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An archaeological assessment of earthworks at Byland Abbey, North Yorkshire

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1. Introduction

A field visit was made by English Heritage archaeological investigation staff to Byland Abbey in September 2004 at the request of David Robinson, Head of Properties Research, English Heritage. The main purpose was to assess previous interpretations concerning the abbey's water supply in order to inform future site display strategies.

It is widely accepted that both Byland Abbey and Newburgh Priory, 2.5km to the south, undertook an ambitious engineering programme in the 12th and 13th centuries to direct water to their respective sites. This involved diverting several streams, the construction of large dams and ponds and the provision of long sections of leats (McDonnell 1981, 24-7). Evidence of this engineering occurs across a wide area, stretching up to several kilometres to the west of Byland. However, the field visit was restricted to a walk-over assessment of earthwork remains in the fields within, and adjacent to the Byland Abbey precinct, which include features previously interpreted as ponds. This assessment indicated that none of the previous accounts are entirely accurate in their interpretation of the landscape evidence, and that the plan showing the monastic water supply in the present English Heritage guidebook was in need of revision (Harrison 1999, 22). In particular, most of the ponds shown on the plan are either too large or probably did not exist at all. A new insight to emerge from the field visit is the possibility that some of the earthwork remains previously interpreted as monastic are possibly part of a post-Dissolution garden layout. The historical sources indicate a house of some status at Byland after the Dissolution, which could provide a context for the creation of a garden.

The abbey is recorded in the National Monuments Record under entry SE 57 NW 1 and earthworks examined during this field assessment are grouped together in entries SE 57 NW 14 and SE 57 NW 101. Entry SE 57 NW 14 deals with features recorded in published accounts (McDonnell and Everest 1965; McDonnell and Harrison 1978) whilst entry SE 57 NW 101 details a number of new features plotted in 1993 at 1:10 000 scale from aerial photography by Kershaw as part of the RCHME Howardian Hills project (NMR No. SE 57 NW 101 - Authority 1). The plot of the earthworks is somewhat schematic given the scale of the plotting, but is nevertheless a useful guide for locating features on the ground.

The following report combines the results of the field assessment of the earthwork remains with an evaluation of previous accounts published in the *Ryedale Historian* (McDonnell and Everest 1965; McDonnell and Harrison 1978) and in the *Borthwick Papers* (McDonnell 1981) and with Kershaw's unpublished interpretation of the aerial photographic evidence (NMR SE 57 NW 101 – Authority 1). More recently, a privately produced paper on the monastic waterworks has appeared (Banks 2001). Whilst Banks provides the most detailed description of the field remains, much of his interpretation is open to question and is not supported by the earthwork evidence, whereas the earlier accounts are generally more reliable, if less descriptive.

The following account is structured around the plan in the current English Heritage guidebook (Harrison 1999, 22). The headings prefixed by letters in brackets refer to features on Figure 1 (the existing guidebook plan). Figure 2 is a reduced copy of a survey of earthworks to south-west and south of the claustral range published at 1:2 500 scale in 1978 (McDonnell and Harrison 1978). Figure 3 is a revised version of the guidebook plan based on the field observations contained in this report.

2. Description and Discussion

(a) The north-west pond

This pond is the lowest of a line of 6 or 7 ponds in the valley to the north-west of the abbey. The outline of the pond is traceable as a slight depression with the water retained on the east by a very wide and high, flat-topped dam which also served to define the precinct boundary. The west side of the dam is near vertical and was revetted with masonry, some of which still survives (McDonnell 1981, 32). The outline of the pond and the position and size of the dam are shown accurately on the guidebook map (Harrison 1999, 22).

The dam seems large in comparison to the size of the pond and this may indicate that as well as retaining water, the dam was constructed high enough to create a level route across the valley for carts passing between the abbey and its properties to the north-west around Old Byland (McDonnell and Everest 1965, 37). The use of the dam as a route seems entirely plausible as the outer gate of the abbey was situated at the south end of the dam and a number of hollow ways start close to the north end of the dam and ascend the side of the valley. The size of the dam might also reflect a degree of ornamentation, designed to impress visitors approaching down the valley towards the outer gate of the abbey. It is of

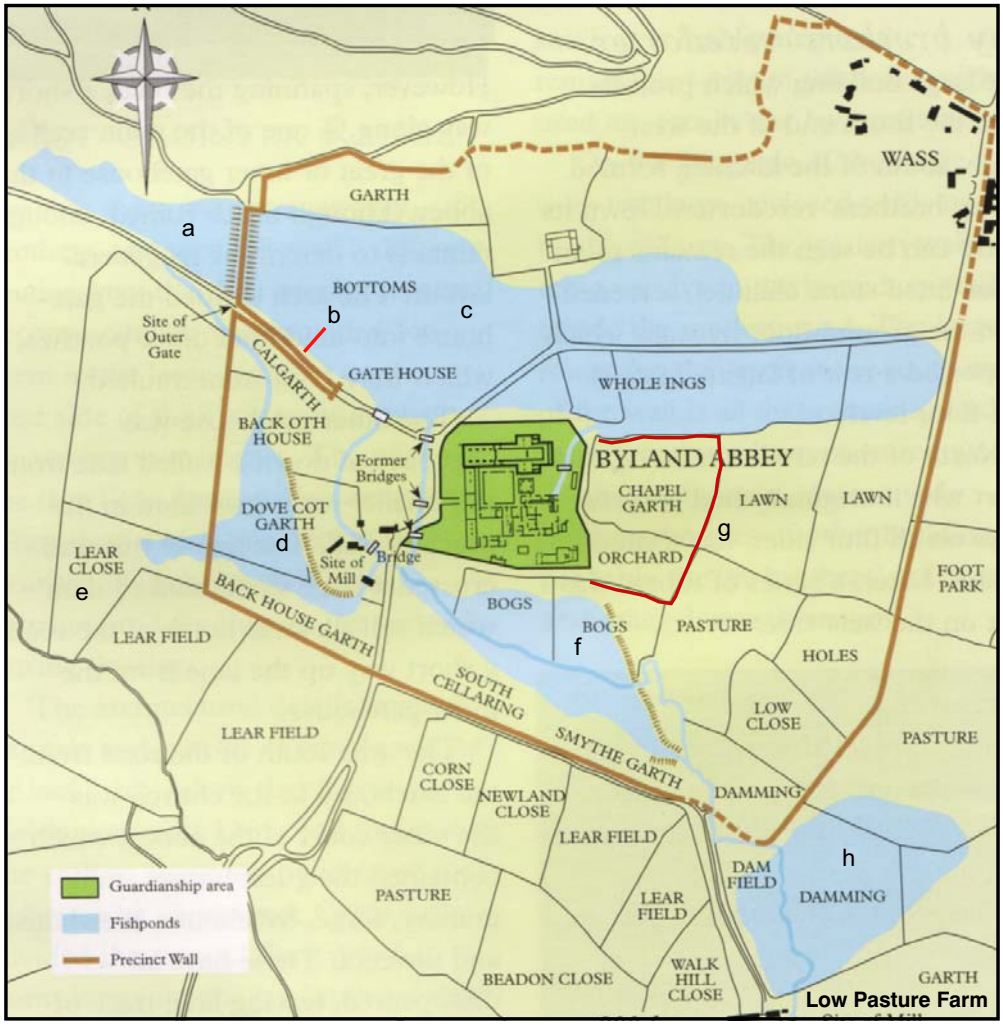

Figure 1
The guidebook plan (Harrison 1999, 22)

course possible that a much simpler monastic dam was enlarged and enhanced to make it more of an ornamental feature after the Dissolution.

(b) The precinct boundary

Although it was not possible to inspect its entire length, the field evidence generally supports the outline of the precinct boundary as depicted in the guidebook apart from one aspect (Harrison 1999, 22). The plan shows the western boundary turning eastwards for 200m to flank the road leading up to the standing gatehouse. There is no surface evidence that the precinct boundary turned this way and instead it is more likely that the gatehouse was an inner entrance to the abbey and therefore separate from the outer precinct boundary.

(c) The north pond

There is no evidence to support the existence of the large pond to the north of the abbey, extending right the way across from the western precinct boundary to the precinct boundary on the east, as shown on the English Heritage guidebook plan (Harrison 1999, 22). The natural topography is such that a long, high dam would have been needed on the south side to prevent the church and claustral range from being flooded and there is no ground evidence for such a feature. Another reason to dispute the existence of such a large pond is the fact that that there is a rectilinear layout of levelled banks to the north of the abbey. These were first recorded by Kershaw who interpreted them as causeways and a fishpond (NMR No. SE 57 NW 101 - Authority 1) but they are almost certainly a series of enclosures. They are co-axial with the claustral range and could well be monastic in origin, possibly enclosing domestic workshops, cultivated plots or animal pens. The presence of these enclosures argues strongly against the idea that the whole area was flooded as a pond.

Rather than a single large expanse of water, the field evidence suggests there may have been two much smaller ponds to the north of the abbey.

- A marshy area to the north-east of the church could define a former pond fed by watercourses from the high ground to the north. A channel is visible on the ground from the west side of the pond, heading towards the line of the reredorter drain. This supports the possibility that the marshy area represents the remnants of a reservoir pond for the main abbey water supply.

- Immediately east of the large dam forming part of the western precinct boundary is a level, easily-flooded area extending as far east as the standing gatehouse. It stretches to the foot of the escarpment to the north and to the road to the abbey to the south. Although this level area may be partially natural, it is equally possible that this was engineered to create an ornamental lake beside the approach to the abbey, possibly after the Dissolution.

(d) The south-west pond and associated features

A prominent, flat-topped embankment in a pasture field to the south-west of the abbey church has been interpreted as the remains of a mill dam whilst other features to its west are thought to represent the limits of the associated pond. A survey plan of these remains

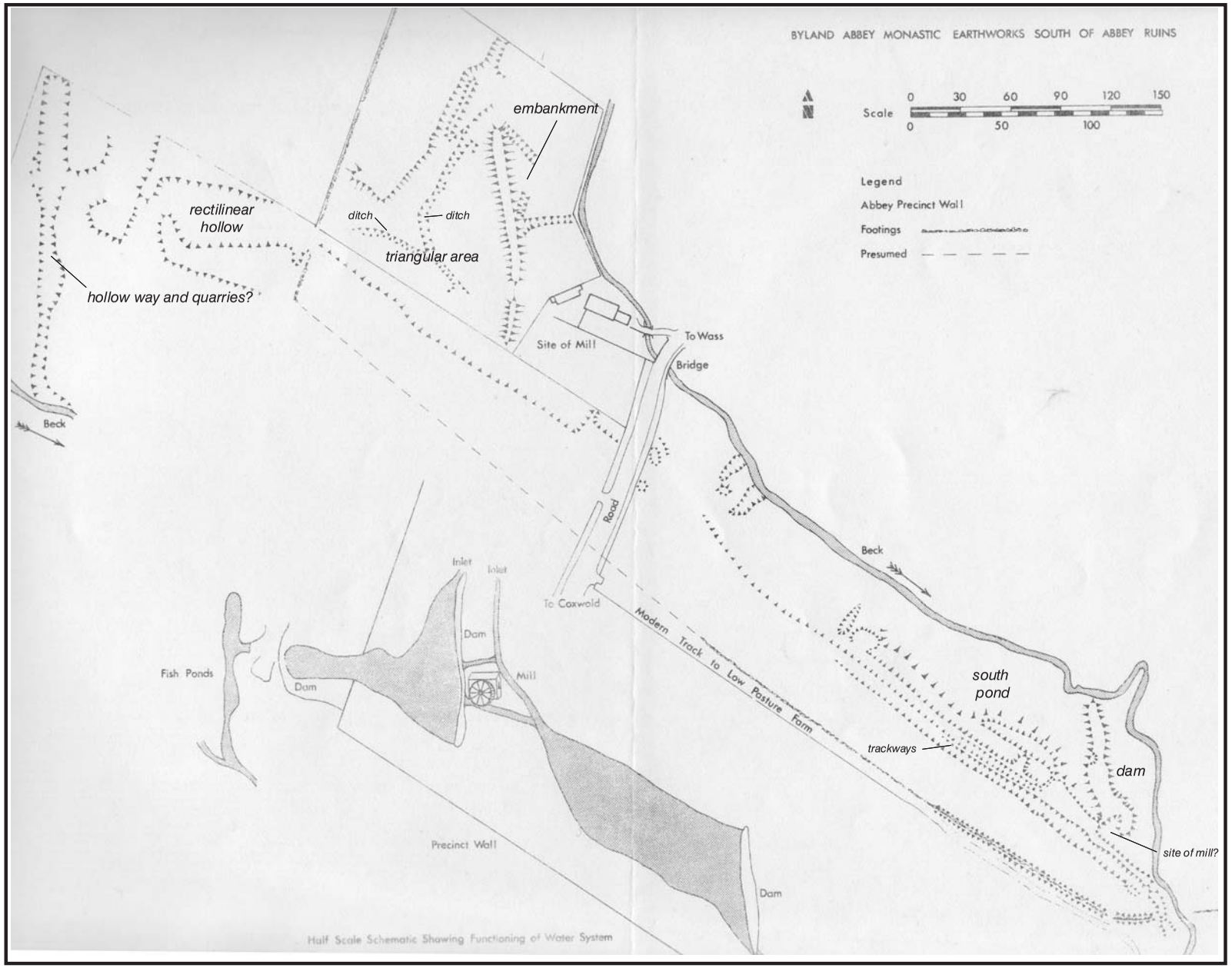

Figure 2 *Earthwork survey of the area to the south and south-west of the claustral range reduced from 1:2 500 scale published original (McDonnell and Harrison 1978)*

has been published (McDonnell and Harrison 1978, 56; *see* Figure 2) whilst the large dam and associated pond is depicted on the current guidebook plan (Harrison 1999, 22).

The embankment is around 140m in length. It forms the north-east side of a large triangular area interpreted as part of the pond, the north-west and south-west sides of which are defined by lesser, linear scarps. The south-west side extends for a further 80m south-eastwards beyond the triangular area as a prominent north-east facing terrace. The only significant features in the triangular area are two narrow ditches. One is aligned from north-east to south-west and joins with the second ditch running parallel to the south-west side of the triangular area. Both look quite recent and may indicate the course of buried pipes. Immediately beyond the south-west side of the triangular area, Kershaw identified a long mound as possible building platforms or a revetment for the mill pond (NMR No. SE 57 NW 101 - Authority 1). The feature was not mapped in 1978, but on the ground it looks more like two discrete dumps of spoil rather than building platforms.

The south-west apex of the triangle opens out into a large, rectangular, flat-bottomed hollow cut out of rising ground to the north and south and with an embanked west end. The hollow is thought to represent the western continuation of the pond and is aligned at right angles to the large embankment. This suggests the two features are part of the same layout, but the hollow cuts across the ploughed-down stony bank representing the monastic precinct boundary and therefore is most probably post-Dissolution in date.

The evidence for the existence of a large pond is far from secure, principally because there is no indication of how it could have been supplied with water. A number of suggestions have appeared in print about how water reached this area, but none stand up to careful scrutiny on the ground.

- The current guidebook plan shows a leat entering the north side of the pond from the valley to the north (Harrison 1999, 22). This is impossible because there is an intervening ridge of high ground.

- Harrison has earlier claimed that the pond was supplied from the east by a conduit passing under College Farm yard issuing into the pond at the northern end of the dam (Harrison 1978, 56). However, this is hardly possible because the ground rises in this direction.

- Banks has suggested that the pond was supplied by a leat from the large pond at Oldstead Grange 2km to the west. (Banks 2001, 28). He recognises that the water would have had to have been carried in a cutting as much as 18 feet (5.4m) deep because of the intervening high ground. Banks explains the absence of any earthwork evidence for such a cutting as a consequence of soil creep on the hillside from later ploughing having buried the feature. This does not stand up to scrutiny on the ground and therefore the idea that the pond was supplied by a leat from the west has little to recommend it.

• Another possibility is that water could have come from a now-vanished spring or from surface run-off. This suggestion has been made in relation to the group of small ponds mentioned above to the west of the main pond (see also below) but such a source is unlikely to have been sufficient to create the large pond that has been suggested here. There is also no indication on the surface, such as boggy ground, that water naturally gathers in the area of the suggested pond.

A considerable doubt exists, therefore, over the identification of a large pond at this location because of the impracticality of the water supply. A medieval date is also difficult to sustain given that one of the component features of the supposed pond (the rectilinear hollow) cuts across the precinct boundary and therefore a post-Dissolution date seems more likely. In the light of these two observations alternative explanations should be considered.

• It is possible that the features indicate an intention to construct a pond as an ornamental feature after the Dissolution but that the project was abandoned before the engineering to bring water to it was put in place. The two mounds immediately beyond the south-west side of the triangular area could be heaps of spoil left when the landscaping of the pond was abandoned.

• The embankment might not be a dam but could have functioned as a viewing terrace forming part of a garden layout. That the field containing it was historically known as 'Dovecot Garth' (Harrison 1999, 22) lends some weight to this suggestion. The triangular area to the west of the embankment and the rectilinear hollow at the south-west apex could define further components of the suggested garden.

(e) The hollow way and quarries

To the west of the rectilinear hollow referred to above is a wide linear depression formed by a number of inter-linked hollows which descend the natural slope from north to south (Figure 2). The features have been interpreted as a series of small monastic ponds, possibly hatcheries with water supplied either by a vanished spring or through surface run-off (McDonnell and Harrison 1978, 56). They do not appear on the English Heritage guidebook plan (Harrison 1999, 22). More recently, Banks has interpreted the field remains as a millpond with water retained by a timber sluice that has left no visible surface remains (Banks 2001, 32-3). He identified a mound to the west of the linear depression as the possible site of the mill. *Contra* McDonnell and Harrison, he suggests that water was fed to this pond from the north by his supposed leat from Oldstead Grange (*see* (d) above). However there is no convincing ground evidence for this leat.

Interpretation of this feature either as one pond or a flight of smaller ponds has little to recommend it. The feature slopes so steeply to the south that it would have required one or more large dams to retain water on the slope and there is no evidence for any such arrangement. Alternatively the feature may be a hollow way, although it is possible that parts have been shaped by surface quarrying.

(f) The south pond and dam

The depiction in the English Heritage guidebook of a large pond to the south of the abbey ruins retained by a long dam on its east side (Harrison 1999, 22) is not supported by the field evidence. On the ground (and as surveyed in 1978; *see* Figure 2), the dam is around 100m shorter on the north than the earthwork depicted in the guidebook. Consequently, the body of water behind it could not have been anywhere near as large as the guidebook plan shows. The pond probably did not extend any further north than the present stream channel whilst the natural terrain dictates that it could only have been around half the length of the pond shown on the guidebook plan.

Documentary evidence indicates the abbey had a mill, 1km to the south at Low Pasture Farm, and it has been suggested by Harrison that this was the millpond that served it (McDonnell and Everest 1965, 36; Harrison 1978, 56). However, a probable mill site is indicated by a level platform at the south end of the dam. This therefore calls into question the role of the pond in supplying water to a mill much further away at Low Pasture Farm. It is conceivable though that one mill site was a replacement for the other.

There is no evidence to support Banks's identifcation of a series of smaller ponds used for dyeing cloth to the south of the abbey in addition to the main pond mentioned above (Banks 2001, 39). There is earthwork evidence for only one small pond at the probable west end of the main pond. This is not shown on the 1978 survey but was noted by Kershaw as a rectangular embanked enclosure (NMR No. SE 57 NW 101 - Authority 1).

Banks also asserts that water was fed to the ponds by two leats on the slope to the south and Kershaw before him also describes these features as leats and drains (NMR No. SE 57 NW 101 - Authority 1). The leats are infact the parallel, hollowed-out routes of two disused trackways which run to the north of the present single track road to Low Pasture Farm and are probably earlier alignments of this route. Banks also mentions a third leat on this slope taking water directly to a millpond at Low Pasture Farm. This again is not supported by field evidence and it is unlikely that such a leat would have been constructed when Low Pasture Farm is on a natural watercourse.

(g) A monastic enclosure?

A deep ditch defines three sides of a large enclosure immediately to the east of the claustral range. The north and south sides align with the north and south sides of the claustral range suggesting the plot may be part of the monastic layout, although it may simply be a later field laid out to respect earlier alignments. The two fields within the enclosure are shown on the guidebook plan with the historical names of 'chapel garth' and 'orchard' but the enclosure itself is not shown, nor has it been commented on in previous accounts.

(h) The pond at Low Pasture Farm

The guidebook plan shows an extensive pond just to the north of Low Pasture Farm (Harrison 1999, 22). Banks also refers to a pond here, mentioning a dam immediately to the east of the farm buildings, though it is not clear from his account if the resulting pond was as large or in the same position as that shown on the English Heritage guidebook plan (Banks 2001,

41). The earlier accounts by McDonnell and Everest (1965) and McDonnell and Harrison (1978) do not mention a pond or dam here but instead conclude that the documented medieval mill at Low Pasture Farm was powered via a leat from the south pond (f) mentioned above.

There are no ground remains to indicate a pond as large as that shown in the guidebook at Low Pasture Farm and it has not been possible to check on the ground for the dam mentioned by Banks. It is probable though, that if there is evidence for a dam or pond adjacent to the farm, it would have been noted by McDonnell, Everest or Harrison when they considered the supply to the monastic mill at Low Pasture Farm.

3. Conclusion

The analysis of the earthwork remains and assessment of earlier accounts presented above have led to a revised understanding of the western part of the monastic precinct at Byland Abbey (*see* Figure 3). The size and extent of the monastic ponds as shown on the guidebook plan (Harrison 1999, 22) need to be revised. In particular, the interpretation of a large monastic pond to the south-west of the abbey is far from secure, because it is not clear how it could have been fed with water. Also one of the earthwork features defining the alleged monastic pond clearly cuts across the abbey's precinct boundary and therefore is probably more likely to date to after the Dissolution.

The post-Dissolution history of the site is little understood, but it seems that an individual called Vaughan had a 'gentry house' at Byland in 1616 (Rushton 1976, 85). It may be that this was the same house established by Sir William Pickering at Byland after the Dissolution (Rushton *pers. comm*). Sir William Pickering was an important local landowner with a house also at Oswaldkirk, three miles to the east, and was prominent at the court of Elizabeth I. He died in 1574-5. It is possible that one or both of these individuals could have taken an interest in enhancing the landscape setting of Byland Abbey. Some of the ponds currently interpreted as part of the monastic layout could have been enhanced or created

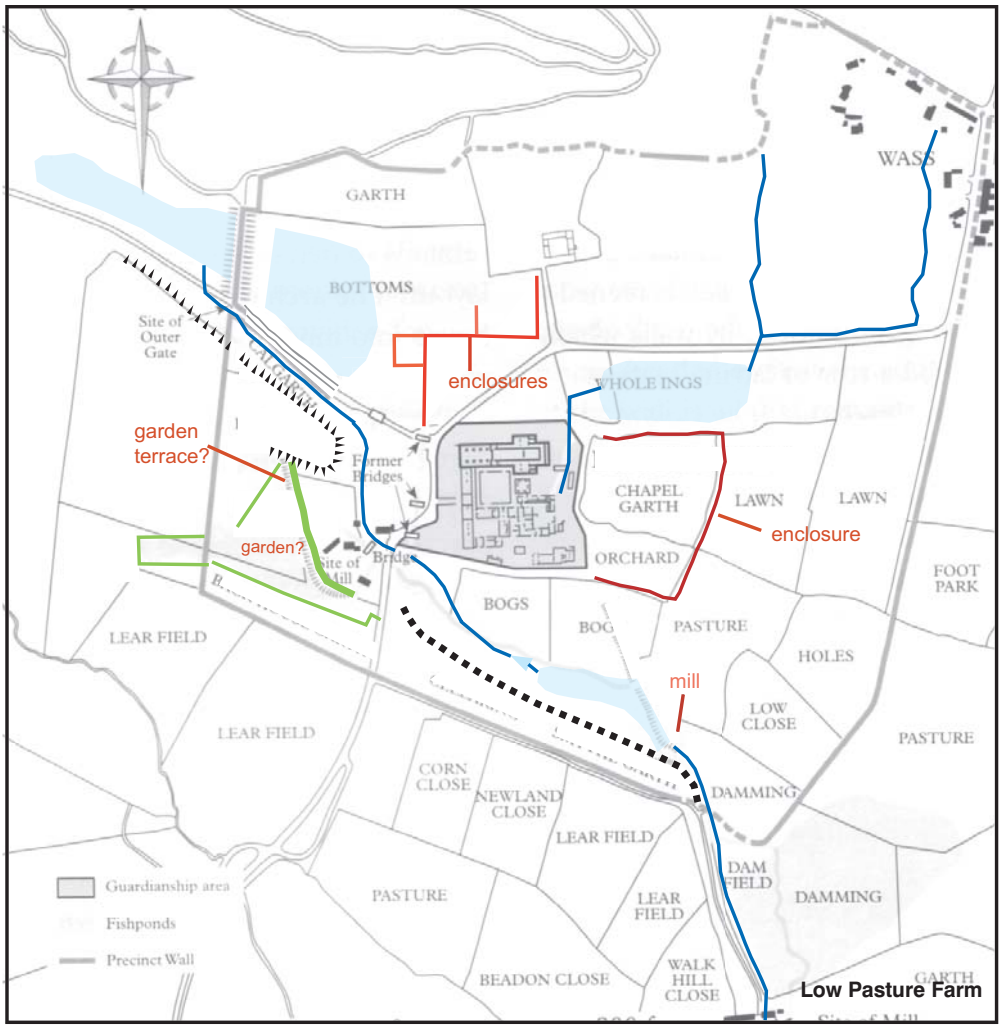

Figure 3
Revised layout based on the guidebook plan

from new during this period as ornamental features. More significantly, a post-Dissolution country house at Byland could provide the historical context for the possible development of a garden to the south-west of the abbey, although the site of such a house remains unidentified. Similarly, the deliberate levelling of the enclosures to the north of the abbey and the creation of an orchard to the south-east of the claustral range (as shown on the guidebook plan) could also have been intended to create a more 'polite' landscape setting for the abbey after the Dissolution.

4. Methodology and Acknowledgements

The fieldwork was carried out by Trevor Pearson, Stewart Ainsworth and Alastair Oswald to Level 1 standard (RCHME 1999) and involved a one-day walk-over assessment of the area with features located using the guide book plan (Harrison 1999, 22) the previous 1:2 500 scale earthwork survey (McDonnell and Harrison 1978) and the aerial photographic plot by Kershaw (NMR No. SE 57 101 - Authority 1). Background documentary research was restricted to the secondary sources listed in Section 5 below. The report was written by Trevor Pearson and edited by Stewart Ainsworth.

David Robinson is thanked for providing a copy of Banks's report and John Rushton kindly provided background information about the post-Dissolution history of the site.

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