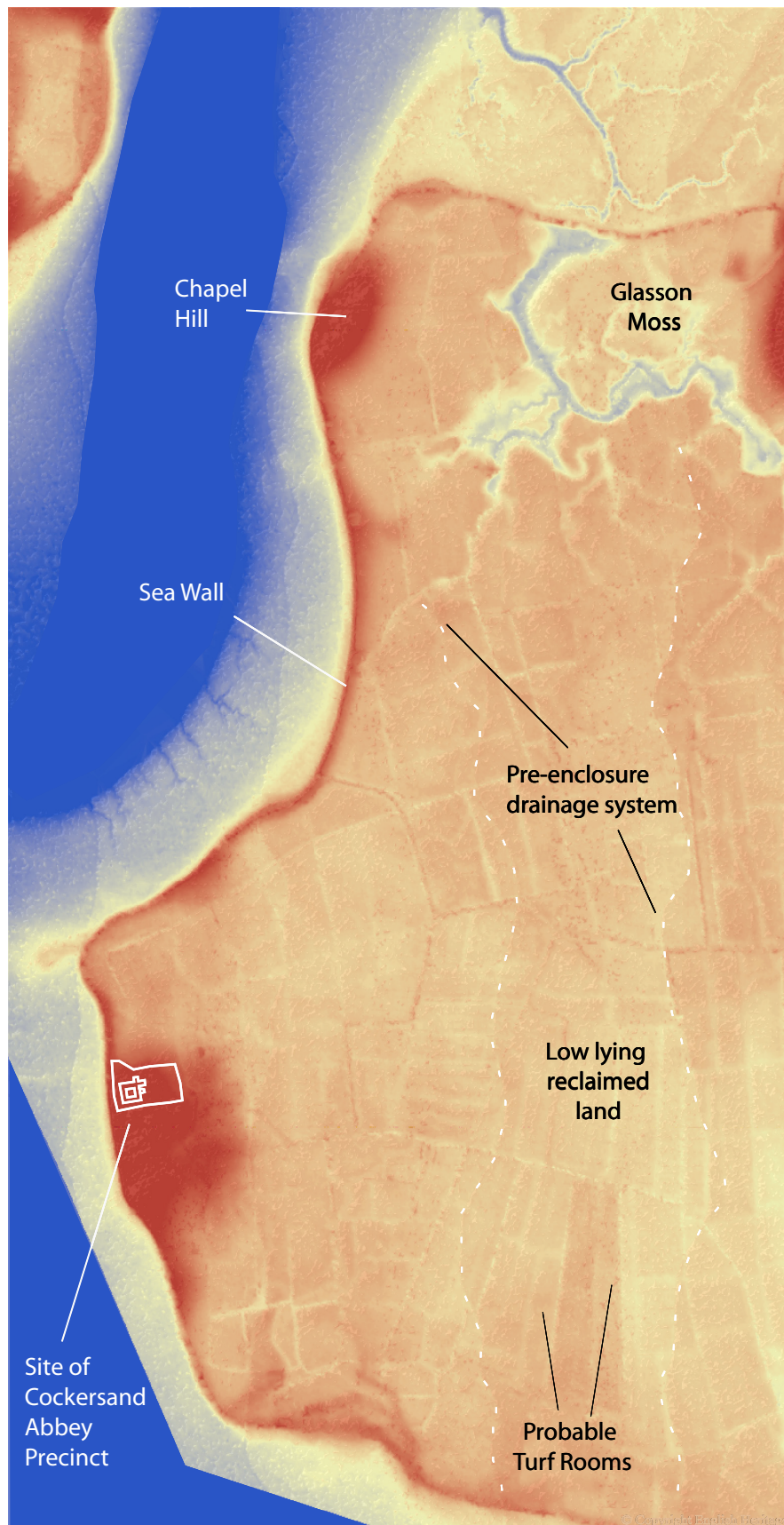


Figure 7. Lidar imagery showing local topography; darker red areas denote higher ground. Height Data licensed to English Heritage for PGA, through Next Perspectives™.



## 4. THE SETTING OF THE ABBEY

Cockersand Abbey is located on the highest of a string of low sandstone eminences that define the western edge of former salt marsh/peat moss (known historically as Thurnham Moss) that extended 3km inland as far as the villages of Thurnham and Cockerham (Middleton *et al* 1995, 125). Most of these eminences are between 6m and 9m above Ordnance Datum (above mean sea level) and today appear as small areas of higher, drier land within the reclaimed salt marsh/peatland (Figure 2). Though the deep red sandstone is widely used in the local area as a building material, including for the abbey, it is relatively soft and easily eroded. In common with most monastic settlements, the highest available ground was selected for the conventual buildings to avoid the flooding that presumably occurred on the lower ground at high tide. The land east of the abbey is predominantly post-medieval enclosure, probably contemporary with the construction of the sea wall and cliff revetment that links the eminences and the drainage of Thurnham Moss (Malim 2004, 29).

From the documented extent of the monastic lands, which stretched to the north to take in Chapel Hill, it would appear that Thurnham Moss was already being exploited in the medieval period. The nature of that exploitation is unclear, but examples of

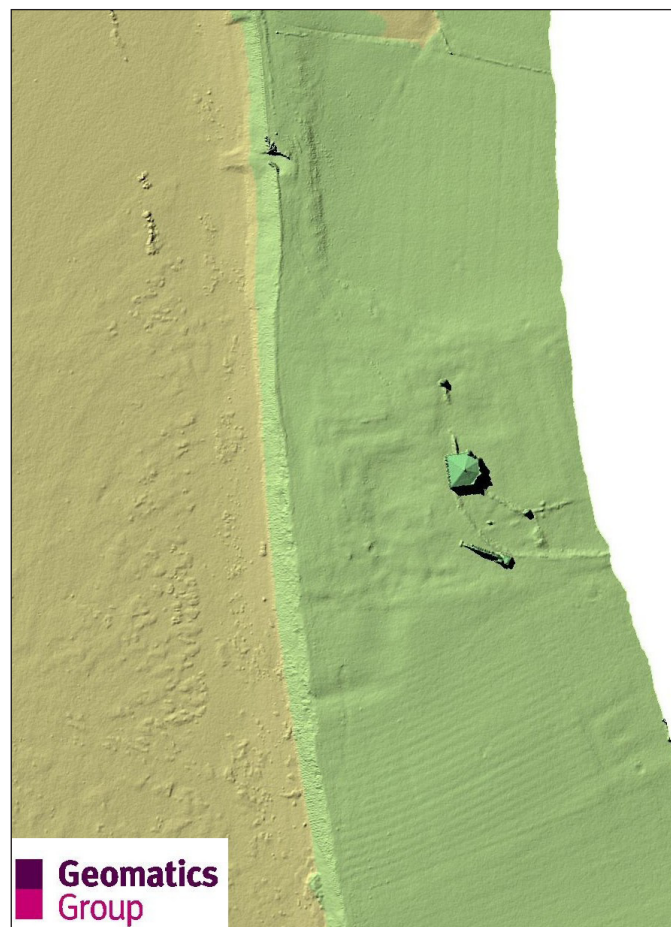


Figure 8. Lidar data highlighting the earthwork remains of Cockersand Abbey. Lidar data copyright Geomatics Group 2008



medieval sea walls built for the purpose of land reclamation are well-attested in similar geographical contexts elsewhere (for example on Romney Marsh, Kent) and there is some documentary evidence for the construction of protective walls by the monastery, although their form and location are not specified. It is not impossible, therefore, that the abbey instigated early steps toward land reclamation. The stone wall that presently faces the sea cliff, which superficially seems to be of 18th- or early 19th- century construction, appears to re-use building stone from the Abbey and may conceal or replace a medieval precursor. Analysis of historic maps, however, shows that the coastline has remained essentially unchanged since the construction of the present sea wall, at whatever date that occurred (Figures 3 and 9).

Salt marsh can still be seen alongside the River Lune near Glasson, 3km to the north, but the Abbey's immediate surroundings are now mainly under pasture, with some arable fields (Figure 7). Several small post-medieval farmsteads are scattered across the peninsula, including Abbey Farm, which was built at the south-east corner of the precinct, probably in the late 18th or early 19th century (Swarbrick 1923).

Lidar data, obtained from both the Environment Agency and the NextPerspectives website, has been used to ground-model the environs of the Abbey, while tidal records for Glasson Dock (measured in relation to Admiralty Chart Datum (ACD)), have been used as an indicator of high tide levels in the recent past. Based on this, crude modelling of the landscape has been carried out (Figure 7). This can be used to illustrate the extent of low lying ground historically at risk of flooding at high tide before the construction of the sea wall between the sandstone outcrops. It must be stressed that many complicating factors have not been taken into account in these models, including the fact that the present level of Thurnham Moss may have been lowered by peat cutting, the alteration of tidal patterns in the estuary brought about by the imposition of an artificial barrier and the influence of the present network of drainage ditches on future tidal patterns behind the sea wall.

The Morecambe Bay Shoreline Management Plan (Shoreline Management Partnership 1999) states that if the current sea defences were to fail, the coastline could retreat at a rate of 1-2m a year, leading to the complete destruction of the abbey in fifty years (Malim 2004, 38). This assumes that the current pattern of increased erosion of the soil layer above the sandstone will continue and that this will represent the main threat to the site. Predictions for the rise in sea level vary from 0.6m up to 1.0m over the next century (sources: UK Climate Impact Panel 2007; Environment Agency 2008). It is therefore conceivable (notwithstanding the current 'hold the line' strategy), that if the sea wall and the facing wall of the sea cliff were entirely lost, the location of the abbey could become even more isolated than when first chosen by the monastic community (Figure 7). However, the new ground-modelling suggests that the monument should actually survive for at least a century, since it occupies the highest ground, several metres above the highest ever recorded tide, even when taking into consideration increased rates of erosion. Evidently the canons chose the site of their foundation wisely, as is typically the case.

Lidar survey provides little hint of any historic seawalls other than the extant example, which may indicate that the process of reclamation was completed in a single post-medieval episode. Until the reclamation was carried out, and assuming this did not occur until some time after the monastic community had been dissolved, the salt marshland to the landward side of the abbey would have provided the canons with a valuable resource (Middleton *et al* 1995, 127-128; Malim 2004, 10). However, the Lidar plot does reveal a discontinuous ridge of marginally higher ground set slightly landward of the sea wall (Figure 7), linking the outcrops of sandstone. This ridge is followed by (and to a degree accentuated by) the line of the modern sea wall and it seems plausible that a medieval antecedent, possibly a causeway linking the monastic holdings, could have followed this route.

To the seaward side of Chapel Hill, the remains of a medieval fishing baulk or pier, now dilapidated, have been recorded (Malim 2004). This may have been built to service the Abbey. It is possible that a second fishing baulk existed closer to the abbey, now represented by a spit of compacted cobbles called Long Tongue (Figure 3), though there is no conclusive evidence that the feature is of artificial origin or artificially enhanced.

The field boundary pattern also provides evidence for the post-medieval land use of Thurnham Moss, the area to the east of the abbey; here, long thin rectangular fields provide evidence for the cutting of peat. These peat or turf 'rooms' are contemporary with the enclosure of the land and the Lidar imagery reveals slight differences in the heights of some individual fields, pointing to differential exploitation. Further evidence for this activity can be seen from relatively late reclamation of the mosses south of the River Cocker for peat cutting, in the area of Pilling, which was also originally owned by Cockersand Abbey (Middleton *et al* 1995, 80). It is possible that the peat may only ever have been thin and/or confined to the more central area around Moss Lane, giving way to salt marsh toward the coast (Middleton *et al* 1995, 127 and fig 62). Most of the peat had probably been cut or removed by the late 18th century, exposing the pre-peat land surface of silts and clays (Middleton *et al* 1995, 129).

## 5. DESCRIPTION AND INTERPRETATION OF THE SITE

English Heritage's 2008 survey essentially confirms the plan of the conventual buildings as interpreted on the evidence of the excavations in the 1920s and Roper's 1886 survey (Figures 4 and 5), a plan which is fairly conventional (Swarbrick 1923). In these excavated areas, the main contribution of the new survey is to provide a definitive record of the state of the excavated remains and to provide, for the first time, a record of the undocumented distortions to the abbey earthworks caused by the 1920s investigations themselves, specifically the excavation trenches and the dumping of the resulting spoil (see Figures 9 and 15).

The new survey clarifies the form and function of a few earthworks which have not been properly recorded before, some of which are now under immediate threat of erosion. The earthwork remains beyond the conventual nucleus were left intact by the 1920s investigations and the surface evidence is therefore easier to interpret. The new analytical survey of these puts both the conventual nucleus and the threatened remains into the context of the abbey precinct, whose boundaries and layout can now be fairly confidently identified.

### 5.1 Precinct boundaries

As shown in the earthwork plan (Figure 15) and marked on the interpretive plan (Figure 9) a substantial bank, on average 0.3m high and 5.2m wide, almost certainly represents the remains of a precinct boundary. It encloses an approximately rectangular area of 1.08 ha (2.67 acres), measuring approximately 150m long west to east by 100m wide. The bank probably represents the collapsed and/or robbed remains of a wall, but neither the 2008 earthwork survey nor the 2004 geophysical survey offers any absolute proof for this assumption. On the north side of the complex, the bank runs along the crest of a natural slope marking the edge of the eminence on which the Abbey stands. At the north western corner, the bank is poorly preserved due to slight enhancements of the sea wall revetment and the imposition of the post-medieval track that gives access to a slipway. However an out-shot ending in an acute angle change in the line of the boundary hints at the existence of a north-western gateway, sited approximately on the line of the post medieval track. At this point, the boundary appears to have turned southward to run approximately parallel to the western end of the conventual range, thus lying some 10m metres inland from the current sea cliff.

Along the eastern side of the precinct, the bank lies some 40m from the edge of the eminence, just inside the present fence line which was established by the time of the Ordnance Survey First Edition 6-inch scale mapping (Ordnance Survey 1848). On this side, the bank is accompanied by a shallow external ditch, which ends abruptly, apparently in an original terminal, at the north-eastern corner of the precinct. What seems to be a slightly hollowed track, rather than a ditch, here follows the inner side of the boundary. The earthworks of the south-eastern corner have been erased by the expansion of Abbey Farm, but just north of the predicted position of the corner there seems to be an original break in the boundary, which may have been the main entrance into the Abbey precinct. The break is flanked by two approximately rectangular mounds,

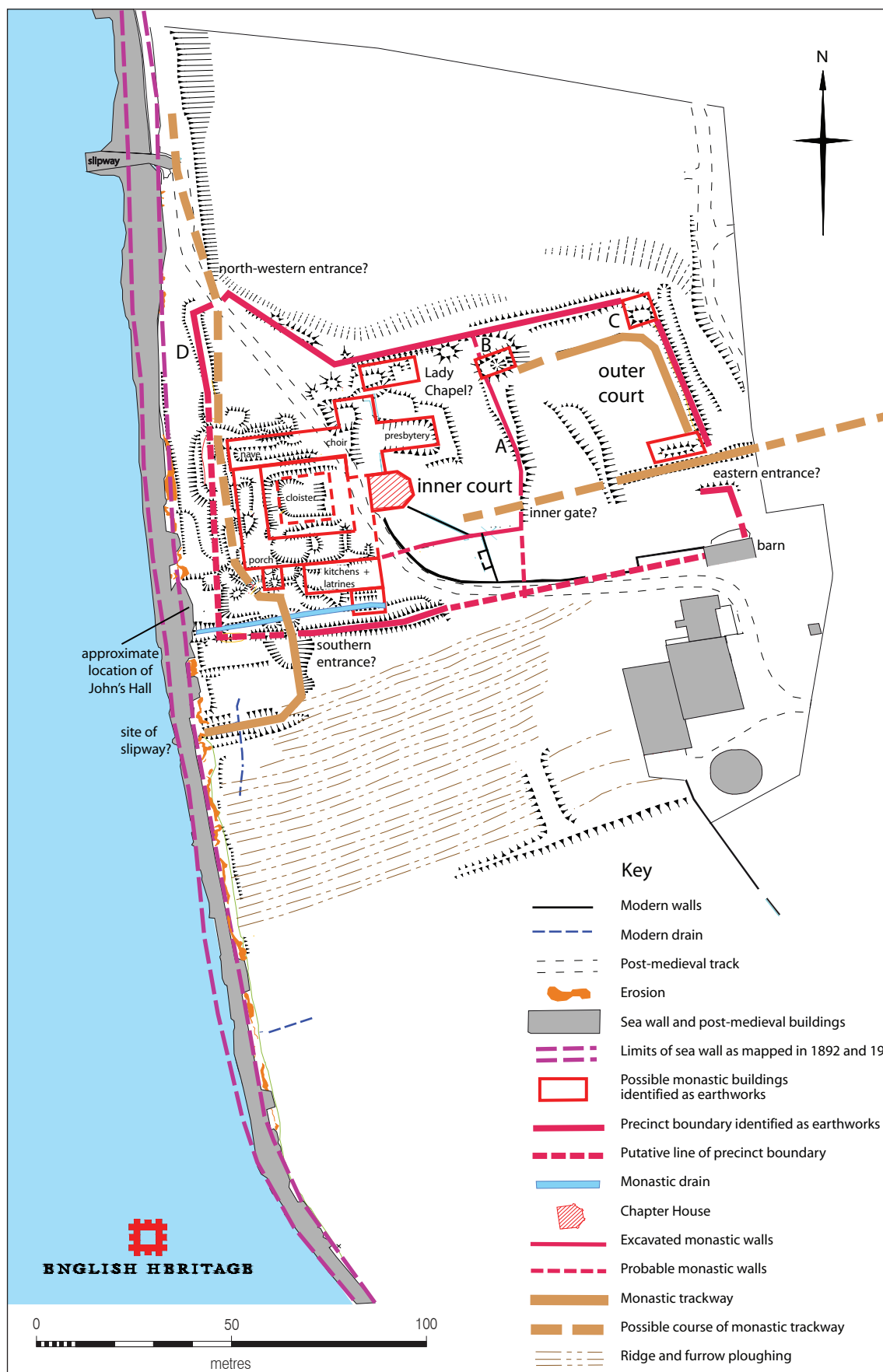


Figure 9. Interpretive plan of the earthworks recorded by the 2008 survey

the more northerly of which could represent the remains of a small gatehouse. What seems to be a hollowed track runs westwards through the break and towards the chapter house. After 35m, it is overlain by what appears to be a farm track of relatively recent origin, beyond which it cannot be traced. As discussed in Section 6, it may be significant that this supposed medieval approach seems to have allowed a view of the octagonal chapter house, which was architecturally one of the most prominent parts of the conventual building range in the monastic period.

The precinct boundary bank is most prominent on the south, where a break opposite a supposed porch in the southern conventual range revealed by the 1920s excavation possibly represents a southern gateway. Again, the boundary is set well back from the edge of the high ground: a gateway here would have given access to a large expanse of the highest ground on the sandstone eminence, which would presumably have been intensively used by the monastic community, given the limited space available. The significance of the separation between the supposed precinct boundary and the edge of the eminence, except on the north side, is discussed further in Section 6.

It is possible that a fragment of the precinct boundary survives to the west of the conventual remains. A short stretch of bank can be seen returning south from the northern entrance. This is overlain by excavation spoil and could represent a boundary that ran very close to the western end of the church and the western claustral range (D on Figure 9). This could have joined up with the feature identified as a precinct boundary to the south of the conventual remains. Although the spoil from the 1920s excavations hides any clear relationships, the alignment suggests that the Abbey was enclosed along this line at some point during its history. The southern stretch of this proposed boundary is discussed further in Section 5.2.

The area immediately east of the church, interpreted in the 1920s as the canons' cemetery, is defined on the east by a bank running north-south (labelled A on Figures 9 and 12). This may also have defined an inner precinct boundary. Due to the disturbance associated with the post-medieval track and adjacent field wall, it is unclear whether the boundary simply subdivided the larger precinct enclosure described above from north to south, or whether it turned to join the south-eastern corner of the building range forming the southern side of the cloister. This possibility is discussed further in Section 6.

## 5.2 Other possible monastic features

A possible rectangular building platform (B on Figure 9) is set into the corner formed by the intersection of bank A and the precinct boundary. A hollow way follows the perimeter of the precinct from the eastern entrance and fades out just short of this building, suggesting that it could represent an important building. It seems unlikely to be an inner gatehouse, for access into the inner court seems to have been gained from the south. Alternatively, the platform could represent a post-monastic structure as it is on a slightly different alignment from the conventual buildings. Another possible small building platform (C) is set into the north-eastern corner of the precinct. The location of a building here would fit with a monastic context, but it is impossible to tell which of the numerous ancillary buildings normally found in an outer court it might be.

On the cliff edge immediately inside the southern precinct boundary lies a linear hollow that almost certainly represents the westernmost end of the monastic drain; this presumably would have been regularly flushed clean by the tide. On the foreshore at the foot of the cliff, a sand-filled cutting in the sandstone outcrop may represent the original outflow of the drain. According to Dennis Kellet, the end of a tunnel identified as the drain was exposed by erosion during a severe storm in 1983, but the exact location of this exposure was not recorded and it was subsequently filled in and consolidated (Kellet 1991, 12). Swarbrick's excavation plan of 1924 shows an excavated section of abbey drain on the same alignment as the linear hollow, approximately 20m inland, the excavated section corresponding to two hollows identified by the current survey. The 1997 GeoQuest geophysical survey (Malim 2004, 27) also detected this feature and interpreted it as the abbey drain. The linear hollow held standing water at the time of the survey, suggesting that the blocking of the drain may have modified the established drainage pattern.

A linear hollow extends southwards away from the supposed southern gateway into the precinct, before turning sharply towards the sea cliff, reaching a maximum depth of 0.5m at the very edge of the cliff. The grounds for interpreting this as a monastic feature are not overwhelming, but the hollow evidently predates post-medieval narrow ridge-and-furrow ploughing, which has distorted its form. The angled descent towards the cliff edge is reminiscent of the form of the modern slipway further north, and it is tempting to interpret the earthwork as the remaining portion of a medieval slipway associated with the abbey. Such a route would have given the canons access to the resources on the foreshore and presumably to a landing place for boats. However, this begs the question as to whether the natural descent beyond the supposed north-western gate, now masked by the terminus of the sea wall, would have offered a more likely route onto the foreshore.

Though the fragments of surviving medieval fabric suggest that beach cobbles were extensively used in the wall cores, some freestone must have been quarried for key architectural elements. While it is not inconceivable that this stone was brought to site from quarries some distance from the abbey, some may well have been quarried on the foreshore, where a considerable depth of the sandstone outcrop was already conveniently exposed. The outcrop exposed on the foreshore displays a few vertical edges which may represent quarrying rather than natural fissures, but the degree of erosion to which the soft sandstone has been subjected over as much as eight centuries makes certainty impossible. The possible slipway described above could have facilitated the transport of quarried stone up from the foreshore.

Immediately west of the main barn of Abbey Farm, fragments of medieval ridge-and-furrow cultivation survive. This could be related to the monastery or could even conceivably predate it. The western terminals of four or five broad rigs are extant, the remaining stretches of which are lost beneath the farm buildings and modern ploughing further east. The surviving stretches display the slight 'reverse-S' curve characteristic of the use of oxen to draw the plough and this is consistent with the existence of a broad headland on which the plough team would have been turned. This is the only medieval ridge-and-furrow ploughing recognisable in the environs of the monastery, though some

of the post-medieval narrow plough rigs to the west display a slight reverse-S curve, which may indicate that some or all of these represent over-ploughed medieval rigs (see Section 5.3).

While ploughing could have been carried out solely to improve the drainage, the community would have required a convenient supply of crops, particularly grain, and few other areas within the monastic holding in the immediate environs would have offered land suitable for arable cultivation. Despite having numerous granges located on better arable land further inland, the canons may well have possessed a home farm. This is perhaps especially likely considering the remote location of the abbey and the difficulty of access, the combination of which may have resulted in the monastery being cut off for lengthy periods. The southern edge of this tract of ploughing is defined by a more prominent bank on the same alignment, presumably a furlong boundary, which seems to have been partially erased by the narrow post-medieval rigs, but seems originally to have extended further westwards.

A building, possibly of late monastic origin, called King John's Hall is mentioned in the 1536 commissioners' report on Cockersand; a structure believed to represent this was excavated in the 1920s. It was identified by Swarbrick (1923, 173) simply as 'John's Hall', drawing on the pre-existing local name for this part of the ruins. Although the metrical accuracy of the 1925 survey is not perfect, the building is depicted as standing immediately adjacent to the cliff edge to the north of the abbey drain. The soil layer above the sea wall here has since been virtually lost to erosion. It is possible that what the 1920s excavators investigated was not actually a building, but a section of the precinct wall, since the wall they exposed is in line with the boundary to the south of the conventual buildings. The excavators may have revealed, without recognising it, an earlier phase of this boundary running right up to the cliff edge, before turning back to the north. This boundary could have been moved further inland as a result of the erosion experienced and documented by the monks, making this part of the wall redundant, with a new western boundary then established at a later date (shown as D on Figure 9). Another possibility is that this represents a building set into the corner of the monastic precinct, contemporary with the existence, if not the origin, of the boundary wall. A possible building in a comparable location (C) has been identified in the north-eastern corner of the precinct.

### 5.3 Post-monastic features

The conversion of the chapter house to a mausoleum by the Dalton family in 1750 apparently involved the consolidation and repair of the west side of the building and the addition of substantial crenellations on the east side, as well as the blocking of the large window openings. This work may have been the context for other changes, as discussed in Section 6.

Based on architectural evidence, Abbey Farm was probably built in the late 18th or early 19th century. Its location in relation to the abbey suggests that it was sited to occupy high ground whilst retaining a respectful separation from the ruins of the Abbey. It has been suggested that it could incorporate part of the abbots lodging (Sherdley and White



1975, 5). However, there is no supporting physical evidence for this and the 2008 survey suggests that the farmhouse would have lain outside the precinct. The development of the farmyard can be traced from historic mapping (Ordnance Survey 1848; 1891; 1913; 1919). Ornate architectural elements from the abbey, and probably other building stones, were incorporated into the northernmost barn in the farmyard. A building was certainly in existence in this location by 1842 (Ordnance Survey 1848) and it may be contemporary with the construction of the farmhouse. The sequence of historic Ordnance Survey maps depicts a series of paddocks encroaching onto the site of the abbey; the footings of some of the walls defining these paddocks survive.

East of the eastern precinct boundary, a well defined hollow way can be traced running northwards from the farmyard towards the edge of the higher ground occupied by the abbey. This appears from the First Edition map to relate to recent field boundaries (Ordnance Survey 1848), which suggests that it was used for farm access in the post-medieval period.

Narrow ridge-and-furrow ploughing, typical of post-medieval agriculture using horses to draw the plough, extends across most of the highest ground, but stops short of the southern edge of the abbey precinct. Two distinct phases of ploughing are evident, most clearly seen on the Lidar plot (Figure 8). The rigs display a slight reverse-S curve, suggesting that they could represent subdivision and continuous re-ploughing of medieval rigs. The post-medieval ploughing extends right to the edge of the cliff and in places appears truncated by the present cliff edge; indicating that some land, or at least some of the soil layer above the sandstone, has been lost to erosion since this ploughing ceased. It is possible that the ploughing itself exacerbated the coastal erosion in this area by destabilising the cliff edge.



## 6. DISCUSSION

With regard to the conventual core of the abbey, the new earthwork survey to a large extent merely confirms the findings of previous investigations, but one new question arises concerning the interpretation of the Lady Chapel. The size and position of this building is slightly odd for a monastic house of this size: a Lady Chapel would normally be slightly smaller and positioned to the east of the chancel or an equivalent position inside the church. Although previously thought to be a later addition, it is possible that the Lady Chapel is positioned to the north of the north transept, with a connecting corridor, because the building actually existed before the church. This could potentially be the position of an earlier chapel on the site, conceivably related to the early hermitage or later monastic hospital, which was renovated in the 13th or 14th century.

An inner precinct enclosure was required by liturgical law to enclose the more sacrosanct and higher status core of the complex; this was generally set within an outer precinct encompassing outbuildings and key plots of land, such as orchards. A boundary which can be interpreted as a precinct boundary can now be confidently identified probably pierced by gateways on the north-west, south and east (probably the main approach, as discussed below). However, there remains some uncertainty over whether this enclosure represents the inner or outer precinct. If it was a small outer precinct, an even smaller inner precinct, tightly enclosing the conventual core, may have been defined by bank A, possibly with a gateway between the two enclosures on the south side, represented by the excavated porch. Alternatively, if it was an inner precinct, the outer precinct may have been defined by the edge of the natural eminence; outer precinct boundaries were not always walled and therefore cannot always be securely identified (Fergusson 1990, 47).

Though there is some evidence of a small building directly to the north of the supposed eastern gateway, there is no incontrovertible evidence of a substantial gatehouse, as can be seen at larger monastic sites, to strongly suggest that the adjoining boundary belonged to an outer precinct. As discussed above, a less likely candidate for a small gatehouse is building B, although its location at the corners of the inner and outer courts would not be conventional. While the extents of the natural eminence may have effectively defined the outer precinct boundary of the abbey in the early years of its existence, the drainage of the marshes inland may eventually have made an artificially defined boundary necessary. With this in mind, it is possible that the extents of the precincts were modified in the course of the abbey's existence, and that both options were true at different dates. It is possible that a boundary defined an inner precinct, with the limit of the natural eminence marking the extent of the outer precinct. Alternatively, it is possible that the bank marks the original outer precinct boundary, and that this was expanded as the community expanded and grew in wealth. On the other hand, land reclamation by the abbey may have made the distinction between dry land and marsh redundant during the lifetime of the monastic community.

Two small buildings (B and C on Figure 9), detached from the main conventual buildings, have been identified within the precinct. The possibility that these were short lived agricultural, industrial or domestic buildings that were constructed after the suppression

of the monastery cannot be ruled out. However, it seems more likely, from their siting in direct relationship to nodal points in the monastic boundaries that they are indeed of monastic origin. They therefore probably relate to small scale industrial or agricultural activity carried out by the community; for example barns, storehouses, kilns or brew houses. John's Hall may have been another such building, although its name (assuming it has been correctly identified) implies a more domestic function such as guest accommodation.

The well-defined track leading into the abbey from the east may have been the main medieval approach route and may also have provided access to the resources offered by the moss. Access from the north, along the ridge of higher ground followed by the line of the current sea wall, may also have been possible, although any continuation beyond Chapel Hill is currently unproven (Figure 7). The inaccessibility of the abbey is attested by a record of a visit by Bishop Redman in March 1496-7 on behalf of the Abbey of Premontre. He asked to be met at Lancaster by 'an experienced man to lead him through the dangers of the sea' (Swarbrick 1923, 164). It is possible that this refers to navigation of the salt marsh to the north of the abbey, the peat moss to the east or perhaps indicates that he was expecting to make the final stage of his journey by boat.

It is possible that Moss Lane (Figure 2) follows part of a medieval causeway, since it is thought to represent a 12th-century boundary, although this interpretation is unproven (Middleton *et al* 1995, 128). A drainage pattern pre-dating the post-medieval enclosure can be seen on the Lidar imagery and it is possible that these meandering ditches (presumably canalised streams) served as medieval land boundaries. If this is the case, these are centrally divided by Moss Lane, suggesting that it could form part of a wider system of 12th-century boundaries within Thurnham Moss.

Monasteries were usually entered from the west, highlighting the most ornate and impressive aspect of the church's architecture at the same time as preserving the sanctity and privacy of the church's chancel end. While this was obviously impossible at Cockersand, the west front of the church would undoubtedly have been an impressive landmark seen from the sea, and it is likely that access to the site by boat was possible, if not the norm. The fact that the chapter house would have been conspicuous to visitors approaching from the east could explain why such a relatively small monastic community built such an elaborate octagonal building with large windows (presumably with ornate glasswork), when Premonstratensian canons usually favoured simple rectangular chapter houses (Marshall 2001).

Assuming the main approach to the abbey was from the east, the external ditch on this side of the precinct may have been intended to give additional visual prominence to the precinct wall facing the approach; this would account for its abrupt end at the north-east corner of the enclosure. If building C took the form of a corner tower, this could also have made an important contribution to the architectural pretension of the abbey's eastern frontage.

The functions of the possible entrances to the south and the north-west are worth considering. The entrance to the south would have given access to the expanse of

relatively dry high ground on this side. Indeed, the siting of the abbey at the extreme north-western tip of the sandstone eminence may have been deliberately intended not only to occupy the highest ground, but also to ensure that the agricultural land required to support the community was efficiently concentrated as a single block on the remaining high ground. The new survey suggests that the southern entrance may also have given access to a previously unrecognised slipway leading down to the foreshore, and presumably to a landing place. The supposed north-western entrance may have given access onto a causeway, incorporated into the modern sea wall, leading to the nearby eminence of Chapel Hill and the fishing baulk recorded there. The existence of a second slipway here, effectively a precursor of the post-medieval one that remains in use, cannot be ruled out. Indeed, this location, at the end of the sandstone outcrop where the ground descended naturally, seems at face value very plausible. If this was the case, an additional southern slipway may have been required in part for liturgical reasons, to ensure that any important visitors who arrived by boat could enter through the symbolically appropriate south door. Although sea travel was not generally popular amongst the medieval nobility, its unpopularity has probably been overstated. The predominance of road transport in the itineraries of medieval nobles was usually a consequence of the location of their manors and castles: when they needed to travel by ship, they were generally willing to do so (Friel 1995).

The conversion of the chapter house to a mausoleum by the Dalton family in 1750 could also be the context for the loss of the substantial portions of the church and cloister shown as standing remains on Buck's 1727 engraving, which were missing by the time the First Edition 6-inch scale map was surveyed in 1842 (Ordnance Survey 1848). It seems reasonable to infer that the ruins may have been robbed for stone to repair the chapter house and block up its large windows. The reasons behind the selection of this particular building for re-use as a mausoleum have not been explicitly addressed by previous research. The Dalton family were Catholic and it is plausible that they were attracted to the symbolism attached to the chapter house of a pre-Reformation religious house. Thurnham Hall, the Dalton residence, also occupies some of the highest ground in the area, approximately 20m above sea level, so the chapter house would almost certainly (prior to the imposition of 19th-century tree plantations and the decrease in hedge management over the course of the 20th century) have been visible across the intervening marshland.

## 7. COASTAL EROSION ISSUES

### 7.1 Assessing the rate of past coastal erosion

During the 2008 survey, evidence of active erosion was recorded along much of the soil layer above the facing wall of the sea cliff, mostly in the form of minor landslips. Although this can primarily be attributed to wave action, it may have been exacerbated by cattle rubbing themselves on the edge of the turf line, progressively exposing the soil to further wave erosion. Documentary evidence, quoted in Section 2, demonstrates that coastal erosion was a threat to the community at Cockersand as long ago as the 14th century. There are no reliable indicators of the amount of land lost to coastal erosion since the Middle Ages, but the 2008 survey has brought to light a few pointers, each of which is associated with its own qualifiers:

- The documented extent of the monastic lands suggests that the current sea wall, which superficially appears to be of 18th- or early 19th-century date and has apparently re-used stone from the abbey buildings, may fossilise the line of a medieval sea defence, perhaps also used as a causeway to access the abbey's holdings to the north.
- In the light of the inference that the precinct was sited carefully to fill the available space and maximise the dry ground available for cultivation, the observation that the western boundary of the precinct appears to have run some 11m inland from the current cliff edge would seem to suggest that in general relatively little ground (at most, only



*Figure 10. View south along the sea wall showing areas of erosion at its base*



a few metres) has been lost to coastal erosion since the abandonment of the abbey. However, there has clearly been some significant localised erosion, as can be seen by the loss of John's Hall.

- What may be the upper part of a medieval slipway is truncated well above the current level of the foreshore, suggesting that 8-10m of the slipway may have been lost; this may be several metres more than the figure for actual land loss, if the slipway ramp protruded well down onto the former beach (as modern slipways usually do)
- The outflow of the monastic drain, which was re-exposed by coastal erosion in 1983, may have extended as much as 3.7m from the foot of the seawall, to judge from traces of a cut into the sandstone outcrop (Figure 15). However, depending on the form of the end of the outflow, this figure does not necessarily represent either a minimum or a maximum loss.
- A slight bank along the top of the sea cliff may relate to a relatively early enhancement of the sea defences (Figure 11). Alternatively, this may be a plough headland or field boundary, possibly related to medieval or post-medieval ploughing.
- The eastern edge of a headland associated with the post-medieval ridge and furrow ploughing can be discerned, but the western edge appears to have been lost. Headlands associated with horse-drawn ploughing are usually fairly narrow and the



*Figure 11. View southwards along the facing wall of the sea cliff, showing landslips caused by wave action*

western edge may originally have coincided with the line of the top of the wall that currently faces the sea cliff. In other words, the ploughing may have continued after the seawall had been built. It follows that around 3m of the soil above the top edge of the facing wall have been lost since the cessation of ploughing, which may have been as recently as the early 20th century.

- Comparison of the 2008 survey with the 1920s excavation plan shows that the site of what was identified as John's Hall has now largely eroded away, with whatever remains now buried under poured concrete. At this point, the soil above the facing wall has eroded approximately 5m inland (Figure 13). If the exact form and function of this building could be ascertained and a size estimated, a more precise idea of the amount of land lost to erosion could perhaps be estimated.
- Comparison of the 2008 survey with the 1975 close-interval contour survey of the site approximately shows the amount by which the edge of the soil layer above the facing wall has eroded back over that period (Figure 13). Although the facing wall itself has obviously not retreated, landslips above the top of the wall have caused the loss of perhaps up to 3m of archaeologically sensitive ground. Comparison with the 1925 plan also shows change, particularly in the area of John's Hall and the abbey drain; this is highlighted as a site of erosion on the 1975 plan, supporting the interpretation that it has been worst affected.

In summary, it seems possible that the line of the current sea wall to the north of the abbey may follow an earlier causeway or sea defence, suggesting that the line of the shore has remained virtually unchanged since the monastic period. On the seaward edge of the eminence on which the abbey sits, the few indicators that can be identified suggest that up to 4m of land, but possibly less, may have been lost beyond the foot of the current sea wall, that is, between the medieval period and the time when the sea wall was constructed. The present facing wall could have replaced a similar wall of medieval date (possibly surmounted by the precinct boundary wall), but if so, this medieval precursor has now been concealed or lost to erosion. The existence of some form of wall can be inferred from the Relaxation granted by Pope Gregory in 1372 to penitents who would give alms for the repair of the monastery, 'which was stated to be so near to the sea that the walls built for the preservation of its buildings were being worn away and destroyed by the waves' (Swarbrick 1923, 165).

On the other hand, the last two indicators listed above seem to indicate that approximately 3m of the soil layer above the facing wall has been eroded back since the 19th century, with one instance of a localised loss of around 5m between 1927 and the present. This apparent increase in the rate of erosion is consistent with the effects of sea level rise, but also needs qualification. In both cases where indications of a sharp increase can be identified, it is possible that human activity (respectively ploughing and archaeological excavation) contributed greatly to the destabilization of the soil layer. Consideration of the cliff edge as depicted on First Edition 25-inch scale map, surveyed in 1888 (Ordnance Survey 1891), which offers a more reliable indication than the earlier 6-inch scale map, shows that while it has retreated in the locality of John's Hall, elsewhere it has changed little since that time.



## 7.2 The significance of the remains under imminent threat

Most of the core of the abbey, whose limits are better understood as a result of the 2008 survey, is not under immediate threat, the western precinct boundary apparently lying more than 10m from the current cliff edge. However, this boundary may well have replaced an earlier boundary lying further to the west, which can no longer be identified through earthwork survey, if it survives at all. The site of John's Hall is under immediate threat; this medieval building is clearly of significance, although its form, function, date and possible relation to the monastic precinct boundary remain poorly understood. If the building was an integral part of either the recognised precinct boundary or a lost precursor, it follows that part of the core of the complex has already been lost and other sensitive remains are under immediate threat.

The terminus of the abbey drain, one of the principal features which certainly projects beyond the limit defined by the precinct boundary, has already suffered from erosion. However, it is likely that a relatively well preserved stretch survives below ground further back from the cliff edge. The possible medieval slipway, not having been identified before English Heritage's 2008 survey, has seen no previous investigation but, if proven, is arguably of considerable significance, both because such features are rare in a monastic context and its existence in this case relates closely to the coastal location of the abbey.

Fragments of medieval pottery noted in the eroded face of the soil layer above the sea wall revetment confirm that there was activity in the narrow strip between the western



Figure 12. View of remains around the chapter house, showing conservation work in progress



precinct boundary and the current cliff edge, possibly reflecting a retreat of the boundary on this side. The reference to bones eroding out of the soil layer (Swarbrick 1923, 165) also confirms the existence of archaeological deposits in this most threatened zone, perhaps without associated structures but possibly pre-dating the monastic remains whose plan is more clearly visible from the earthworks. However, despite earthwork and geophysical survey, the extent and nature of that activity remains only dimly understood.

### 7.3 Monitoring change

The survey accurately records the position of the cliff top as at August 2008. Each point recorded using survey-grade GPS equipment is fixed to within 2cm horizontally and 5cm vertically (see Section 8). Points were taken at intervals of between 0.2m and approximately 4m along the cliff edge. However, it is important to stress that the survey is primarily an interpretive survey of the archaeological remains and consequently not of sufficiently high resolution to monitor erosion at the micro scale.

It is also important to emphasise the fact that comparison with all surveys made prior to 2008, including the the 1975 topographic survey (Figure 13), while demonstrating the general erosional trend, does not give an absolutely comparable representation of change, due to the different aims and methods of each survey.

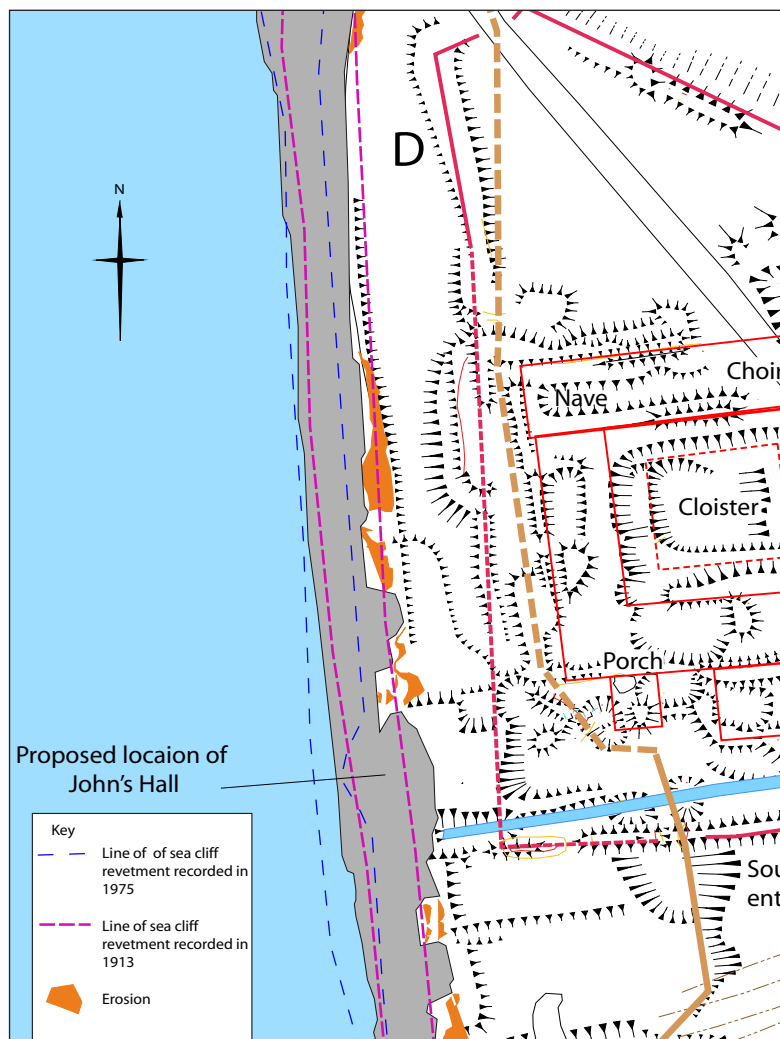


Figure 13. Comparison of 2008 and 1975 surveys and 1913 OS map, showing mapping of the sea cliff revetment over the past 90 years.

## 8. METHODOLOGY

The earthwork survey was carried out and located within Ordnance Survey National Grid, using survey-grade Global Positioning System (GPS) equipment. A Trimble R8 / 5800 GPS receiver was used to observe one permanent base station using a VRS Now solution to allow the local divorced survey to be converted to National Grid coordinates. This base station (station 1) was permanently marked by a brass rivet fixed into a sandstone wall (see Figure 14). Two 5800 rover GPS sets were then used to pick up further control points and archaeological detail across the site.

All data were downloaded and computed using Trimble Geomatics Office v1.63 and Trimble Geosite V software and transferred into AutoCAD 2007 to produce a plot for rapid graphical completion and annotation. AutoCAD 2007 and Key Terra-Firma software were then used to produce a final hachured plan of the survey area. ArcGIS software was used to produce a 3D Digital Terrain Model (DTM) with 2m Lidar data from the NextPerspectives website <http://www.geostore.com/PGA/WebStore> to allow the local historic topography to be reconstructed.

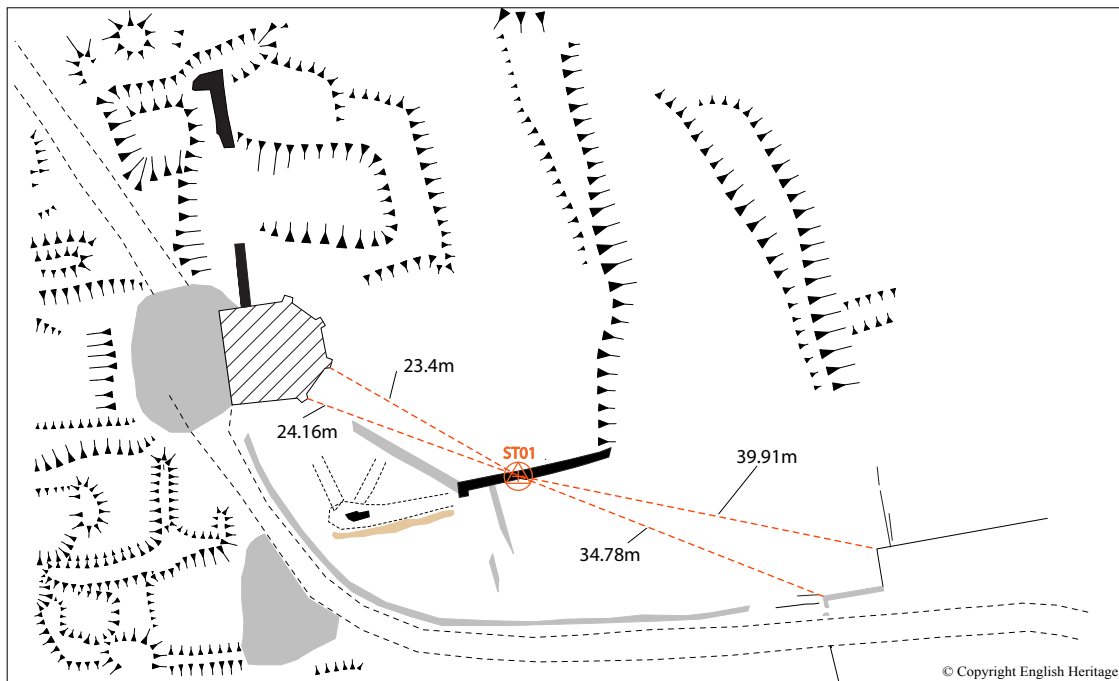


Figure 14. Location of permanently marked survey station at National Grid Reference 42729.342 453749.824

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# Cockersand Abbey Lancashire

## Key

- Archaeological slopes
- Areas of Swarbricks 1920s excavations
- Areas of spoil relating to 1920s excavations
- Natural slopes
- Standing monastic walls
- Standing buildings
- Fence lines
- Sandstone outcrops on foreshore
- Ridge and Furrow ploughing
- Modern drainage
- Areas of erosion
- Tracks and access
- Likely location of outflow of monastic drain
- Edge of foreshore
- Modern walls

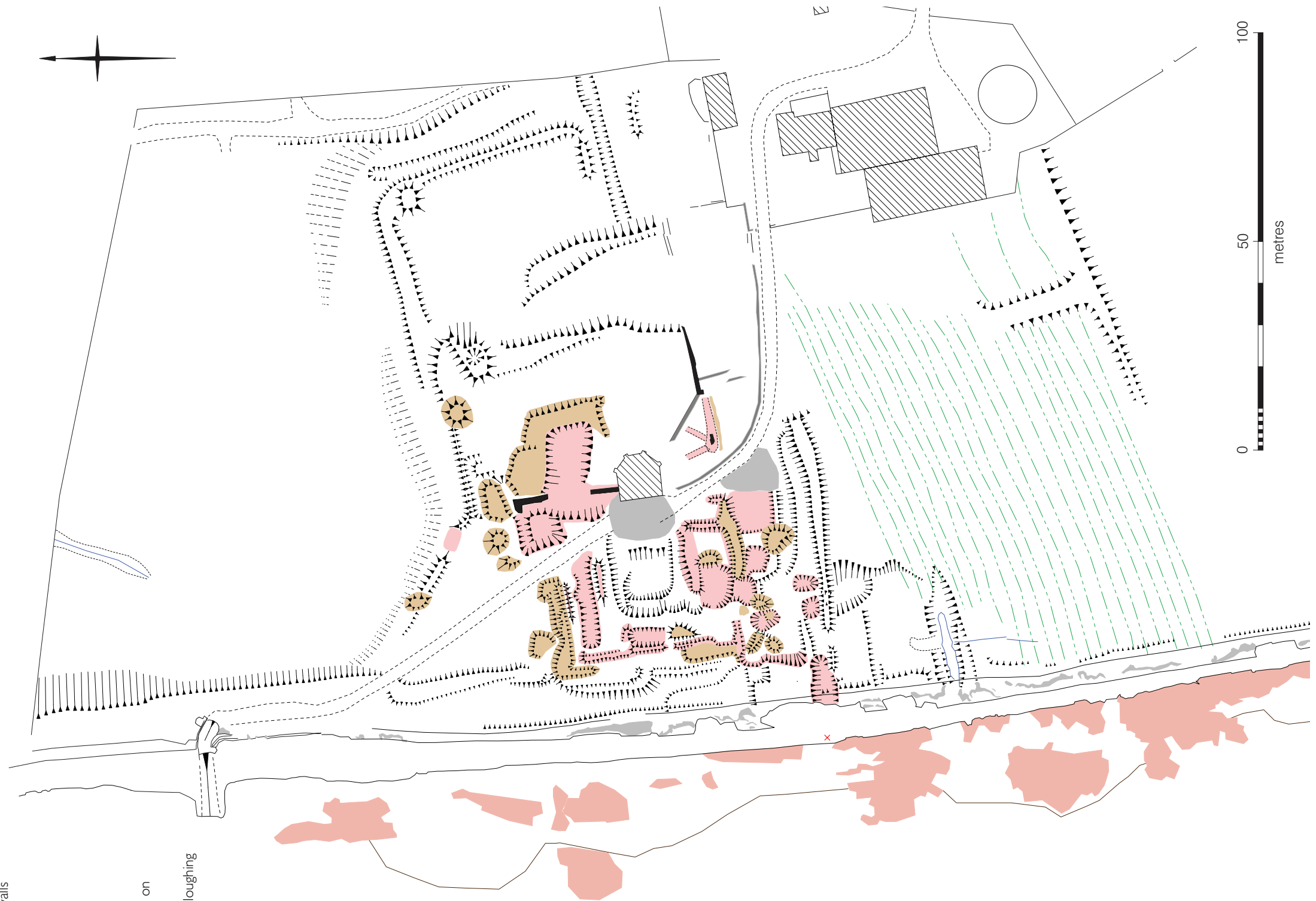


Figure 15 Hachured earthwork plan of  
Cockersand Abbey, Thurnham Lancashire



## ENGLISH HERITAGE RESEARCH DEPARTMENT

English Heritage undertakes and commissions research into the historic environment, and the issues that affect its condition and survival, in order to provide the understanding necessary for informed policy and decision making, for sustainable management, and to promote the widest access, appreciation and enjoyment of our heritage.

The Research Department provides English Heritage with this capacity in the fields of buildings history, archaeology, and landscape history. It brings together seven teams with complementary investigative and analytical skills to provide integrated research expertise across the range of the historic environment. These are:

- \* Aerial Survey and Investigation
- \* Archaeological Projects (excavation)
- \* Archaeological Science
- \* Archaeological Survey and Investigation (landscape analysis)
- \* Architectural Investigation
- \* Imaging, Graphics and Survey (including measured and metric survey, and photography)
- \* Survey of London

The Research Department undertakes a wide range of investigative and analytical projects, and provides quality assurance and management support for externally-commissioned research. We aim for innovative work of the highest quality which will set agendas and standards for the historic environment sector. In support of this, and to build capacity and promote best practice in the sector, we also publish guidance and provide advice and training. We support outreach and education activities and build these in to our projects and programmes wherever possible.

We make the results of our work available through the Research Department Report Series, and through journal publications and monographs. Our publication Research News, which appears three times a year, aims to keep our partners within and outside English Heritage up-to-date with our projects and activities. A full list of Research Department Reports, with abstracts and information on how to obtain copies, may be found on [www.english-heritage.org.uk/researchreports](http://www.english-heritage.org.uk/researchreports)

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