

CPAT Report No 1183

Strata Marcella Abbey, Welshpool, Powys

GEOPHYSICAL SURVEY 2012



THE CLWYD-POWYS ARCHAEOLOGICAL TRUST

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1 INTRODUCTION

- 1.1 The earthwork remains of the Cistercian abbey of Strata Marcella lie on the west bank of the Severn, just to the north of Welshpool (SJ 2515 1044; Fig. 1). The abbey was founded by the monastic order in 1170 at the invitation of Owain Cyfeiliog, prince of southern Powys, and he was buried there in 1197. Although the abbey suffered during Edward I's Welsh wars, building work continued on the site into the early 14th century. In 1400-5 the abbey was partially destroyed during the Owain Glyndŵr rising, and it went into decline as a result even though it remained active until the Dissolution. By 1536, when it was dissolved, there were few monks and some of the monastic buildings were already ruinous. It seems that the monastery was then largely dismantled, with some of the stone apparently being taken for use in the construction of nearby churches and other buildings. Abbey Farm was erected in the ruins, probably over the claustral ranges with the cloister being used for the farm's courtyard. The site was the subject of excavations in 1890 by the Powysland Club, which largely focused on the abbey church, while a geophysical survey was undertaken in 1990, although this was not particularly revealing (Silvester *et al.* 2011; Arnold 1992).
- 1.2 The current project follows on from a scheduling enhancement programme of medieval monastic sites conducted by the Clwyd-Powys Archaeological Trust (CPAT) in 2010-11 (Silvester 2011) and is a continuation of fieldwork during 2011-12, funding for both studies being provided by Cadw. The previous season of investigation comprised a detailed topographical survey, together with the recording of various features eroding from the northern bank of the River Severn (Jones and Silvester 2012).

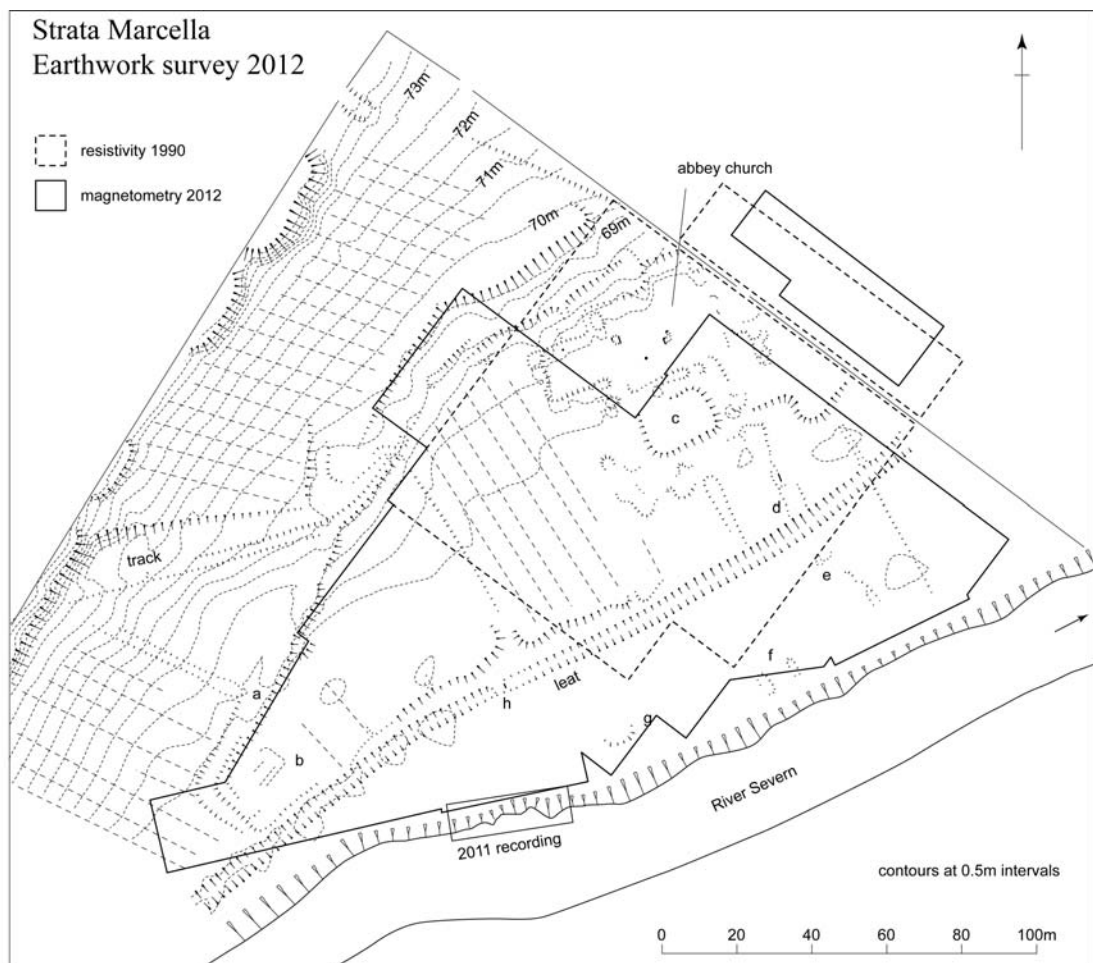


Fig. 1 Earthworks in the area of Strata Marcella, depicting the suggested outline of known structures and the location of recording in 2011 and the 2012 geophysical survey

- 1.3 The recent study consisted of a magnetometer survey that covered much of the area thought to have been occupied by the abbey precinct, but excluded the abbey church in as far as this was possible since the church had been the subject of a previous survey, conducted in 1990 by Geophysical Surveys of Bradford (GSB) (see Figs 1-2). The Bradford survey employed both magnetometry and resistivity and, although somewhat hampered by the disturbance and spoil from the 1890s excavation, successfully identified parts of the abbey church, as well as hinting at elements of the claustral range and other conventual buildings (GSB 1990).

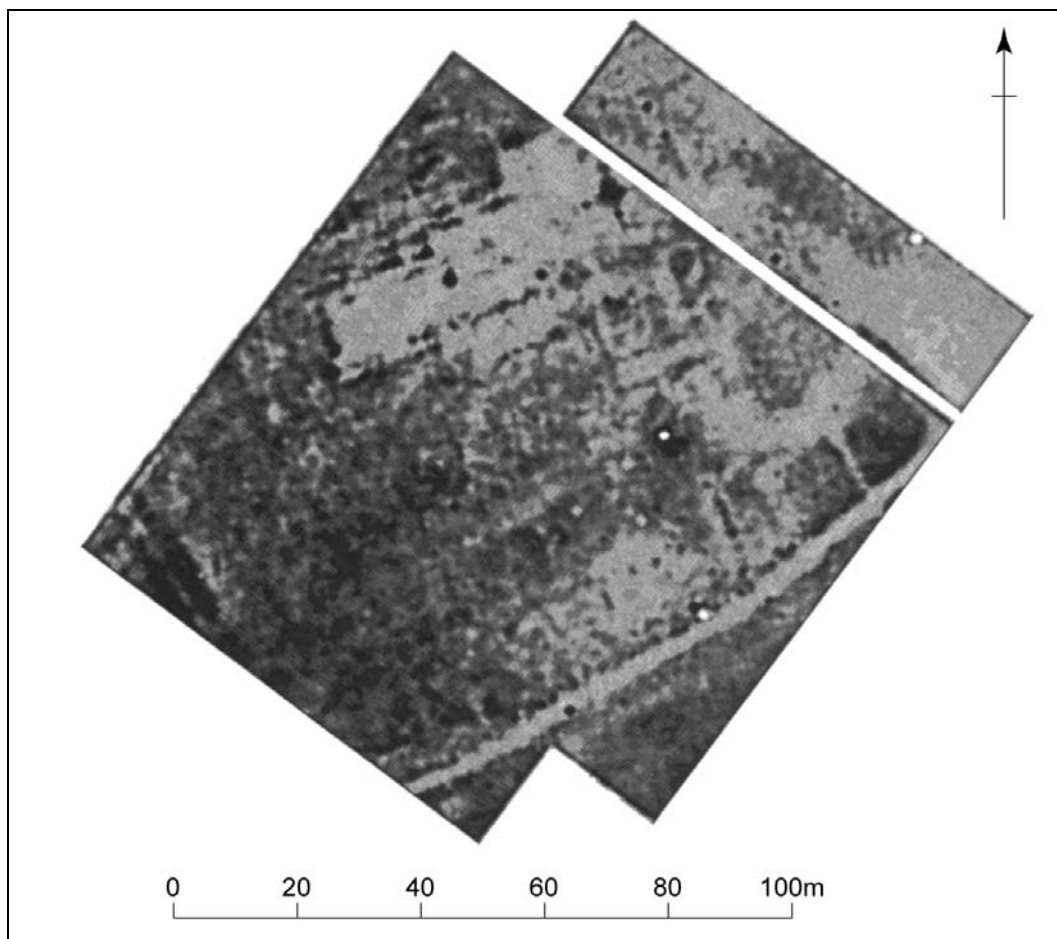


Fig. 2 1990 resistivity survey by Geophysical Surveys of Bradford (based on GSB, 1990, fig. 5)

2 GEOPHYSICAL SURVEY 2012

- 2.1 The geophysical survey was based on a series of 20m by 20m grids and employed a Bartington 601 magnetic gradiometer. The readings in each grid were taken along traverses 0.5m apart and the speed of each traverse was carefully controlled such that readings were taken every 0.25m, giving a total of 3200 readings per 20m grid. The grids were laid out and then located in relation to local field boundaries by a combination of total station survey and taped measurement. The survey areas could then be related to modern Ordnance Survey mapping, thereby enabling the co-ordinates of any significant anomalies to be determined. The readings from each area were combined and processed using Archeosurveyor software to provide greyscale images of the results, depicted in Figs 3-4. The only processing functions used were *Clip*, to remove the effects of very high and very low readings on the results, thereby allowing anomalies of potential archaeological interest



Fig. 3 The results from the 2012 magnetometer survey



Fig. 4 The combined results from the 1990 resistivity survey and the 2012 earthwork and magnetometer surveys

to be shown, and *Destripe*, to correct minor variations between readings provided by the two magnetic sensors of the gradiometer.

- 2.2 The survey had to be conducted over three separate visits without it being possible to retain markers for the survey grids. Consequently, the survey consisted of a series of overlapping areas, with each of the survey areas having a different orientation. However, the results were processed to a common scale and integrated in order to produce a coherent overall result. The very obvious lacuna in the centre of the survey area results from the presence of a large tree stump surrounded by metal fencing and other debris.

3 INTERPRETATION

- 3.1 By combining the results from the topographical survey and both phases of geophysics (Fig. 4) it has been possible to produce a more detailed interpretation of the abbey remains than that previously proposed, and this is presented in Fig. 5. Note that for convenience of description the main axis of the abbey has been taken here as being east/west, but is actually nearer to east-north-east/west-south-west, a classic example of what is sometimes termed ‘ecclesiastical east’.

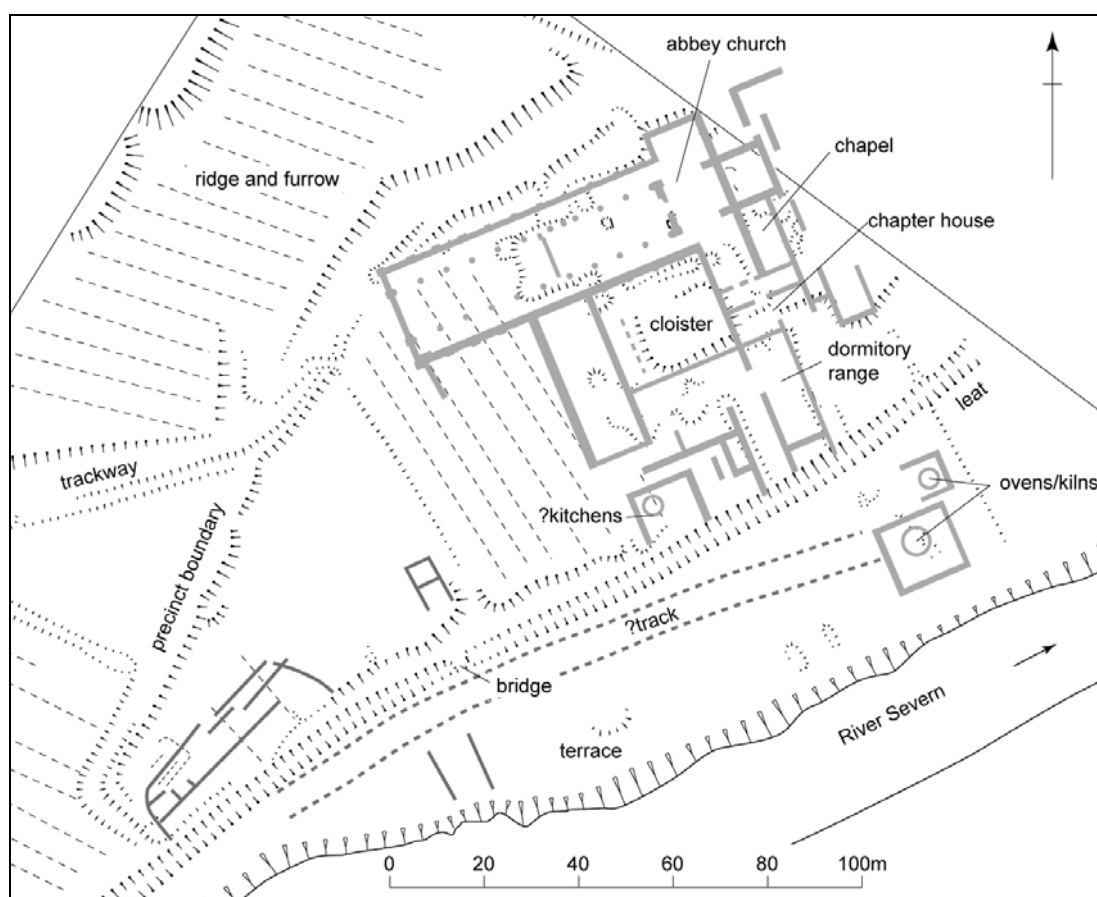


Fig. 5 Interpretive plan of Strata Marcella

The Abbey Church and Cloisters

- 3.2 The earthworks relating to the abbey itself are often very slight and the picture has been confused to some degree by the 1890 excavations. Indeed, the most readily visible element on the ground, the earthworks of the abbey church, is entirely a product of the excavation,

- within which the lower parts of several column bases were revealed. The earthworks are though misleading, for the western end of the nave was never excavated to floor level and the building extends a further 25m beyond the obvious earthworks. One inference is that the north and west walls of the nave may be upstanding, though buried, to a height of perhaps 0.7m.
- 3.3 The plan of the abbey which resulted from the 1890 excavation (Williams 1992, 81, fig. 9) and its reinterpretation by Dr Chris Arnold (1992, 93, fig. 15), fits well with both the visible earthworks and the evidence from the geophysics, revealing a high degree of accuracy in the late 19th-century recording. On this basis the church may have had an overall length of 83m, with small north and south transepts and a nave that was around 21m in width. A series of earthworks, together with the excavated evidence and geophysical anomalies, points to the presence of a small chapel to the east of the south transept.
- 3.4 The cloisters, to the south of the nave, were only partly revealed in 1890, suggesting a garth area around 22m across from east to west, which is now occupied by a low mound, presumably spoil from the excavations (Fig. 1, c). There is little visible evidence for the extent and layout of the cloisters, despite their later reuse as the buildings of Abbey Farm, which were still standing until at least 1780. The geophysics results, however, show the cloisters reasonably clearly as an area of relatively low response in comparison to the 'noise' from demolition debris on their west, south and east; the dimensions are roughly those given by the excavators. Internally there seem to be two near parallel east/west lines of possible pits, about 5m apart, but these probably relate to the later Abbey Farm.

Conventual Buildings

- 3.5 A number of slight earthworks suggest the presence of several of the conventual buildings to the south of the abbey church. The position of the Chapter House was postulated following the 1890 excavations, along the eastern side of the cloisters (Williams 1992, 81; fig. 9), and this is reinforced by the geophysical survey results, which imply that it was a rectangular building aligned east/west that may have been either directly attached to the south transept or, more likely, separated from it by a narrow room, its main axis from east to west.
- 3.6 To the south of the Chapter House there is evidence for a long range of buildings which extended at least as far south as the leat (Fig. 1, d). The eastern side of the buildings can be readily identified, including a short stretch of wall-facing which was originally uncovered during the late 19th-century excavation. Indeed the line of this wall appears to be extended to the south of the leat, raising the possibility of a latrine block which would have straddled the leat, perhaps with a dormitory between it and the cloisters. The geophysics shows a wall running east/west within a few metres of the leat and this may have been the northern edge of the monk's latrine.
- 3.7 On the south side of the cloister, the situation was rather more difficult to determine owing to the presence of what seemed to be a great deal of debris which masked the geophysics readings; the debris may result from the collapse of the south side of the cloister, but this can only be a supposition at present. The south side of the cloister is normally the location of the refectory, which might be expected to run north to south in accordance with the typical Cistercian plan of the time. The geophysics results seemed to show its eastern wall, although the topographical survey reveals a gully there, implying that the wall had been subsequently robbed, at least in part. The warming house was probably sited to the east of the north end of the refectory but, again, this area is somewhat masked in the geophysics results by debris. On the south side of the refectory the geophysics revealed evidence of an additional, sub-divided, range but its function is not known; one possibility could be that it provided storage space for wood used in the kitchens and warming house. Interestingly, the area to the immediate west of the cloister and refectory seems to be occupied by a lane or

- passage, and this may have facilitated access to the kitchen, which was probably conveniently situated just to the north of the leat, and is almost certainly defined by a large thermo-remnant magnetic anomaly within a near-square building. North of the kitchen, although probably not directly attached to it, were the lay brothers quarters, but the geophysics for this area is somewhat equivocal.
- 3.8 Visible earthworks to the south of the leat include a pair of parallel banks (Fig. 1, f) and a slight terrace (Fig. 1, g), both of which may be associated with buried structures. Evidence from the investigations along the river bank in 2011 (see below) suggests that this area may well have been subject to a considerable build-up of alluvium over time, which is likely to be masking further evidence.
- 3.9 As well as the visible features, the geophysics revealed a number of anomalies in the area to the south of the leat. Although the results in parts of this area have a slightly blurred appearance, this no doubt is due to the masking effects of the later alluvium. Activity on this side of the leat appeared to be centred on a road or track running approximately parallel to the leat and defined by slight ditches on its north and south sides. The west-south-west point of origin of the track was not apparent but it seemed to terminate at a group of two or three significant thermo-remnant magnetic anomalies, two of which looked to lie within near square structures and one of these may be related to the earthworks (Fig. 1, e) recorded during the topographical survey. The anomalies are suggestive of ovens or kilns but it is not possible to determine their precise nature without further investigation.

The Abbey Precinct

- 3.9 On the basis of current evidence the precinct appears to be defined by a substantial bank (Fig. 1, a) which extends north-west from the leat for 15m before turning to the north-north-east. In places this survives to around 5.5m wide and 0.9m high, with what may be a holloway along its outer side. It seems likely that this is associated with the abbey since it appears to predate the ridge and furrow in this area, which we assume to be associated with the later Abbey Farm. The boundary and possible holloway are cut by a later trackway, beyond which they are visible for a short distance before all trace is lost.
- 3.10 Faint earthworks at the western end of the precinct (Fig. 1, b) were thought at the time of the topographical survey to represent the remains of possible structures, although the recent geophysics did not conclusively support this theory. Some traces indicative of former banks and ditches could be seen in the geophysics but if they represent a structure it is more likely to have been of wooden construction. To the north-east of this there are two slight, parallel gullies and also faint earthworks overlooking the leat, the function of which are unclear. Immediately to the west of the leat there appeared to be evidence of a sub-rectangular feature of two units defined by small gullies.

The Abbey Leat

- 3.11 The earthworks of a substantial leat pass through the area of the abbey earthworks, contouring around the slope. The source of the leat is not known, although given its height above the river at this point it must be assumed to have been some distance upstream. The leat is likely to have fed a mill at Pool Quay, 720m north-east of the abbey (SJ 2551 1107), although whether this was originally the abbey mill is uncertain. It is more likely that the abbey mill would have been significantly nearer to the abbey itself in order to reduce carriage. The leat had certainly become redundant by the later 18th century when a new weir was constructed downstream of the abbey to provide water for a smelting works, and was later used for a textile mill.
- 3.12 The leat, which is up to 6.6m wide, has become infilled with silt to some extent and now survives to a depth of up to 0.6m. At one point (Fig. 1, h and Fig. 6, below) stonework is

visible within the leat suggesting that it was culverted beneath an access route. Although the leat's association with the abbey has yet to be determined with certainty, this is perhaps the most likely interpretation. Cistercian abbeys elsewhere in Britain are often known to have had good supplies of water and it was not uncommon for latrines to be built above the watercourse.



Fig. 6 The culverted section of the leat at SJ 25108 10348 (see para 3.12);
image courtesy of David Williams

Post-Dissolution Features

- 3.13 It would not be unreasonable to expect that the most obvious earthworks post-dating the abbey should be associated with Abbey Farm, which adopted the claustral area and presumably reused some of the monastic structure. However, there is surprisingly little evidence for buildings in this area other than a series of low mounds on the south-west side and a rectangular mound occupying the courtyard/farmyard area, which may be spoil from the 1890 excavation.
- 3.14 There are a number of former field boundaries which are presumably associated with the farm, together with three areas of straight ridge and furrow, one of which overlies the western end of the abbey church. The other feature of note is a broad trackway which is terraced into the slope to the north and west of the abbey church and then follows a substantial holloway further to the west, where it is cut by the modern road. Aerial photography indicates that the track also extended eastwards, passing through the site of Weir Head Farm and on towards Pool Quay, the inference being that this may have been a precursor of the 1756 turnpike road.

4 CONCLUSIONS

- 4.1 As a result of the recent surveys we now have a much clearer understanding of the general layout not only of the abbey church, but also its precinct and several of the conventual buildings. Despite this, the site remains somewhat enigmatic and is perhaps one of the least known abbeys in Wales, mainly owing to the fact that there is little which is readily identifiable on the ground. Indeed the slight earthworks are best appreciated from the air in low winter sunlight, as demonstrated by a CPAT aerial photograph, taken in 1982 (Fig. 6, below).
- 4.2 Yet the archaeological potential of Strata Marcella is clear and reflects its status as a scheduled ancient monument. While the recent work has done much to elucidate the layout of the abbey complex, the geophysics in particular has provided tantalizing hints of further detail which can only be confirmed through targeted trial excavation. Such a strategy would further assist with the interpretation of the site and aid the assessment of its survival and potential.



Fig. 6 Aerial view of the abbey earthworks in 1982, viewed from the east. The excavated part of the abbey church is clearly visible, with the site of the cloisters to the left, and the leat is also a prominent feature with slight earthworks also visible between it and the river. The precinct boundary is also apparent, with much of its interior and the surrounding area covered by post-dissolution ridge and furrow. Photo CPAT 82-4-0033

5 ACKNOWLEDGEMENTS

- 5.1 We are grateful to the landowner, Mr Adrian Derwas, for granting access for the survey and recording, and also to Cadw for providing funding.

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