# Evaluation of the Site of the East Garden & Associated Features at Powis Castle, Powys, Wales

**Project PHL20001**

MJ Roseveare, ACK Roseveare

Prepared for the National Trust in Wales


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ArchaeoPhysica
Reconnaissance and Geophysics for Archaeology

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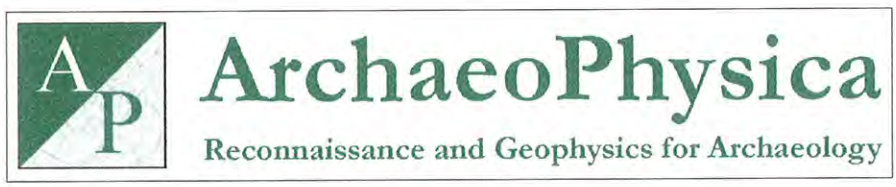


## Abstract

An archaeological evaluation was requested by the National Trust to quantify the survival or otherwise of various features suspected to have existed within and immediately outside the East end of Powis Castle, Welshpool. This evaluation initially consisted of a geophysical survey followed by selective test excavation of anomalies to collect structural and chronological information. This was subsequently expanded by ArchaeoPhysica to include a basic study of the available illustrations made of this part of the castle over the last four-hundred years; thus allowing their content to be combined with the physical evidence for former structures and an attempt made to produce a skeleton structural chronology of the East end.

This has been successful in that various features have been discovered that can be demonstrated to date from early, potentially military, phases of the castle, superseded after a phase of substantial alterations by formal pleasure grounds. These then seem to have been allowed to decline and a further phase of alterations resulted in their dismantling and incorporation into *Naturalistic* parkland. Further late alterations then reinstated some elements of the formal design, creating the slightly confused set of features evident today.

All the major structures at the East end of the castle, both extant and dismantled, have been incorporated into a chronology that for the post-medieval period can be closely dated. A range of features from all periods survive, from the medieval to the early twentieth century, some virtually intact, others partially destroyed. The physical remains of various former structures that existed only in illustrations have been located in several cases, e.g., the prospect tower in the formal garden and at least one of the medieval towers in the stone curtain, the line of which is now approximately known. Archaeologically sensitive deposits and structures exist over a wide area, in particular the Bowling Green and the park, and all will need to be subject to resource management strategies to prevent erosion of this resource.

A large quantity of further work would be required before the development of this part of the castle could be fully understood and there is a sufficiently large resource to support this. The medieval aspects of the structure in particular could be better understood as

although elements have been detected by this evaluation there is still very little known about individual structures or their chronology. The line of the medieval defences is at least partially understood but their exact nature is not, as essentially they are all obscured beneath, and in some case removed by, later features. Where they do survive they would benefit from further, potentially invasive, examination. Further geophysical survey could also contribute, in particular over the sites of medieval structures.

This report seeks to document the resource as it is exists at the time of writing and therefore combines the documentary, geophysical, excavation and structural information into a single text which could hopefully be used in future both to guide future research and the management of the resource. Any failing in this respect remains the responsibility of ArchaeoPhysica Ltd..

# Chapter 1: Report Introduction

## *1.1 Content*

This report was originally intended to detail the results of the geophysical evaluation and small excavation situated at the East end of Powis Castle, however, it has developed to include a larger range of evidence derived from documentary sources in the form of illustrations and a structural assessment of the upstanding remains. As the project progressed, it became clear that a limited amount of parallel comparative study was needed, of both the surviving fabric and the pictorial elements of the documentary record before a comprehensive interpretation of the results of the evaluation could be possible. This analysis has proved essential and hence the results have been incorporated into the report which will hopefully provide a resource upon which future research and management strategies could be reliably based. The report therefore contains material in addition to the results of the excavation and geophysical survey, with separate description and discussion included for each category of material.

The report combines the presentation of the available evidence with a detailed discussion resulting in an interpretation of the results biased towards establishing dates and accounts of changes in the fabric of the East end of the castle and gardens. It also includes archival catalogues of project records, e.g., cultural finds, photographs, etc.. This has been done to provide a stand-alone document which it is hoped will become a more useful resource as a consequence.

## *1.2 Layout*

This report is organised into five principal parts, the first two comprising this introductory part, the next is a discussion of the documentary resource (chapter 3) used during the project, the third part (chapter 4) presents the geophysical results and the fourth (chapters 5 and 6) presents the archaeological results, including an outline description of the standing structure. Chapter 7 documents the principal chronological relationships so that dates or date ranges can be applied to particular structural events. Chapter 8 contains various conclusions, including a statement of what is considered might be useful avenues for future research, based on the results of this evaluation. At the end of the report are appendices which detail the raw data from the evaluation, e.g., the excavation contexts, photographic and cultural finds catalogues.

The sections that detail each resource (Chapters 3 to 6) each present and then discuss that resource. Each can be considered in isolation but are best considered together to appreciate the breadth of the resource at Powis Castle. Some comparison with other elements of the resource occur in these sections in their discussion sections, although Chapter 7 attempts to bring all the chronological aspects of the different parts of the resource into one discussion.

A large part of this report is devoted to the excavations as these have resulted in the most immediately useful information and have allowed several aspects of the present structures to be related. To clarify the detailed discussion of the archaeological stratigraphy and other findings several small illustrations, derived from the photographic archive, are included within the relevant sections.

# Chapter 2: Project Introduction

## *2.1 Locations*

The evaluation at Powis Castle was concerned only with the development of the East end of the complex and was an attempt to quantify the degree of survival of early features and to qualify this by a limited quantity of excavation guided by the results of geophysical survey. This area was defined to include the old Bowling Green immediately East of the Keep, the High Terrace and an area of park just to the East of these structures, at the end of the plateau upon which the castle sits. This area originally included a small part to the South that is separated from the park by a deer fence and now houses an electrical transformer for the castle within its own enclosure. The heavily overgrown nature of this small but potentially important area and the disturbance to the ground related to cables, etc. was sufficient to prevent geophysical survey within it so it was excluded from the evaluation.

The whole of the remaining area was surveyed using an electrical resistance technique to prospect for buried features. This was especially relevant for the Bowling Green, which was expected to contain the remains of structures, and the area of park to the East which was known from documentary sources to have been used as a formal garden sometime prior to the 1770's (Pritchard, 1771).

## *2.2 Project Background and History*

The project was commissioned as an element of research in advance of proposals to restore this end of the castle to an appearance similar to that of the nineteenth century (e.g., Munn, 1817), before opening it to visitors. This would entail the recreation of new planted borders, etc. and would impact upon any buried archaeological features. One of the more important results of this evaluation is the knowledge gained about the evolution of this nineteenth century appearance; it has also shown however that comprehensive restoration would be destructive of later features from subsequent restorations.

The second purpose of the evaluation was to research the survival, or otherwise, of the remains of the formal garden to the East of the castle, of which nothing was visible before evaluation. It seemed fairly clear that landscaping had occurred in this area so there was a need to determine whether the garden remains were simply buried and suitable for restoration or whether they had been destroyed during later phases of development at this end of the castle.

No excavation or geophysical survey had been attempted here before, although previous excavations elsewhere, e.g., of the Southwest corner tower beneath the structure housing the public conveniences, had demonstrated that earlier parts of the castle do survive below later structures. The area included within the evaluation has received little in the way of modern intrusion, although the insertion of a power cable to the building effectively bisects the Bowling Green and also isolates the base of the stairs to the keep from the surrounding stratigraphy.

Running concurrently with the evaluation is a structural examination of the buildings and gardens by Richard Morriss and it is hoped that the two studies may significantly improve our understanding of the castle.

## *2.3 Project staff*

All liaison with the National Trust has been conducted via Caroline Sier, the Property Manager, after some initial consultation with the archaeologist John Latham of the National Trust for Wales. Copies of this report will be forwarded to him and also to Jane Gallagher, the Historic Buildings representative of the National Trust for Wales. Access to various parts of the property was arranged through Sam Humphries.

Photocopies of various historical illustrations of the castle were provided by Jane Gallagher's office and an anonymous plan of 1752 in the possession of the current Earl of Powis was photographed and a copy forwarded by Neil Walters, the House Steward at Powis. Parts of these have been reproduced in the text and the authors extend their

thanks to the National Trust for making these available.

The identification of excavated ceramics was assisted by Nigel Jones of the Clwyd-Powys Archaeological Trust and Richard Morriss provided useful information on various aspects of the development of the castle as the evaluation proceeded.

ArchaeoPhysica project staff were Anne Roseveare, Martin Roseveare and Sarah Revans.

### *2.4 The Project Design*

Relevant parts of the project design originally supplied to the National Trust are quoted verbatim below to provide context for the evaluation and to quantify any departures made from it.

> *"1) Geophysical survey*
> *Probe-based electrical resistance survey has been chosen as the best geophysical technique to use at Powis, being suited to the detection of buried walls and ditches and immune from interference from the quantities of ferrous debris usually to be found on these sites. This would be used over the whole area of the Bowling Green to detect both large geological changes (related to terracing it into the hillside) and any features buried within it, down to a depth of approximately 0.5m, slightly deeper if local conditions permit. The technique is also suggested for the top of the High Terrace to determine the presence of any footings of the supposed Banqueting Hall or ornamental features. We have a suspicion that Pritchard's plan shows a rectangular pool on the terrace rather than a building.*
>
> *The third area of survey is the area of the parterre, North of the substation and extending over the whole of this terrace to confirm the size and survival of the garden.*
>
> *2) Test excavation of the Parterre*
> *Two very small trenches, guided by the geophysical survey, one to test the form and degree of survival of the garden features themselves including the enclosing wall, and the other to examine the relationship of the central entrance path and the garden and to include any medieval surface if this becomes apparent. Between these two sufficient detail should be apparent to "calibrate" the results of the geophysical survey and thus assess the overall survival of the garden and hopefully extrapolate its overall form and construction, while providing a little information as to its relationship to the medieval entrance.*
>
> *3) Test excavation within the Bowling Green*
> *This is difficult to quantify at the current time because it is intended only to examine significant anomalies within the geophysical data, however, it would be quite limited and wouldn't exceed 25m² spread over several small trenches. Its overall purpose would be to allow any possible early structures to be examined in detail and to allow the recovery of dateable materials. They could be quite deep or might be very shallow, however, it would be desirable to position a deep sondage near the intersection of the Eastern retaining wall and the stairs. This would facilitate the examination of any surviving remains of a gatehouse at this location, allow the overall construction of the retaining wall to be examined and would also allow us to firmly link buried deposits chronologically with the extant features. It might also allow the identification of any underlying prehistoric structure should time allow."*

### *2.5 Departures From This Design*

The geophysical survey was conducted as planned but the excavation component of the evaluation was reduced in scope once the complexity of surviving deposits became clear. The geophysical survey was able to proceed without any problems and was extended further East than originally intended to ensure that any surviving parts of the formal garden were wholly within the survey area and to examine whether any structures were present further East still. It was also hoped that by extending the area any large-scale changes in the electrical properties of the soil, related perhaps to the construction of the garden by the creation of a platform, would be located. As suggested in the original design the High Terrace was surveyed in

addition to the Bowling Green in an attempt to understand more about it's construction.

The excavation was essentially a single trench (Trench 1) to test for surviving elements of the garden where they were expected to have been protected from later landscaping by other features. This departure from the design was partly in response to inconclusive geophysical evidence for the garden which suggested that any detail had been removed by these later changes. The lack of any clear evidence for the East wall of the garden meant that the trench designed to cut this feature was not excavated, however, in accordance with the design a trench was excavated across the line of the edge of the central path (Trench 6). Trench 5 was excavated to test the nature of a substantial feature (an in-filled terrace) revealed by the geophysical survey that was completely at odds with the layout of the garden as shown by Pritchard (Pritchard 1771) and not suspected before the evaluation. All other trenches (Trenches 2 to 4) were small test pits excavated to test assumptions made about the development of features exposed by Trench 1.

The deep sondage proposed for the Bowling Green was not excavated because the complex nature of Trench 1 required the full time available for the excavation. As a consequence no test excavation has been conducted within the Bowling Green so the exact nature of some of the features noted in the geophysical data is not known, including some which may belong to the medieval structure..

As planned, no excavation was conducted on the High Terrace.

# Chapter 3:Information Source: Illustrations

## *3.1 Preface*

To form a reliable reference capable of providing a secure basis for future research, the documentary sources used during this evaluation have been examined and classified according to the reliability of their attribution, primarily in terms of date and preferably an author. Undated items are not considered reliable enough for the provision of primary evidence; they may, however, be useful in other ways. Comparison of undated material with dated items does in many cases allow a broad date to be determined and in some cases this is sufficient to reveal changes in structure, etc. That would otherwise have been undetectable. The detailed discussion of individual illustrations is intended only as a summary of the information pertinent to the East end of the castle; substantial information is depicted on all of them.

## *3.2 Inventory of illustrations examined during the study*

Three plans were examined during the evaluation and are as follows:

- An estate plan by Humfrey (sic) Bleaze, dated 1629, (Bleaze, 1629)
- A measured survey, dated to 1752 but by an unknown author (Anon, 1752)
- A plan from measured survey by Thomas Farnolls Pritchard, dated 1771 (Pritchard, 1771).

In addition, various elevations were examined, namely the following:

- The castle and gardens from the East by Thomas Dineley, dated 1684 (Dineley, 1684:1)
- The castle only from the East by Thomas Dineley, dated 1684 (Dineley, 1684:2)
- The castle viewed from the South by Samuel and Nathaniel Buck, attributed to 1742 (Buck, 1742)
- The North front of the castle, after William Marlow, circa 1775 (NT Guidebook, 1996) (Marlow, 1775)
- The East front of the castle keep from the High Terrace by John Buckler and dated 1822 (Buckler, 1822:1)
- The East front of the castle keep from the Northeast by John Buckler and dated 1822 (Buckler, 1822:2)
- The East front of the castle keep from the stairs by John Buckler and dated 1822 (Buckler, 1822:3)
- The East front from the High Terrace, dated to 1817 and by Paul Sandby Munn (Munn, 1817)
- A view towards The Breidden, dated to 1845 and by David Cox (Cox, 1845:1)
- A romanticised view of the castle keep from the Southeast, dated to 1845 and by David Cox (Cox, 1845:2)
- A photograph from Country Life magazine of 1901 (Country Life, 1901)
- The East front from the stairs, David Cox Junior, undated (Cox Jnr, unknown)
- Postcard of unknown date, referenced 26748 J.V (J.V, unknown)
- East front from the Bowling Green, unknown date and author
- The castle from the Southeast, unknown date and author, thought to be 1750's
- The East front of the castle keep, from the park. Unknown date, from the Douglas-Pennant collection

Not all these were used, for reasons outlined in the preface, section 3.1. Those in the following list, however, have been regarded as primary evidence, while those in the second list as secondary evidence. All others have been disregarded except in the specific cases documented in the following sections.

***Primary:***

(Bleaze, 1629), (Anon, 1752), (Pritchard, 1771), (Dineley, 1684:1), (Dineley, 1684:2), (Buck, 1742), (Munn, 1817), (Buckler, 1822:1), (Buckler, 1822:2) & (Buckler, 1822:3)

***Secondary:***

(Marlow, 1775), (Cox, 1845:1), (Cox, 1845:2) & (Country Life, 1901)

### *3.3 Description and discussion of the illustrations used*

#### *3.3.1 Primary evidence - Plans*

##### *3.3.1.1 Bleaze, 1629*

This is an estate plan drawn to encompass both the castle itself and Welshpool "Welsh towne" to the East. The layout of the estate is clearly shown and individual parcels of land are named, although the scale necessitates that buildings are only shown with their basic detail. The twin-bailey nature of the castle is clear and the central keep is shown as a large square block with a central courtyard, occupying the entire width of the castle. The essential form of the structures seems to be realistic, e.g., the gables over the windows of the Northwest range which are known to have existed and therefore the drawing could be probably be relied upon to depict features at the East end of the castle at least in token fashion.

Several differences from the present form are immediately evident and it must be noted that this plan predates both the English Civil War, when the structure was attacked, and also the large-scale alterations conducted by William Herbert 3rd Lord Powis, 1st Earl, Marquess and titular Duke of Powis, later that century (NT Guidebook, 1996).

Buildings are drawn to reveal their elevations so the plan is valuable for identifying upstanding structures that do not survive today. The first of note is a tall wall along the North side of what is now the old Bowling Green, in the position that the medieval curtain wall is expected. To the East, set inside the curve of this wall to the Northeast is a small tower, today this could coincide with a relieving arch in the present wall (see section 5.2.2). To the South of this is depicted another tower, apparently slightly larger with a prominent glacis or plinth below to the Southeast. Between these two is another section of tall wall. The High Terrace seems to be illustrated, although its interpretation is uncertain as the drawing could also represent another wall, with window openings. Judging by the relative positions of the various structures it is possible that the terrace is shown in its shorter form. Below this two large terraces are shown on the South-facing slope, however, these do not continue the full length of

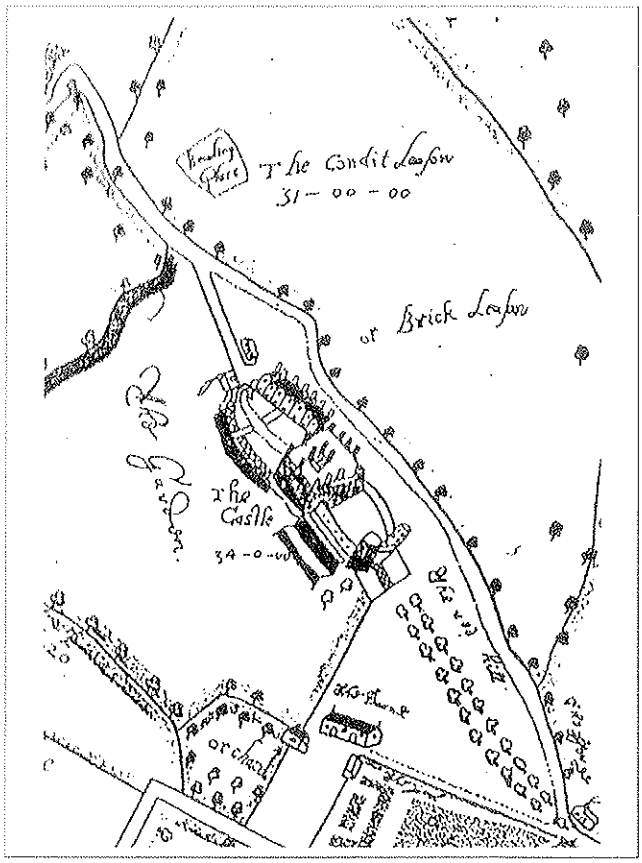



Figure 1 Extract from Bleaze, 1629

the castle as the present gardens do now.

A feature that is difficult to understand is a prominent structure extending East from between the two East towers. It is drawn as a dark band, similar to the style used to denote terraces, apparently part of a rectangular structure projecting from the castle in line with an avenue of trees. No formal road is drawn within the avenue, whereas other roads are illustrated which suggests a grass surface existed there.

There are no signs of gates or gatehouses attached either to the keep or the bailey walls although a simple gateway is shown at the West end. In general terms, Bleaze seems to depict a structure

that retains substantial medieval elements of simple form.

### *3.3.1.2 Anon, 1752*

This seems to be the earliest measured survey of the castle, one hundred and twenty-three years after the earlier plan and depicts the buildings in great detail along with the more substantial elements of the surrounding structures. It extends far enough to the East to show the outline of an enclosure beyond the East end of the castle, defined by a wall with two large gate piers placed centrally in its Eastern side, aligned on an angle slightly to the North of the centre line of the stairs. There are no signs of any terrace-like structure in this enclosure. Beyond this enclosure a further, much narrower one extends down the hillside to the East. By this date, garden terraces are shown

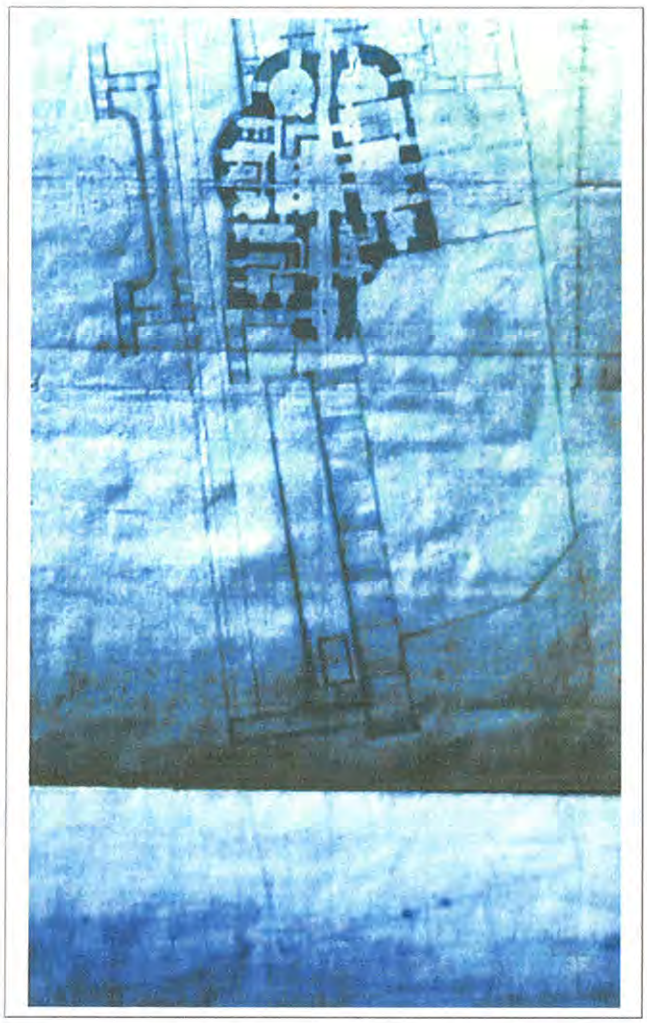


Figure 2 Extract from plan of 1752

along the full length of the South side of the castle, very much as they exist today and continuous with those depicted on Bleaze's plan.

The Bowling Green area East of the keep is depicted as a featureless enclosure defined by sections of straight wall, rather than the smooth curve shown by Bleaze. There are no towers and superficially the whole Eastern end of the castle resembles the structures that survive today. Certain key differences do exist however.

The High Terrace is shown as an upstanding structure the same size as it is now, topped with a structure at the East end which has been interpreted in the past as a banqueting house. A broad stair with equally-spaced landings (this is important as will become evident) leads to the keep between the High Terrace and the Bowling Green and the walls flanking this are terminated at their Eastern (lower) extremity with two large piers, one each side of the lowest flight of steps. This differs from the current layout in that the piers no longer exist and the landings are not equally spaced. Running approximately North to South across the East end of the High Terrace is a narrow terrace adjacent to the gardens further South and accessible by a gateway in the wall flanking the South side of the stairs. This terrace is shown as having a parapet and at the South end of its East wall is another gateway linking it to the uppermost parts of the Southern garden.

There is an open space adjacent to the North side of the keep, separated from the Bowling Green by a wall to the East, and from the rest of the castle by the end of a thin-walled domestic range to the West. This is now beneath later buildings but is implied on an elevation by Dineley (Dineley, 1684:2). The slightly contrast-enhanced image to the left suggests this space to have been a garden, perhaps kitchen plots.

### *3.3.1.3 Pritchard, 1771*

This is the second surviving measured plan and shows the garden layout around the castle in more detail (the 1752 plan is perhaps best regarded as a structural survey). Most elements of the Eastern part of the castle haven't changed in the previous nineteen years although the High Terrace seems to

support a second small structure, this time near its Western end although its identity is unknown. The Northeast corner of the Bowling Green is shown as a smooth curve and the open area to the North of the keep has now been built upon.

One change is that the width of the North to South terrace across the East end of the High Terrace seems to have increased and there is no sign of the wall separating it from the stairs to the North. The stairs seem not to have been altered although it is unclear whether the two flanking walls still retain their terminating piers; there are small marks on the plan which suggest that they do. Three parterres are shown in the garden, two to the North and one to the South, overlooked by

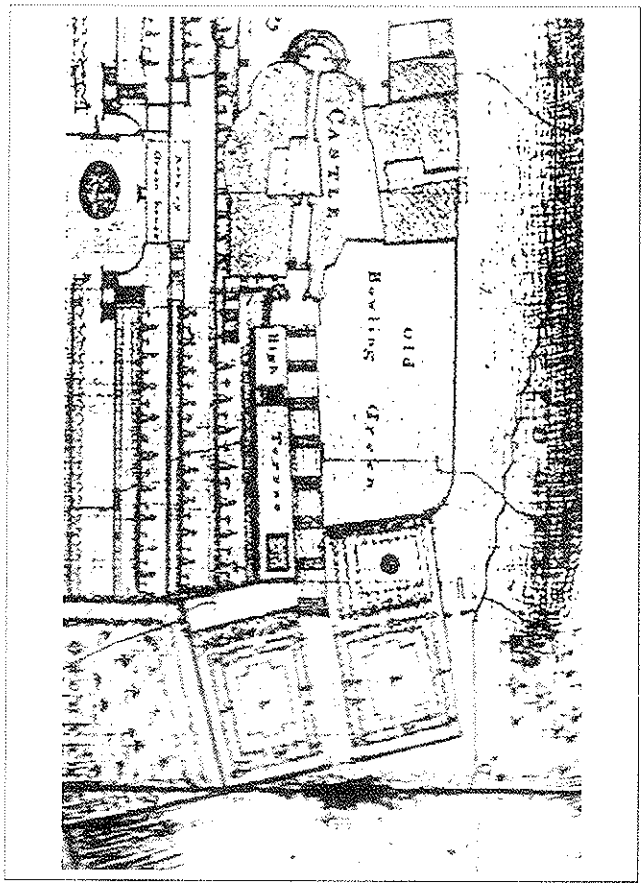


Figure 3 Extract from Pritchard, 1771

the North to South terrace and separated from it by a notation perhaps symbolic of bushes. The gate piers in the East wall of the garden are still evident but the narrow Easternmost enclosure has apparently been subsumed into the parkland.

Further, perhaps empty, terraces are shown to the South of this garden, above an enclosure labelled as an orchard. These are not shown on the 1752 plan.

### *3.3.2 Primary evidence - Elevations*

#### *3.3.2.1 Dineley, 1684:1*

Dineley's pictures are line drawings and show an extremely distorted sense of perspective. For the purposes of this study though it is assumed that he portrayed real structures and that the only distortion is perspective. This means that structures the same distance from the observer should appear in the drawing as being the same distance away and that the sequence of features extending away from the observer should still be correct. The pictures are extremely detailed and form the second earliest resource available to this evaluation and one of the most important for understanding the medieval castle.

The first drawing depicts the whole East front of the castle, with the keep and Bowling Green in the background and the gardens in the foreground. There are various elements that cannot be adequately discerned but the following provides a summary of the major features.

Starting from the keep in the background and working towards the viewer, Dineley shows the High Terrace in its lengthened form with the banqueting house on the East end and the great stair passing down its Northern flank. There is a wall extending North from the keep dividing an open area in front from an enclosure behind (compare this with the 1752 plan, section 3.3.1.2, above). The Northern edge of the Bowling Green seems to be defined by bushes but the Eastern edge by a wall, probably with a balustrade (this is shown in more detail in the next drawing, section 3.3.2.2). In front of this there is another wall, although whether this is really within the Bowling Green rather than in front is difficult to tell. It is drawn as being tall, almost level with the top of the High Terrace, and might therefore represent a section of medieval curtain, as implied by Bleaze in 1629. In the other Dineley drawing this same wall

has another balustrade. A section of medieval curtain is a strong possibility, even if modified, because immediately in front of the Southeast corner of the High Terrace Dineley has clearly depicted a stout drum tower, again implied on the 1629 plan (Bleaze, 1629).

East of the High Terrace the garden enclosure shown on the 1629 plan is depicted as defined by high walls around the East and South sides; the North side is obscured by trees. No details, other than the occasional tree next to the wall, are visible

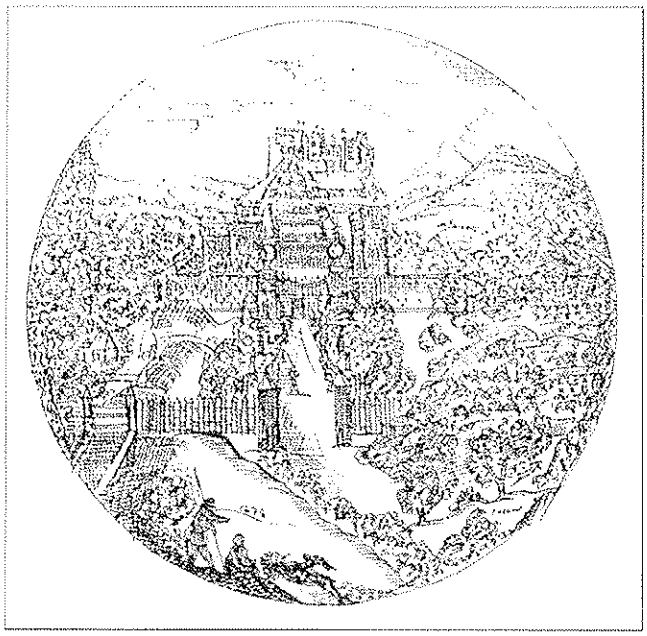


Figure 4 Extract from Dineley, 1684:1

within the structure but it would seem to be a fairly private garden. The entrance is shown to pass through two very tall gate piers, surmounted with large stone balls and supporting what seems to be a pair of gates. The piers are identical to those supporting the present Marquess Gate (assumed to date from 1707 from a reference in the estate accounts), however, the gate between them, if Dineley can be relied upon, is completely different. The accuracy with which the piers are drawn suggests that the drawing is reliable.

Within the Northern part of this enclosure stands a small tower, apparently not connected to other structures but free-standing with a balustrade. It seems to be square and of perhaps two or three floors. It does not survive now and is also absent from Bleaze's plan suggesting a later addition.

To the East of this walled enclosure the entrance, not illustrated as a surfaced road but more a grass walk, passes between two lines of trees, passing up the hill side. These must be part of the avenue depicted on Bleaze's plan (Bleaze, 1629). Towards the bottom of this picture, in typical pastoral setting, is the edge of open parkland with a timber park pale, perhaps a deer fence, crossing the entrance which passes between two large posts with some sort of pointed cap on each. Slightly further along this palisade to the South is a second, much smaller, entrance, with either steps or perhaps a paved way leading up to it from the Southeast. Between this gate way and the larger one, within the enclosure defined East of the garden by the palisade, some large mounds seem to occupy the available space. These cannot be explained from this drawing alone, but with reference to the geophysical interpretation elsewhere in this report (section 4), they may represent earth moving related to the in-filling of an earlier terrace feature suspected in this region.

### *3.3.2.2 Dineley, 1684:2*

The second elevation of the East part of the castle by Dineley is a detail of the grand stair leading up past the High Terrace to the keep and seems to emphasis in exaggerated terms the grandeur and modernity of the East front. It is faithful to the other drawing in form which again suggests the essential realism of his work but raises some interesting questions concerning the exact form of the stairs. These are shown to have a single flanking wall to the North, terminated at its East end by a squat pier and another similar wall to the South, again terminated in a pier and quite separate from the adjacent wall of the High Terrace. There are two opposed breaks in each wall, those to the North may indicate the positions of gate ways into the Bowling Green to the West, and the prospect tower (see below), to the East. Those in the South wall are more difficult to interpret; the Eastern one may coincide with the gateway shown on the 1752 plan giving access to a narrow terrace against the foot of the High Terrace, however, there is no evidence that this structure existed this early and it may also conflict with the Southeast drum tower drawn by Dineley. The opening to the West may

be blind, to balance the real opening in the North wall opposite. It is worth noting that there are too few flights of steps in this stair according to the later plans.

The three North to South walls defining the Bowling Green are clear in this drawing, as is the enigmatic tower standing in the Northern part of the garden. Its large mullioned and transomed windows on the top floor suggest the need to guarantee a view from its interior, reinforcing the impression that it was built, or at least, converted, for use as a prospect tower over the garden and surrounding park. Its apparent absence on Bleaze's plan (Bleaze, 1629) may imply that it is a fairly late structure, perhaps contemporary with the construction of the garden rather than any earlier. The balustrades atop all the walls, including those suspected to be of medieval date (e.g., those around the Bowling Green, and perhaps the High Terrace) suggest that an extensive programme of

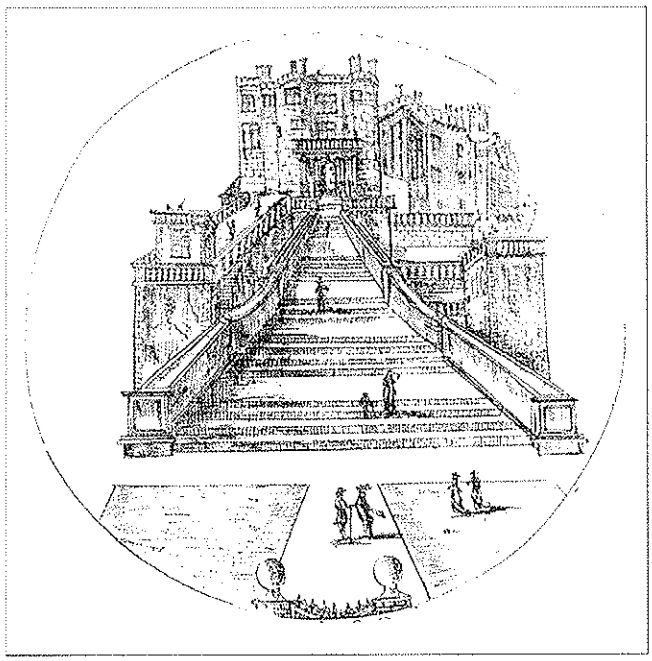


Figure 5 Extract from Dineley, 1684:2

renovation had occurred before this drawing was made in 1684. This may explain the absence of the small tower shown by Bleaze in 1629 within the Bowling Green; the enigmatic square one may have been a replacement of a medieval structure unsuitable for conversion to a prospect tower.

The High Terrace is shown in detail and particular attention has been paid to the illustration of its quoin stones at the East end, but not to the masonry between which seems instead to have large cracks in it! This may imply that the end was in fact stuccoed, with the quoins left visible; the 'cracks' may signify that the stucco was peeling away. The detail of the banqueting house suggests the same surface treatment as, unlike the other structures, no attempt has been made to even imply masonry. Somewhat frustrating for the purpose of this evaluation is that the drawing has obviously been intended to highlight the grand stair (shown disproportionately wide) and not the surrounding structures which means that the drum tower to the Southeast, though there according to his first drawing, is obviously absent in this one, though perhaps slightly off the edge.

The garden layout is hinted at as being grass rectangles surrounded by surface, perhaps gravelled. The same gate and gate piers are shown in the foreground.

### *3.3.2.3 Buck, 1742*

Buck depicts the castle from the South from across the gardens and shows the layout of the property without providing much information about the East end of the castle. Trees are shown extending right up to the East end of the High Terrace and the South end of the North to South terrace at its foot has a balustrade at its Southern end.

The banqueting house is visible on the end of the High Terrace which has a noticeable forward-projecting section right at the East end. This is where the drum tower illustrated by Dineley may have joined or been butted by the South wall of the High Terrace.

### *3.3.2.4 Munn, 1817*

This picture was made from a point on the High Terrace, near its East end, showing the central area of the terrace to be different from the North and South sides. The South side has benches and bushes with what appears to be a paved area adjacent to the balustrade; perhaps the central area was a grass surface. The North side is marked by a

broad bed in which various low bushes have been planted. Unlike earlier illustrations, e.g., by Dineley in 1684, there is no North parapet.

The stairs are visible but not drawn in detail but

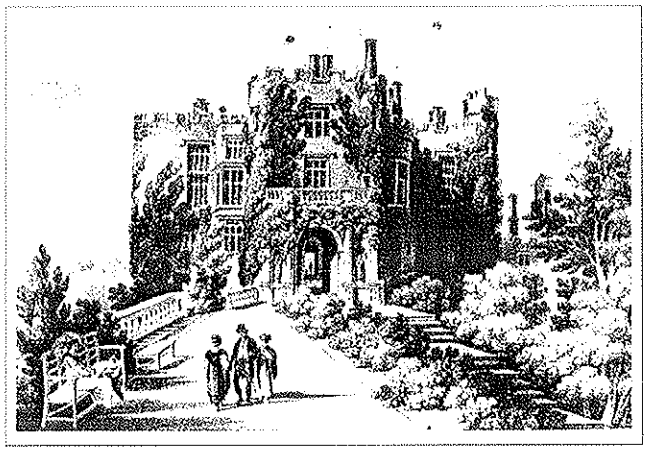


Figure 6 Extract from Munn, 1817

sufficient exists to see that unlike the earlier illustrations by Dineley (Dineley, 1684:2) there is no North flanking wall and there are trees in Bowling Green, not just around its edges. These differences suggest substantial changes had occurred by this date with the emphasis on naturalistic surroundings rather than the formal designs of earlier.

### *3.3.2.5 Buckler, 1822:1*

Buckler made three line drawings of the East end of the castle, all from close to the keep. This one was drawn from the top of the High Terrace from a point estimated to be about two-thirds of the way along its length to the East. It is only a sketch and hence the level of detail is low, but a good overall impression is given of the East facade of the keep, with its three floor gatehouse (later raised by a further floor) and the oriel window in its Southeast angle. The gatehouse is wreathed in vegetation but it seems to have been a fairly plain structure with a simple un-ornamented crenelated parapet that continues unbroken onto the building beyond.

The stairs to the keep are not shown and there is no sign of a parapet on the North side of the High Terrace; instead there seems to be a wide bed with medium-sized bushes and perhaps even small trees. It is in keeping with the very naturalistic designs of the time. Note that the bushes shown may be those shown by Munn in 1817 (Munn, 1817) in which case there has been a definite increase in their height. This may indicate that they had been fairly recently planted before Munn's illustration.

### *3.3.2.6 Buckler, 1822:2*

The second drawing shows the keep and gatehouse from the Northeast, from a point near the North edge of the Bowling Green. This is shown as a grassed surface with isolated trees and bushes around the edges. The large trees drawn by Munn seem to be absent. The only feature of interest in this drawing is the abrupt slope up to the keep walls in the Southwest corner of the Bowling Green. This survives today and may hint that little landscaping activity has occurred within this area since the 1820's.

### *3.3.2.7 Buckler, 1822:3*

This drawing is a view up the stairs to the keep and gatehouse and shows clearly the lack of a wall to the North of the stairs and the vegetation-covered

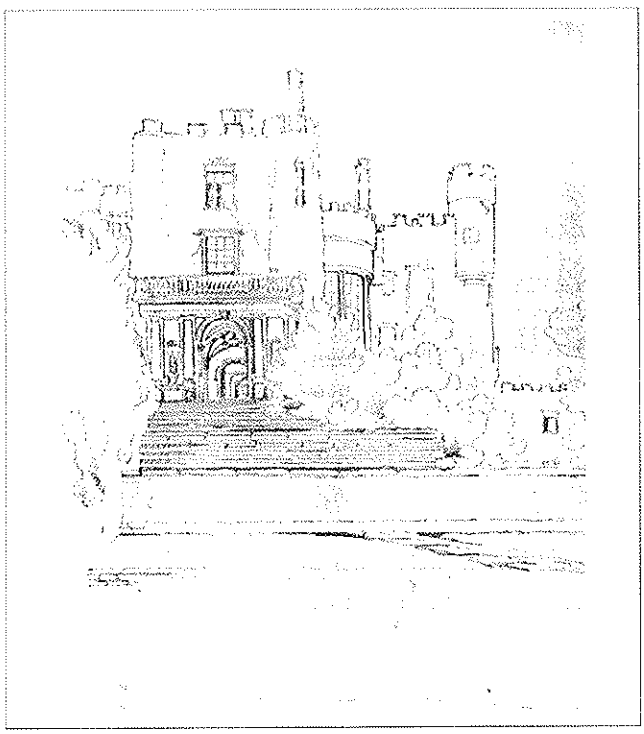


Figure 7 Extract from Buckler, 1822:3

North edge of the High Terrace. The stairs themselves seem to have a stone drain centrally and are encroached upon at the top by trees in the Bowling Green.

### *3.3.3 Secondary evidence - Elevations*

#### *3.3.3.1 Marlow, circa 1775*

A painting, attributed to Marlow, depicts the North side of the castle, a rare subject, in a setting evocative of faded glory and as such potentially of distorted proportions. However, it is useful in that it confirms the wall of the Bowling Green to be devoid of additional structures, as suggested by Pritchard (Pritchard, 1771) and the earlier 1752 plan. It also shows the wall to be relatively low, only extending to a little above head height, far lower than a medieval curtain and so probably the same wall as exists today. The large service building immediately North of the keep is also shown, whereas the 1752 plan shows this to be an empty space. It is not possible to say whether the painter made a mistake but the large Northern ditch of the castle is depicted in use as a road at this date, although the vertical scale of the painting is questionable.

#### *3.3.3.2 Cox, 1845:1*

This shows the stairs and the High Terrace in a view looking East out over the park and the trees and shrubs planted along the North edge of the High Terrace are now quite large, with more trees growing along the terrace adjacent to the South parapet. The Marquess Gate and the two earlier gate piers are near the bottom of the stairs in their present position and the stairs themselves are paved with square stone setts as they are today.

#### *3.3.3.3 Cox, 1845:2*

A highly romanticised drawing that shows clearly that the High Terrace is a feature formed by terracing the hillside rather than being a masonry structure. There doesn't seem to be a courtyard in the angle between the High Terrace and the stairs leading from the keep down to the uppermost of the Southern terraces, as there is today. This may imply that the courtyard is a relatively late feature. The termination of the High Terrace before it reaches the keep suggests that it ends at where there may once have been a deep ditch separating the keep from the East bailey, later blocked by the continuation of the stairs upwards across by means of the irregular shaped landing in front of the gatehouse. If so, the Cox drawing may show the edge of this ditch in section as a break in the exposed rock face where that courtyard is now situated.

This is the last illustration to show the old form of the keep gatehouse with three floors.

#### *3.3.3.4 Country Life, 1901*

The photograph from a Country Life magazine of 1901 is surprisingly useful as it demonstrates the recent origin of some of the present features of the East end of the castle. This is the only illustration showing the construction of the stairs with grass or gravel landings between each flight and with stone drains central to each landing. The photograph shows the stairs to be extremely worn with plenty of localised cracking and settlement. The North flanking wall is still absent, although a truncated section projects from under a bush near the present entrance to the Bowling Green. The edge of the stairs themselves show signs of damage, probably related to their lack of support, or were they deliberately "slighted" to soften their appearance in keeping with the naturalistic look of the previous century? This idea is supported by the way trees from the Bowling Green have been allowed to encroach onto the stairs in Buckler's drawing (Buckler, 1822:3), section 3.3.2.7.

### *3.4 The illustrated structural chronology*

It is possible to collate this set of illustrations into a sequence of structural changes and innovations, although the medieval fabric of the castle had been all but removed by the earliest elevation drawings (Dineley, 1684). Both Bleaze in 1629 and Dineley in 1684 both suggest that medieval fabric existed in the form of a large drum tower at the Southeast corner, adjacent to the end of the High Terrace

and similar to one excavated at the Southwest corner where the public lavatories now are. This tower seems to have been linked by a curtain wall with no obvious gate tower to a further, smaller tower at the Northeast corner, from where the curtain wall continued round the North side of the Bowling Green to somewhere West of the keep and presumably ultimately the surviving mural tower within the Northwest range of the castle. East of the curtain, and between the two towers there seems to have been a terrace or perhaps an access ramp aligned Westwards towards an entrance in the wall which is not visible however. The High Terrace, in today's extended form, seems to feature on Bleaze's plan and is definitely depicted by Dineley and hence must be an early feature even in extended form; today it is probably the oldest surviving feature and possibly older than the current keep building.

By 1684, the Southeast drum tower still stands and possibly a section of the curtain wall, however, the Northeast tower has gone and the grand stair has appeared adjacent to the High Terrace. It must have had a predecessor but in the form depicted in 1684 it is clearly not a medieval feature. It is sensible to assume that any ditch between the keep and the East bailey was filled in around this time as the stairs continue right up to the gatehouse of the keep. The terrace or ramp to the East of the structure has disappeared, and been replaced by a large walled enclosure with two large gate piers in it's East side. Thus implies the conversion of the medieval castle into more of a residence with gardens surrounding it. The presence, however, of the remaining drum tower and the large mounds depicted by Dineley in the Southern part of the outer enclosure may suggest that this conversion was still underway during his visit. The gate piers seem to be those that are now near the base of the High Terrace, supporting the Marquess Gate although this gate is not the one that they supported in 1684.

Another addition, dating from between 1629 and 1684, is the prospect tower in the East garden and just to the North of the stairs. This implies that there were gardens here at that date, i.e., the walls didn't just define an outer enclosure. At this date there is no evidence for the short terrace that runs across the base of the High Terrace at it's East end. This transverse terrace is likely to have been added, in its original narrower form, when the Southern garden terraces were created circa 1703 to 1717 (NT Guidebook, 1996) in order that these might be linked to the apparently slightly older East garden, hence the gateways in each end of the terrace, shown on the 1752 plan. Demolition of the drum tower must have occurred between 1684 and circa 1717.

The numerous balustrades seem to have been added to older structures by 1684 and presumably the ones used for the new South garden terraces reflected their already ubiquitous use, if Dineley has not exaggerated. The gardens seem to have developed steadily throughout this period and the drawing by the Buck brothers (Buck, 1742) agrees with the plan of 1752, suggesting that no large alterations occurred after the construction of the Southern garden terraces until certainly 1752, and probably later still as the plan by Pritchard in 1771 shows essentially the same layout. The exceptions are a new building against the North side of the keep where there were previously gardens and the increase in thickness of the transverse terrace linking the garden terraces to the Eastern gardens. This increase in thickness is very evident if the plans of 1752 and 1771 are compared (and was also noted during excavation). By Pritchard's time, there would appear to be no surviving traces of the medieval fabric.

Pritchard was commissioned with William Emes in 1771 (NT Guidebook, 1996) to plan and conduct improvements to the park around the castle and after this date a series of changes seem to have occurred, mostly relating to a softening of the Baroque elements, e.g., the ubiquitous balustrades. By 1817, the parapet was missing from the North and presumably the East sides of the High Terrace and the wall flanking the North side of the stairs has also been removed. The stairs do not seem to have been paved, instead gravel or grass-covered landings seem to separate the flights. There are also trees growing in the Bowling Green and

shrubs planted along the North edge of the High Terrace. These alterations may have occurred not long before 1817 as these shrubs are fairly small on the 1817 drawing (Munn, 1817) but rather larger in 1822 (Buckler, 1822:1), suggesting that they hadn't reached maturity in 1817.

By 1845, the Marquess Gate seems to have been moved to its present position although the removal of the North flanking wall of the stairs by 1817 and hence presumably the South wall and the transverse terrace to which it was attached, may imply that the old East garden had been dismantled and the gate moved before 1817.

It is worth noting that the excavation produced a 1806 penny apparently related to the destruction of the transverse terrace, suggesting that the date range for the destruction of the garden could be narrowed to between 1806 and 1817.

The gardens seem to have been maintained in this form until at least 1901 when the Country Life magazine depicted them in much the same form as in 1845. It probably wasn't until 1911 when Violet, wife of the fourth Earl Powis (NT Guidebook, 1996), decided to restore the gardens, that the East end of the castle took on its current form, and the North flanking wall was rebuilt, apparently in its entirety, by G. F. Bodley.

### *3.5 Additional information from undated illustrations*

A postcard (J.V., unknown), thought to date from after 1904 shows there to be no North flanking wall at that date which implies the current wall is relatively recent. There is a simple iron railing fastened near the base of the Northeast corner of the High Terrace and extending down the slope in lieu of a wall on the South side of the stairs. A large grassed-over earthwork is visible at the foot of the High Terrace and this must be the remains of the transverse terrace.

The painting by David Cox, Junior, from Sotheby's in 1983, shows the Bowling Green to be heavily planted. This is also the first illustration to show the keep gatehouse with four floors instead of three. The painting must post-date 1845, the date of the other David Cox (not Junior) illustrations.

A drawing by an unknown hand and thought to date to the 1750's shows the castle from the Southeast and captures the somewhat ruinous state of the gardens reported by Byng slightly later in 1784. The terraces have a scrubby appearance and there are certainly gaps in the balustrades. With the date of Byng's comments in mind perhaps a date for the 1750's illustration closer to the end of the century would be more suitable? The drawing by the Buck brothers (Buck, 1742) shows the gardens to be in fine form which suggests the 1750 date could be too early. One of the balustrades that is missing in the later illustration is the one shown on the South end of the transverse terrace in 1742.

# Chapter 4: Information Source: Geophysical Survey

## *4.1 Preface*

The first element of the evaluation was an electrical resistance survey of as much of the area to the East of the keep as possible to determine the broad extent and nature of any buried features. It was thought that this was the most cost-effective way of attempting to determine the presence or otherwise of both medieval and post-medieval structures and hence provide a context for subsequent excavation. A fairly coarse sampling interval (1m x 1m) was used as would normally be adequate to detect the larger features, e.g., wall footings, that could be expected. The use of a finer interval was not considered necessary at this stage as the project design allowed for invasive sampling of some features. In the event fewer features were subjected to invasive study than planned due to the complexity of deposits and therefore a finer sampling would have been preferred.

## *4.2 Survey information*

### *4.2.1 Location*

None of the survey areas were strictly contiguous because they were separated in several places by vertical distances of a few metres. The areas comprised the High Terrace, the Bowling Green and an area of park immediately East of these structures within which the site of the former East garden should lay. It was originally intended to also survey the small enclosure Southeast of the High Terrace containing the Midlands Electricity transformer enclosure. This proved both too overgrown and too awkward a shape to allow a reliable interpretation to be made of the small area actually available for survey. It is probably also rather disturbed by the insertion of electric cables and the transformer itself.

### *4.2.2 Objectives*

One of the primary objectives was to determine whether any structures were concealed under the Bowling Green and especially to detect any components of the medieval structure that might indicate whether this area was a castle bailey in the past with a curtain wall. A second objective was to explore the potential for the survival of the formal garden to the East of the bailey, existing in 1771 (Pritchard, 1771), but now invisible, to determine whether the layout of the garden had survived sufficiently well to permit future restoration.

## *4.3 Location information*

### *4.3.1 History*

Very little was known about the history of any of the three areas although various assumptions could be made, e.g., the Bowling Green might have been a bailey of the castle. The High Terrace had clearly been altered in that it lacked both the planting on top shown on early illustrations (Munn, 1817) and also the North and East balustrades shown on even earlier illustrations (Dineley, 1684:2). The Bowling Green had lost several bushes and trees again shown on early illustrations (Buckler, 1822:3) but apart from that appeared to have been an area of only low usage for a considerable amount of time. The last area, in the park, had always been regarded as the "back" of the castle and in recent years has become a location for storage of materials away from the public gaze.

### *4.3.2 Description*

The survey on top of the High Terrace was carried as close to the edges of the terrace as safety permitted. For technical reasons the terrace was surveyed in two halves, East and West which were later recombined. The Bowling Green was surveyed over its whole area, again as close to its edges as safety would allow and up to the base of the keep. Small areas around the edges were not surveyed due to the presence of bushes and a slightly larger area in the Northwest corner, occupied by bushes and a peacock enclosure. In the parkland there were few constraints on survey and it extended over as large an area as could be accommodated in the available time, limited to the South by a fence and to the North by a belt of

trees and tall undergrowth. Survey was continued Eastwards for just over 70m to ensure that both the site of the garden shown on Pritchard's plan (Pritchard, 1771) and an area outside it were surveyed.

### *4.4 Environmental information*

- Weather: Mixed sunshine and showers after a spell of heavier rain
- Geology: Drift: variable, likely to be cultural rather than natural. Solid: coarse gritty sandstone
- Soils: Topsoil over materials of unknown nature
- Ground cover: Short mowed grass on High Terrace and Bowling Green, grazed coarse pasture in park with substantial patches of nettles to the North.

### *4.5 Survey methodology*

#### *4.5.1 Instrumentation and sampling*

- Instrument: Geoscan Research RM15 twin probe resistance meter, 0.5m mobile probe spacing, ~3m (variable) remote probe spacing and 1mA current injection

- Sampling: 1m station interval along lines 1m apart, data collected in 30m grids in a zigzag pattern

Figure 8 RM15 electrical resistance meter

A method statement for electrical resistance survey is included as an appendix to this report.

#### *4.5.2 Methodological discussion*

An electrical resistance technique was chosen on the basis that it should be able to detect the changes in ground resistance caused by buried walls and in-filled pits and ditches, all of which could be evident and useful for defining castle and garden features and later additions at Powis Castle. As this was only intended as a prospecting survey the fairly coarse sampling interval was used to maximise speed and coverage rather than attempting to produce detailed plans of features. This is usually sufficient to identify common features, especially pits, ditches, and fairly thick walls. Thinner walls and subtle features could escape detection however. The 0.5m probe spacing should be sufficient to detect features buried up to perhaps 0.3m or 0.4m below the surface; the rain before the survey would have the effect of increasing the visibility of deeper features, unless the overburden was too saturated. This happened at the West end of the Bowling Green where the ground was extremely wet and mossy and the average electrical resistance had been substantially reduced. A zigzag survey pattern was chosen to maximise speed of coverage. As expected, the larger features were well resolved but under better environmental conditions a 0.5m line spacing is likely to produce a more informative result.

### *4.6 Processing and interpretation methodology*

#### *4.6.1 Software*

Data was downloaded from the RM15 into the InSite visualisation software for convenience but transferred via in-house software into Surfer for interpolation and display. Conventional survey data from Quintdraft was simplified and rotated to form a plan onto which the geophysical data could be superimposed.

Since this survey was completed in 2000, the processing suite has been changed and a newer version of Surfer used to form the images in this report. Reassessment of the data has led to the

clarification of some existing anomalies but no new features have been identified.

### *4.6.2 Processing*

Processing of the raw resistance data was kept to a minimum because 1m resolution data is easily distorted by over-processing creating defects larger than some features that might be expected at Powis Castle. The data was simply interpolated (radial multiquadric with no anisotropy) to a regular 0.25m x 0.25m grid that honoured the original data and then the very lowest and highest resistance values removed to improve the visibility of low-amplitude anomalies. In some cases high-pass filtering to remove large trends in the data can be beneficial in that the small scale variations due to archaeological sources can be clarified. At Powis Castle a similar effect has been achieved by using 3D (false relief) imaging techniques (see section 4.8.1).

## *4.7 Presentation methodology*

### *4.7.1 Graphical presentation*

The most basic form of image used to visualise the electrical resistance data from Powis Castle is a linear 'greyscale' image. These show long-distance and high-amplitude variations but obscure smaller variations caused by archaeological sources. This was expected to be a particular problem at Powis because the wet weather before the survey had created near-saturated areas of soil which can lessen the visibility of small-scale irregularities. To improve the clarity and to allow the full dynamic range of the data to be visualised, false-relief plotting was employed where subtle variations become visible as small peaks and troughs in the image. This is an especially powerful technique for visualising textural changes in the data and has been important for detecting the line of the grass drive up to the castle from the East. Comparison of the images in this report should make the benefits clear, especially for the survey in the parkland where enormous changes in average resistance were encountered over an extremely large very high resistance feature in the Southern half of the survey.

### *4.7.2 Written discussion*

Each area of survey is described separately in terms of the geophysical anomalies. An archaeological interpretation is presented in graphical form for ease of understanding. The description is usually divided into five parts in this report, based upon the amplitude of each anomaly relative to a nominal background. For some areas with only small numbers of suitable anomalies one or more parts may be merged. The parts are as follows; highly resistive, mildly resistive, low resistance and very low resistance, followed by textural differences and other less defined elements of the data. These represent the basic elements of the interpretation from which an archaeological interpretation can be formed.

## *4.8 Retrospective assessment*

### *4.8.1 Data quality*

Overall the data quality was high with no surveyor or instrument induced defects. It was affected by surface conditions after the recent rain, visible as a fairly uniform low-resistance background, especially within the Bowling Green and this may have obscured features that were more deeply buried. This is difficult to quantify and for this evaluation it was sufficient to indicate that the various survey areas did in fact contain artificial structures and were therefore of archaeological significance.

As expected, the edges of the survey on the High Terrace were affected by the narrowness of the structure and its large height above the surrounding ground which together distorted the electrical current paths creating regions of high resistance near the edges. There are larger genuine variations which will be discussed later.

Changes occurred in the background resistance of the park overnight after rainfall so the various parts of the survey in the park had to be matched together during processing. Some extremely large anomalies of archaeological interest have had a large impact upon the statistical distribution of the data and hence matching has not been perfect between the East and West halves of the survey.

### *4.8.2 Achievement of objectives*

The original objectives were achieved in that all the specified areas were surveyed and significant quantities of archaeological features found. There was only minimal interference from local ground and weather conditions though the weather did influence the results and re-survey in different conditions could reveal more features.

The excavation has revealed that some features are deeply buried and hence may lay below the depth of maximum sensitivity of the resistance meter. A deeper-penetrating probe array could be used to test this, e.g., a multiplexed meter (as illustrated) which could sample two different apparent depths simultaneously. The areas most likely to benefit from this are the Bowling Green and parts of the area within the park.

## *4.9 Geophysical results*

### *4.9.1 High Terrace*

The results from the High Terrace are relatively simple, although not entirely as predicted. The structure seems to be divided into three areas of different resistance along its length with the most prominent at the Southeast end where an abrupt increase from Northwest to Southeast of approximately 60 ohms is apparent, especially in the Northeastern half, just over 10m from the East end. A similar, but much less well-defined increase occurs at the Northwest end, approximately 30m to 35m from the Southeast end. This is further complicated by an approximately linear high-resistance anomaly extending for about 10m

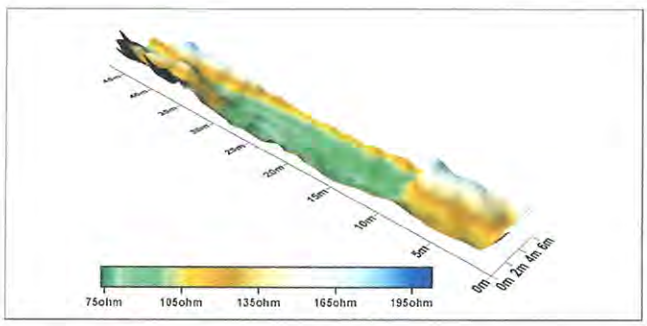



Figure 10 Perspective image of data from high terrace

along the length of the High Terrace at a slight angle to its axis. When examining the false relief images of this survey an indistinct linear high-resistance form seems to continue Southeastwards along the terrace. There is very little spatial variation in resistance values except at the locations previously mentioned and there are no other anomalies likely to be of archaeological significance.

### *4.9.2 Bowling Green*

#### *4.9.2.1 Preface*

This area was expected to provide evidence for structures within the former East bailey of the castle. At first glance the survey data shows very few anomalies of obvious archaeological interest, however, close inspection reveals several significant results, most of which seem to relate to features unconnected with the extant fabric. Some of the mildly resistive anomalies are fairly indistinct and would benefit from test excavation as they are of such low amplitude it is impossible to be certain

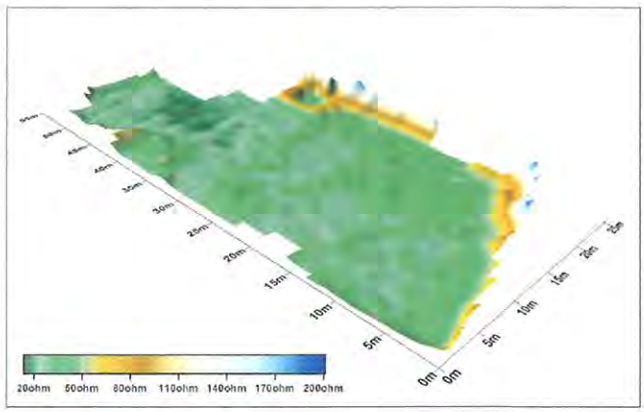



Figure 9 Perspective image of data from bowling green

of their exact form. This faintness may imply that the features are either extremely ephemeral or may be buried at a slightly larger depth than can be resolved by a probe array as used here.

#### *4.9.2.2 Very high-resistance anomalies*

The most prominent anomaly is a square feature approximately halfway along the Northeast edge of the survey, next to the present retaining wall. This is apparently a building defined by masonry walls probably only a little beneath the turf and with perhaps a gap in the Northwest side. There are no corresponding earthworks at this location and therefore its destruction would appear to predate

any landscaping that may have occurred in this area.

Another significant very high-resistance anomaly is visible at the foot of the gatehouse to the keep as a right-angled feature. This seems to be an area of fairly uniform high resistance and may represent a buried structure. It is aligned at a strange angle compared with the extant structures around it, including the medieval gatehouse.

The only other prominent anomalies are adjacent to the wall supporting the Northeast and Southeast sides of the Bowling Green. It was thought initially that they were artefacts caused by surveying close to this wall, however, when compared with the curve of the wall they were seen to be unrelated, suggesting that this is only part of the source of the anomaly and that other structures must exist, perhaps a thicker wall.

#### *4.9.2.3 High-resistance anomalies*

There are several faint linear anomalies that are often no more than 10 ohms more resistive than their surroundings which puts them well within the 'background' variation of the Bowling Green. This background variability may be caused by the presence of inhomogenous soil perhaps as a result of landscaping and the grubbing-out of trees and other garden-related activities. The anomalies of interest are visible against this irregular background because they form coherent linear forms and may therefore be caused by buried structures. They can be divided into two groups by location, the first right at the Northwest end of the survey against the base of the keep. These are indistinct but are aligned at an angle to the existing structure where they seem to define some sort of structure but not sufficiently well to permit identification. A significant anomaly is the abrupt change in resistance between the Southeastern edge of these features and the area more towards the centre of the bowling green. This implies a buried structure but its form is unknown.

The second group is situated approximately half way along the survey in its Northeastern half, centred at (8, 25). A roughly-defined rectangular shape is visible at angle of approximately 45 degrees to the survey. There are a few faint linear anomalies adjacent to this feature that share the same orientation but they are too ill-defined to permit identification.

#### *4.9.2.4 Low-resistance anomalies*

Crossing the survey from its Southern corner and extending towards the Northern one is a faint linear low-resistance anomaly which coincides with the trench for a power cable. There are no other obviously modern features.

#### *4.9.2.5 Very low-resistance anomalies*

There are two anomalies in this class, neither of which is particularly well defined and are therefore difficult to interpret. The larger of the two is an amorphous area within the Western half of the survey while the smaller is immediately parallel and adjacent to the mildly resistive anomalies at the foot of the keep. The larger one may not be of archaeological significance because its size and shape suggests that it may relate to irregularities in the geology. The smaller one is more interesting as it coincides with known resistive features, e.g., walls, and is therefore likely to be related. Conversely, the existence of a low-resistance anomaly at this location may result directly from these other features. Limited test excavation would allow this to be examined.

#### *4.9.2.6 Textural anomalies*

This last class of anomalies could be described as 'pattern' anomalies, i.e., those where the shape of the anomaly is ill-defined or comprises a repeating set of very low-amplitude anomalies. These can be extremely difficult to interpret, and are often artefacts of land-use.

One such anomaly is present at Powis as a circular form approximately 7m in diameter centred on approximately (15, 26). It corresponds with a circular parch mark noticed during the Summer of 2000 and is therefore likely to be of archaeological significance. It is not entirely clear whether it is a local increase or decrease in resistance although the latter is favoured; it may also be defined by a small increase in resistance immediately around it.

### *4.9.3 Park*

#### *4.9.3.1 Preface*

The area of survey in the park was intended to evaluate the survival of the formal garden; in practice the data was dominated by other anomalies that both obscured traces of the garden and showed a more complex evolution for this part of the castle than could have been predicted. Some traces of structures were found, however, that seem to relate to elements of this garden.

The extreme change in resistance from North (relatively low) to South (very large) makes the classification of resistive anomalies by amplitude somewhat arbitrary, however, the classification used here segregates anomalies by their amplitude relative to their immediate surroundings.

#### *4.9.3.2 Very high-resistance anomalies*

Strong linear anomalies are present aligned approximately Northwest to Southeast in the Southern half of the survey within a large area of generally high resistance. Within this same area there seem to be further, more amorphous, anomalies of this sort e.g., at (-16, -57) and (-15, -37), suggesting a fairly irregular subsurface with some element of formal structure.

At approximately (20, 3), a very high-resistance anomaly is present right in a corner of the survey where it would appear to extend beyond the survey edge, further to the Northeast. It is thought to coincide with the site of the outside edge of the bailey ditch.

#### *4.9.3.3 High-resistance anomalies*

The survey is dominated by a single abrupt change in background resistance between the Northern and Southern halves of the survey, in some places as much as 100 ohms which is large in an archaeological context. This abrupt change (over less than 3m in places) suggests a fairly massive buried structure with substantially increased local drainage. For these high resistance values to occur in the conditions experienced during survey, i.e., damp weather, the soil would have to drain extremely rapidly, which would not happen if the high values where caused by shallow bedrock. The only likely interpretation is for almost the whole of the Southern part of the survey to comprise rubble, probably with voids, extending to a significant depth below the surface so that water is drained from the soil increasing the electrical resistance.

Immediately adjacent to the stairs at the foot of the High Terrace is a well-defined high-resistance anomaly with an extremely abrupt transition along its Northeastern edge, suggesting the presence of a buried structure beneath the grass slope here. It continues beyond the edges of the survey and up to the foot of the High Terrace to the Northwest.

Centred at (5, -5) is an isolated anomaly with perpendicular sides measuring approximately 5m x 6m. This regular shape implies that an artificial structure must exist at this location, probably masonry or rubble.

Various other significant anomalies exist, mostly linear but one at (7, -30) seems to be a square measuring up to 3m on a side (the actual feature is likely to be smaller, potentially only a metre or so because the apparent size is distorted by the relatively coarse 1m sampling interval). Extending both Northeast and Southeast of this are two narrow perpendicular linear anomalies, one aligned with a similar anomaly extending Northwest from the Southeast edge of the survey at (7, -60). Further Southeast are two more perpendicular linear anomalies that join at approximately (1, -50). These are aligned at approximately 45 degrees to the previous pair and do not seem to be related to them. Approximately 10m further to the Southeast is another pair, less well defined but parallel to those just to the Northwest and therefore possibly part of the same complex of features. It is difficult to interpret these features on the basis of the geophysical data alone but comparison with the documentary evidence allows their exact identification which is fortunate (see section 4.10.3).

#### *4.9.3.4 Low-resistance anomalies*

These form a discrete group and all are known to be caused by relatively modern trenches excavated for the installation of services to the castle. The most Western one wraps around the base of the

stairs and is thought to be the trench for a power cable passing from the transformer across the Bowling Green to the keep. Another pair are thought to be drains and an isolated one further to the East is apparently a telephone cable.

#### *4.9.3.5 Very low-resistance anomalies*

Very low-resistance anomalies are ill-defined here which suggests that they are either related to natural variations in the subsurface or are caused by very broad or deep features. In the parkland they seem to be concentrated against the Northeast edge of the high-resistance band running Southeast to Northwest. This may imply that they are related although it is difficult to qualify this from the data alone. This alignment is also shared, however, by the line of the Eastern approach to the castle and therefore this is probably the origin.

The area centred at (-3, -34) has a noticeably straight Northwestern edge which, although coincident with the join between two separate areas of survey, is too large a change in amplitude to be accounted for by this alone. This may therefore be related to the linear mildly resistive anomalies noted immediately to the Northeast in section 4.9.3.3.

At the Northwest end of this survey a discrete area of low resistance approximately 4m in diameter is crossed by the anomalies of the two pipe trenches at (-2, -7). This feature may be a large pit back-filled with soil in antiquity and unless it is the site of a redundant inspection pit it seems likely to predate both pipes.

### *4.10 Archaeological interpretation*

#### *4.10.1 High Terrace*

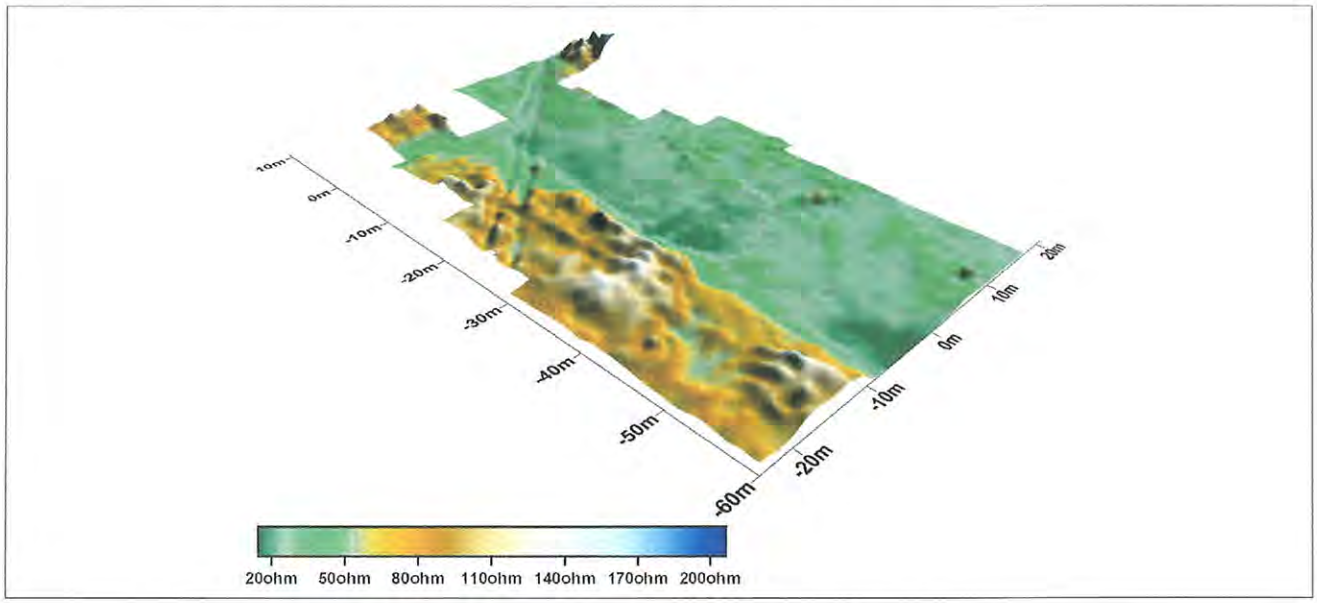



Figure 11 Perspective image of data from park survey

The High Terrace is comparatively straightforward to interpret, essentially because it is a fairly small structure in plan. There are two components to the interpretation, the more major being the large and abrupt increase in electrical resistance at the Southeast end of the structure. This seems to occur along a line perpendicular to the axis of the structure and would seem to imply that the construction of this end is different from further to the Northwest. Examination of the structure at this point revealed that the change in resistance coincides with a straight (butt) joint visible for almost the full height of the North face of the terrace, thus confirming that the difference in resistance does indeed indicate a different build. To account for the change in resistance a difference must exist in the fill of the structure and it seems likely that because the Southeast end is an extension of the original terrace (built onto rock) it has been constructed by creating a hollow structure and then filling it with stone rubble and other material.

The other component is the approximately linear high-resistance feature extending along the top of the terrace from the Northwest end. It does not appear to be a drain although such a feature could be expected here.

### *4.10.2 Bowling Green*

#### *4.10.2.1 Possible medieval tower*

The clearest structure implied by the geophysical survey is the pronounced square building at (23.5, 35), measuring approximately 7m from Southeast to Northwest and 6m from Southwest to the present Bowling Green wall. In this position, on the supposed line of the medieval curtain wall, it seems likely that the structure was a small mural tower, possibly originally projecting slightly to the exterior of the curtain. There is a large area of different masonry in the Bowling Green wall at this point which may indicate that the structure once projected further to the North. The walls would appear to be between 1m and 2m thick and the masonry is thought to be fairly close to the present surface.

#### *4.10.2.2 Curtain walls*

At a couple of locations, e.g., (17.5, 4.5) and (25, 22), around the Northeastern and Southeastern edges of the survey linear high-resistance anomalies were noted that at first sight appeared to be artefacts introduced by surveying so close to the back of the existing retaining wall. When compared with the modern site plan, however, they seem to be discontinuous and describe a slightly different shape especially along the Northeastern side and at the East corner. This is thought to be the rear edge of the curtain wall once suspected to enclose this area and presumably forming a slightly more rounded shape than the present one. This implies that the masonry of the present retaining wall is not the curtain wall but a facing, perhaps applied to the remains of an older wall behind. This may help to explain why there appears to be a relieving arch projecting beyond the present face of the wall at the East corner, see section 5.2.2, but apparently cut back to be flush with the current face.

#### *4.10.2.3 Circular structure*

The amorphous anomaly described in section 4.9.2.6 above is difficult to interpret but may simply be an old flower bed or similar. Alternatively it may relate to a laminar element of the substructure, e.g., an old floor. If there was any wartime activity at Powis it could represent the base of a searchlight platform or other circular foundation.

#### *4.10.2.4 Possible former gate structures*

At the base of the existing gatehouse, at (3, 43) and (4, 38), there are pronounced resistive anomalies that may represent the footings of a structure predating the present stair landing in front of the gatehouse, e.g., a bridge abutment or part of a barbican. Their alignment seems at odds with the present structure and there is very little evidence from which to form an interpretation.

#### *4.10.2.5 Buildings*

As noted in section 4.9.2.3, above there are various linear anomalies that might be related to the presence of buildings, those at (8, 25) forming a fairly convincing square or rectangular shape. If so, these may represent fairly thin foundations, perhaps originally supporting timber-framed buildings of unknown date or function. The somewhat diffuse nature of these anomalies prevents a more detailed analysis.

The second group of linear anomalies are right at the Northwest end of the area at (7.5, 52). These are again difficult to interpret but could also represent former structures. In this location, however, adjacent to the keep, they may be caused by old drains, perhaps in the form of relatively shallow culverts. A less prosaic interpretation is that the anomalies indicate the footings of some form of (small) pavilion for the bowling green, built in a sheltered position against the wall of the keep.

### *4.10.3 Park*

#### *4.10.3.1 The formal garden*

The anomalies centred on (7, -30) are almost certainly caused by the remains of the walled

formal garden. When measurements are taken from the 1752 plan (anon, 1752) the position of the East wall and gateway of the garden coincide with these anomalies. The principal anomaly seems to be a large square mass of material, probably the base of one of the gate piers (now thought to support the Marquess Gate, see section 5.2.4). Extending from this pier towards the Southeast is apparently a wall, thought to be that of the outer court again illustrated on the 1752 plan but not on the plan of 1771 (Pritchard, 1771). The 1752 plan shows the gateway centred within the width of the outer court with the pier not at the junction of the two walls whereas the geophysical data suggests it was at their intersection. It is possible that a separate pier punctuated the join between the two enclosures. Other linear anomalies nearby at (15.5, -32) and (15.5, -37) suggest that other structures may have been present just outside the garden, in the angle between it and the outer court.

There are no anomalies that mirror these on the other side of the former drive but these may be obscured by the far larger changes in resistance caused by what is thought to be a former terrace, see section 4.10.3.4.

#### *4.10.3.2 Walls or stone-filled ditches*

Located across where the outer court was apparently to be found are more linear anomalies, e.g., at (1, -49), again apparently walls, with perpendicular changes in direction that further reinforce the impression that they are not natural features. However, it is possible that they may simply be drains constructed as stone-filled ditches.

#### *4.10.3.3 Stair structure*

Centred at (0, 7.5) is a pronounced high-resistance anomaly against the face of the retaining wall of the stairs. This location is shared by the trench for a power cable which would normally produce a low-resistance anomaly, evident elsewhere in this survey. There is the possibility of a further structure here, perhaps a predecessor of the existing retaining wall, or one built slightly further to the North. It may be related to an adjacent butt joint now concealed with the masonry of the Bowling Green wall (see section 5.2.2).

#### *4.10.3.4 The 'new' terrace*

One of the unexpected results of the survey was the discovery of an enormous and complex high-resistance anomaly running the length of the survey in the park and occupying a good third of its width. Within the 60m length revealed by the survey (it continues for an unknown distance further Southeast) various other anomalies are evident giving it an inhomogenous form. The feature is essentially free-draining, resulting in high surface resistance values and seems likely to be of large depth with significant voids to facilitate this rather enhanced drainage. It was predicted that the feature had been in-filled with rubble and this was confirmed by the results of Trench 5, see section 6.5.6.2. where loose stone rubble continued below the 1m depth of the trench. The only feature that could be this large is likely to be an in-filled terrace, predating both the parkland and the formal garden, and possibly illustrated by Bleaze in 1629. If the bottom is level, as suggested by Bleaze's plan, the depth of fill material at the uphill end, the Northwest, could reach 10m, giving a minimum volume of rubble of 3000 cubic metres for the part we can see. This volume implies that either a substantial quantity of hillside was quarried to provide the material, or, as perhaps is more likely, the bulk of the medieval masonry at this end of the castle may have been dumped into the structure.

The interpretation of the structures evident within this fill is extremely difficult, if not impossible. The long linear high-resistance anomalies may represent walls erected during the filling to stabilise the massive quantity of rubble. An alternative explanation is that they are the remains of structures built upon this terrace.

#### *4.10.3.5 Dineley's tower*

An enigmatic structure illustrated by Dineley (Dineley, 1684:1 & 2) as a short tower standing in the parkland was thought to be an artefact of artistic licence. Once the excavation had finished and more was known about the degree of landscaping that had been carried out, further

study of the geophysical data revealed a large rectangular anomaly in, as far as can be judged from Dineley's exaggerated perspective, a similar location. The anomaly has noticeably right-angled corners which suggests a masonry construction existed here, perhaps the footings of Dineley's tower which is an unexpected but welcome result. This, with the wall footings of the Northeast end of the contemporary gardens described in section 4.10.3.1, suggests that although the actual garden may not have survived (no elements related to walks or parterres were detected within the geophysical survey), the basic layout of its structural components may still exist.

#### *4.10.3.6 The transverse terrace*

Right at the foot of the East end of the High Terrace is a large resistive feature with a well-defined edge. This was interpreted as a former garden terrace beneath the present landscaped earthwork and was found to be not one but two terraces upon partial excavation as part of this evaluation.

#### *4.10.3.7 A defensive ditch?*

The North corner of the survey, especially to the Northeast of the structure thought to be Dineley's tower, is dominated by an extensive high-resistance anomaly which was initially thought to be bedrock near the surface. After the nearby excavations were completed a new interpretation became evident because it was clear that large quantities of stone rubble have been dumped into various negative features as part of an early phase of landscaping, probably predating the construction of the garden (see sections 6.5.2 and 6.5.4 for detailed discussion of this). This implies that the high-resistance area in this corner of the survey may not be bedrock after all but a large rubble-filled feature, perhaps a section of the castle ditch.

# Chapter 5: Information Source: Extant Fabric

## *5.1 Preface*

This chapter attempts to describe the major elements of the structures at the East end of the castle in conjunction with some observations arising from the geophysical survey. Some elements are structurally or chronologically isolated and are in some cases difficult to incorporate into a wider discussion of the structural development as a consequence.

## *5.2 Salient features*

### *5.2.1 Overview*

The East end of the castle is dominated by the High Terrace, overlooking the garden terraces to the South and projecting slightly further East than the Bowling Green to its North. This latter is currently a featureless area of grass, to which access is from the grand stair rising up the North face of the High Terrace to the keep, with the Marquess Gate at its foot to the East. Outside the Marquess Gate is a slightly levelled area of park with several distinct earthworks and contained by trees to the North and South. This ends fairly abruptly at a steeper slope down to the East, up which the old road into the castle from Welshpool is said to have climbed.

There are no obviously medieval features visible today, although the imposing bulk of a medieval castle is in some ways still evident. This does not preclude the survival of medieval material as the excavation at Powis demonstrated. Excavations elsewhere, e.g., at Sandal Castle in Yorkshire and Wigmore Castle in Herefordshire have revealed substantial depths of accumulated deposits at these sites with the earliest phases of the castle becoming increasingly obscured over time.

Various indications of early structures survive in the extant fabric, the most visible ones in the keep itself. Those of relevance to this evaluation are described below and between them suggest that a further programme of evaluation would reveal quite substantial quantities of information about the development of the keep and East bailey.

### *5.2.2 The Bowling Green and enclosing wall*

The Bowling Green is currently an enclosed area within the Northeast corner of the castle, approximately level and affording good views of the surrounding country, ideal for bowling in fact. There are no extant structures within the area, although illustrations of 1817 and 1822 (Munn, 1817 & Buckler, 1822:2) show trees and bushes where there is now a grass sward. Some landscaping has presumably occurred to form the bowling green (though there are no signs of the green itself) and this may in part account for the huge difference in height between this level and the park outside. The height of the garderobe outlets in the base of the keep, discharging at the same level as the current surface, implies that no excavation into the hillside has occurred here since the medieval period. However, it is possible that the difference in height may originate from earlier times when perhaps the bailey was levelled to support buildings within the circuit of the curtain wall.

There is very little in the way of earthwork evidence but during a dry spell of weather in the Summer of 2000 grass marks were noted that suggested a circular structure existed just West of the centre of the green. The electrical resistance survey detected this as a broadly circular anomaly (see section 4.10.2.3).

The North and East retaining walls of the bowling green, the latter approaching 5m in height at the East end, are multiphase from their appearance. At the East end the wall is divided horizontally into a tightly-built upper part supported upon a masonry underpinning with a battered face except at the South end where the upper style of masonry seems to continue to lower down the wall. The ground at the base of this wall has been dug away to create a

narrow track round the North side of the castle, hence the underpinning. The upper part of the wall is therefore the older part and must have risen from the ground old level previous to the construction of the track. This implies that at the South end where this older masonry extends further down the retaining wall, the old ground level must have been quite a bit lower. This observation does not reveal much about the development of the overall structure but if a medieval gatehouse existed it would have stood at this end and hence there may have been abrupt variations in the former ground level here.

Figure 12 The principal joints in the bowling green wall. Left is the edge of modern disturbance while right is the concealed butt joint

At the end of the wall, adjacent to the Marquess gate, there are two visible alterations, one related to the insertion of the gate and repairs to the South wall of the Bowling Green, the other related to the recent insertion of a power cable through the wall. A third alteration is immediately North of these and is visible as a well-masked straight joint passing up the whole height of the older masonry. Its appearance would suggest that the present wall once butted another, perhaps projecting Eastwards into the park, but further North than the present stairs. This may be visible in the resistance data as a potential masonry structure parallel to and slightly North of the stairs.

As the wall rounds the Northeast corner of the Bowling Green there is a truncated relieving arch at the base of the older masonry. This currently has no function but nearby there is a large projecting gritstone boulder that together with the arch may imply a projecting structure once existed at this corner. A tower was drawn at this location by Bleaze in the 1600's but an alternative suggestion is that the curtain wall was thicker and has been cut back and re-faced, causing the apparent truncation of the arch.

Still further along the wall, on the North side of the castle, there are various patches in the masonry, some of which seem to be repairs while others are less irregular and may indicate structural changes. One in particular extends the full height of the wall just where the electrical resistance survey detected a structure against its inside face. This is particularly interesting as the structure has been interpreted as the base of a small tower and it is possible that this once projected further to the North, perhaps as a D-shaped tower like the one surviving further to the West.

Smaller repairs are evident in several places, some using bricks inserted into the masonry and the exact relationship of this wall to the rebuilt service wing of the castle cannot be easily determined. There is a small alcove with its base at the level of the track suggesting it to be a relatively late feature, but its function is uncertain.

### *5.2.3 The High Terrace*

The High Terrace is a dominant and enigmatic structure approximately 10m tall at its East end. It is partly formed by the quarrying away the rock each side and has a level top with little apparent purpose. If viewed from the South it provides a visual balance to the structure of the West bailey or and forms a suitable backdrop for the garden terraces below. There is both documentary (Buck, 1742 & Pritchard, 1771) and structural evidence for a small structure, traditionally a banqueting house, situated right at the East end of the High Terrace. This is now obscured by a sundial resting upon a rectangular plinth that must have been the base of the earlier structure.

Approximately 39m East of the top of the stairs there is an approximately vertical butt joint in the

North wall of the High Terrace, clearly quoined to the West and indicating that the structure has been lengthened. It is battered slightly to the West as it rises and extends from just below the top of the masonry down to the exposed bedrock noted in section 5.2.4 below. The top of the wall seems to have been rebuilt at the same time as the construction of the Eastwards extension out into the park. The reason for this extension is not entirely known but it does support the 'banqueting house' in its entirety and predates the alterations to the stairs thought to correspond to the relocation of the Marquess Gate (see section 5.2.4). Two elements of this extension are worthy of description.

Figure 13 The rubble masonry and quoins of the extended High Terrace

The masonry of the original structure is tidily constructed with fairly large quoin stones at the corner whereas the extension has the appearance of being constructed from recycled masonry as there is a mixture of unsorted faced and non-faced stone of variable sizes, laid as a simple rubble bond. The quoins visible on its Southeastern and Northeastern corners are again of mixed stone, mostly squared rubble but with some fine-grained stone used only for dressings at Powis. These factors suggest that it is built from the rubble of demolished structures. It is tempting to suggest that the terrace was lengthened when the balustrade was added, i.e., before Dineley's drawings of 1684 but perhaps after Bleaze's plan of 1629 and intended to form a backdrop to the garden terraces to the South.

There is evidence for a structure built against the East end of the terrace in the form of a strip of lead flashing high up the East wall but it has left no other indication of its existence. However, during excavation at the foot of this wall a transverse terrace or walkway was found that may perhaps have had a lean-to roof against the High Terrace (see section 6.5.6.1).

### *5.2.4 The Marquess Gate and the Stairs*

The stairs are constructed with stone treads between small landings that slope slightly down to the East, possibly through subsidence or for drainage. These landings are paved with square stone setts West of the Marquess Gate, but have turf surfaces to the East, outside the castle. Beneath the turf one or two setts are visible and excavation showed the backs of the steps recessed to take further stone setts so it seems likely that all the landings were originally paved. Some of the existing setts show signs of reuse, while the treads of the stairs are of two forms, one plain-fronted, the other with a roll-moulded edge, the latter are only found West of the Marquess Gate, i.e., within the castle.

Within the gate, the wall retaining the Bowling Green on the North side of the stairs seems to be the same build throughout, both East and West of the Marquess Gate, the North pier of which butts against the wall. The South side of the stairs is framed by the wall of the High Terrace and outside the gate partly by a grassy bank.

There are several signs of alterations to the stairs; one was mentioned by National Trust staff as a fairly recent modification of the substructure near the keep, the other is rather more ancient. The gate piers of the Marquess Gate are seated upon a foundation at least partly of brick further bricks are built into the upstanding masonry. All these bricks are early and are apparently reused. From the exterior it is clear that the rusticated blocks of the

gate screen have been clumsily reassembled with some no longer presenting the correct face externally. These blocks form an integral part of the gate structure and therefore the entire gate way must have been reassembled. More evidence is provided by the illustrations of Pritchard in 1771 and Dineley in 1684 which both show two gate piers of appropriate size and form further East forming the entrance into the garden.

Immediately to the West of the Marquess Gate, just East of the next flight of steps, there is a scar in the base of the High Terrace where the underlying rock has been cut away. This hasn't occurred anywhere else in the stair and stair landing above this scar is unusually short. This suggests that these steps have been rebuilt West of their former position, presumably to provide space for the Marquess Gate when it was moved to it's present position. There is no similar scar on the North flanking wall so it would seem to either be contemporary or perhaps post-date the moving of the gate way.

Figure 14 The masonry of the North wall of the stairs. Note that the coping has hardly eroded

### *5.3 Concluding remarks*

There would seem to be very little medieval structure still extant above ground level at the East end of Powis, with the possible exception of the original length of High Terrace. However, the medieval form seems to be perpetuated by the present structure, in particular the retaining wall of the Bowling Green would appear to follow the course of what was probably the curtain wall, judging from its shape and the presence of the relieving arch below it. It is possible that the retaining wall itself may be medieval but substantially rebuilt or re-faced only excavation within the Bowling Green could assess this. It seems likely that the medieval gate was on or near the site of the Marquess Gate but no sign of this structure is present above ground.

# Chapter 6: Information Source: Test Excavation

## *6.1 Preface*

This section details the findings of the three small excavations conducted at Powis Castle after the electrical resistance survey was completed but before much of the documentary material became available. An overview of the results is offered in section 6.5.1 whereas section 6.4 summarises what was expected. Each trench is then described in detail, with stratigraphic reports in sections 6.5.2 to 6.5.5 and the stratigraphical and chronological sequence in section 6.5.6.

The cultural finds from each trench are described with their correlation with particular stratigraphical sequences or contexts in sections 6.6.2 to 6.6.5. This is preceded by an overview, in section 6.6.1.

## *6.2 Note on the excavations*

With the exception of Trench 1 no trench was designed to investigate deep deposits and instead the principle of minimal disturbance was adopted. Trench 1 was intended to sample deep deposits adjacent to the stairs to locate residual garden soil and examine the construction of the stairs and terrace but the others were confined wherever possible to the removal of the turf and underlying topsoil to expose buried materials.

Having adopted this principle many questions remain because no structure was removed, however, a good deal has been learnt about the evolution of features at the East end of the castle. All numbers in square brackets refer to individual contexts which include sediments, cuts into sediments, masonry and surfaces.

## *6.3 Excavation layout:*

Three main trenches were excavated, Trench 1 in the grassy bank immediately adjacent to the South side of the stairs East of the High Terrace. This was the primary trench of the excavation and for convenience is labelled Trench 1. Trenches 2 and 4 are really just small lateral extensions of this Northwards into the grass area at the top of the bottom flight of steps, 2 being against the foot of the High Terrace and 4 near the bottom steps. Trench 3 is another small lateral trench, opposite Trench 2 and sampling the grass landing against the South face of the wall flanking the Northern edge of the steps. Trench 1 measured approximately 6.5m x 1.5m with the longer dimension extending from the foot of the High Terrace down to the base of the bottom flight of steps. Trenches 2, 3 and 4 all measured approximately 0.5m x 0.5m.

Trenches 5 and 6 were situated in the park a little East of the steps to the Marquess gate with Trench 5 immediately to the West of Trench 6. Trench 5 measured approximately 2m North to South and 1m laterally; Trench 6 was a separate Northwards continuation of this and was a further 2.5m long. Trench 5 was machine excavated to a depth of 1m, sufficient to reveal that the ground there was fill material.

These trenches were laid out in an attempt to detect any traces of a formal garden that used to lay at this end of the castle (Dineley, 1684:2, Pritchard, 1771). It was hoped that these would provide sufficient area to assess the survival of a small subset of features indicating the overall survival of the garden. Trench 6 was laid out to cross the line of the hypothetical border between the drive central to the line of the avenue seen on various contemporary illustrations (Dineley, 1684:1, Anon, 1752) and the garden parterre to the South. Trench 5 was intended to study the stratigraphy related to the geophysical anomaly interpreted as an in-filled terrace. The intention was to link the stratigraphy of Trench 6 to this so that the chronological development of the in-filled terrace, gardens and later landscaping could be determined. In the event, neither trench was entirely successful in terms of their original aims but this was due to a greater than expected depth of overburden, the presence of an unexpected buried surface apparently unrelated to the garden and rather thorough landscaping in the past.

Trench 1 was positioned in the angle between the South flank of the steps and High Terrace on the site of a terrace indicated on Pritchard's plan in 1771 (Pritchard, 1771). This earthwork quite clearly represented at least the substructure of this terrace, buried by later landscaping but known to coexist for a while with the formal gardens immediately to the East. It was thought that the landscaping would have preserved at least a small fragment of the garden in the angle between the buried terrace and the stairs, especially as the terrace would have stood higher than the garden and hence would be likely to survive at least to a low height. Failing that, some indication in the masonry was sought that might indicate at what level the garden used to exist and serve to demonstrate whether it had been landscaped away at a later date. This objective was satisfied although the extent and complexity of buried features exceeded expectations. With hindsight it would have been beneficial to extend this trench further out into the parkland but the presence of a power cable prevented this.

### *6.4 The expected result*

The central carriage-way or drive could expected to be surfaced with some material other than grass as the East entrance is known to have been the main access into the castle in earlier times. The nature of this surface could not be predicted, nor its survival or depth of burial as landscaping in the later eighteenth or early nineteenth centuries had altered the topography of this end of the castle. It was not even possible to be sure whether the current bottom flight of steps was original or whether another flight might have existed and the geophysical survey had not been able to reveal the nature of the entrance to the castle.

It was thought that any surviving surface at this location could then be used to locate the edge of the Southern parterre perhaps as a kerb or at least an edge to the material used to surface the carriage-way or drive. Trench 6 was expected to reveal this with Trench 5 revealing the relationship between the in-filled terrace, any surviving retaining wall and the garden remains, important for understanding the development of the area as a whole.

Trench 1 was expected to produce a complex result that would demonstrate the relationship between the stair, the garden and the buried terrace. In addition, there is no surviving wall against the South side of the stair but both Pritchard in 1771 and Dineley in 1684 showed a wall on this side, though of different form in each case and an excavation would allow this to be sought as it had not appeared in the geophysical results. The garden must have originally have continued up to the base of the terrace and the stair either as cultivated soil or perhaps a gravelled or paved path. Alternatively bushes may have been planted against the foot of the terrace; this is also implied on the Pritchard plan of 1771. In either case a buried soil or path could be used to determine at what depth the garden existed relative to the current ground level and the result compared with Trench 6. Later dumping of soil and rubbish against the front of the buried terrace was expected to explain the present smooth grassy bank and it was hoped that this material might provide dateable evidence for structures dismantled during the landscaping.

There was also the possibility that features may have survived from earlier phases of the castle near the stairs; a trench immediately adjacent to the supposed entrance into the castle might have produced evidence of a barbican, gatehouse or a ditch, although the visibility of these features would be limited by the small size of the trench.

### *6.5 Excavated evidence: Structures*

#### *6.5.1 Overview*

The excavated structures did not differ significantly from what was expected but there were several additional ones. Trenches 5 and 6 presented simpler features than Trench 1 (with extensions 2, ,3 and 4) and these are considered first. Both were excavated by hand until approximately 0.3m depth, i.e., down onto a well-defined archaeological feature in Trench 6 and onto the top of extremely compacted stone rubble [39] in trench 5. Trench 5 was later machine-excavated to approximately 1m (approximately 134.12m OD) to provide an insight

into the nature of the stone rubble continuing below the base of the trench. This was seen to continue in all directions from the trench and had a deep (the bottom wasn't seen) cut [41] into it near the Northern end of the trench. This had been back-filled with slightly looser and larger rubble [40] and was at least partially covered by a layer of grey sandy material [22] which was exposed in plan in Trench 6. There were no features of interest above the stone rubble [39] which extended almost to the present ground level which suggests that the formal garden had been removed by truncation at this location.

Trench 6 was cleaned down onto a compact horizontal compressed layer of soft shillet-like stone [25] sealed by the grey sandy material [22]. This was clearly an artificial surface so excavation

Figure 15 Surface [25] in trench 6

below this was discontinued. There were no indications of the formal garden in this trench and the surface extended unbroken across the supposed between the carriage-way or drive and the garden. In Trench 5 this layer was seen to partially cover rubble [40] but the geophysical data suggests there is no rubble beneath this in Trench 6. There were no indications of any garden soil or related features in either trench.

The results of Trench 1 were extremely complex with a substantial depth of stratigraphy hand excavated to a depth of approximately 1.6m at its deepest point. Voided stone rubble in the base of the trench was found to continue for at least another 0.5m deeper by 'feeling' into a void. More extensive excavation here at a later date is likely to reveal structures dating from the castle era and predating the garden, sealed beneath the stairs and buried terrace. This trench was successful in that the remains of a South wall for the stairs was found to embody two discrete phases; the division between them perhaps dateable from documentary evidence. The terrace shown on Pritchard's plan (*ibid.*) to the South of the steps was found to be a substantial structure still standing to an impressive height above the level of the garden, traces of which were found to exist but to be disturbed by later alterations to the substructure of the steps. Another discovery was the remains of an earlier terrace encased within the buried one, but see section 3.4 for an explanation.

Right at the base of this trench the top of a masonry structure was discovered, below the foundations of both the terrace wall and the substructure of the steps.

### *6.5.2 Stratigraphic report: Trenches 1, 2 and 4*

Contexts include:

- *walls : [3] [5] [16] [31] [32] [33]*
- *deposits : [1] = [2] [4] [6] = [7] [8] [9] [10] [11] [12] [17] [20] [21] [27] [29] [30] [34] [36] [43] [44]*
- *cuts : [37] [38] [45]*
- *stair treads : [35]*

The trench was excavated parallel to the line of the existing stair, context [35], immediately adjacent to the ends of their treads so that any traces of a flanking wall could be seen and an opportunity made to examine the substructure of the stair. It was originally just long enough to allow the face of the buried terrace to be seen but the early discovery of a well-built wall immediately below the turf right at the Western (High Terrace) end of the trench justified the extension of the trench Westwards up to the face [16] of the High Terrace itself. The height of the bank representing the landscaped terrace was approximately 1.1m before

excavation and this was sectioned as far West as the face of the buried terrace wall. Excavation continued to a small depth below the footings of the terrace wall at which point the objective of the excavation had been satisfied and it was not practical to proceed any further. Any Eastwards continuation of the trench, though desirable, was not possible due to a power cable within a metre of the end of the trench.

The combination of wet weather throughout the excavation, the depth of this trench and the presence of substantial quantities of exposed masonry resulted in the sides of Trench 1 being left slightly battered for safety. For similar reasons the East end of the trench was left battered to prevent any slippage adjacent to the power cable especially as it was also subject to a steadily increasing load from access and spoil as the excavation progressed.

The stratigraphy can be grouped into broad sets of contexts as follows:

- the surface of the terrace and the walls beneath the terrace and adjacent to the steps
- the steps and their adjacent flanking wall
- the reconstruction of the steps
- the construction of the terrace, both the retaining wall and the in-fill material behind it
- accumulated and dumped materials in the angle of the terrace and flanking walls

In some places these are not well understood due to the need to retain excavated features, for example the retaining wall of the terrace prevented investigation of the structure behind it. The bulk of deposits were, not surprisingly, within the deep East end of the trench; from a point approximately half way along the length of the trench until the High Terrace the only excavation required was to strip away the turf and the very shallow topsoil to reveal the remains of the former surface beneath. For simplicity the stratigraphy and contexts within the Western half of the trench and those within Trenches 2 and 4 are described first as they form a discrete group.

Topsoil was identified in these trenches as context [1] to the West of wall [3] and context [2] to the East. They are identical deposits, in most places no thicker than 0.1m and immediately over archaeological material.

Both Trenches 2 and 4 were excavated into the landing between the bottom flight of steps [35] and those to the West, just outside the Marquess gate. Trench 4 was isolated and immediately to the West of the bottom steps where it cut a deep layer of surface turf and topsoil over a dark brownish-pink firm gravely silt [17] with small fragments of brick and lime rubble and occasional stones. This was also present in Trench 2, against the base of the High Terrace [16] as context [11], with a less rubbly form immediately below it [12]. The material retained moisture well and butted both the High Terrace [16] and the wall [5] immediately below the turf. It is overlain by a small area of compact moderately sorted mixed silt and gravel [9] extending over the wall [5] between the grassed area and the terrace further South. This approximately horizontal layer at 136.86m OD, seems to have been a coarse bedding material for the original surface of the terrace which may have been pea gravel from quantities found. Where this material extended over the wall there is documentary evidence (Pritchard, 1771 & Anon, 1752) for an access onto the terrace from stair. This material also extended across the top of wall [3] (crossing Trench 1 from North to South) suggesting that this was buried beneath the surface of the terrace. This makes sense because a later re-facing [32] of the terrace put the edge further East.

Trench 2 was later (November 2000) extended slightly, deepened to approximately 136.24m OD and brought further East to allow the exact relationship between the wall [16] of the High Terrace and wall [5] to be examined in detail. This was especially important because wall [16] forms part of an extension to the High Terrace that was known to support a "banqueting house" from an early date. Relating these walls chronologically would thus provide either a *terminus post quem* or a *terminus ante quem* for wall [5]. Wall [5] was found to butt [16] and the rubbly soil [12] was found to

overlay a pink grit with fairly large gritty stones [43] and a small amount of charcoal, thought to be re-deposited natural material judging by its matrix and stratigraphical relationship to walls [16] and [5]. It butted against both walls, although it had penetrated into the various interstices of wall [5], found to have a foundation at this point of a single stone almost 0.5m tall. The wall of the High Terrace [16] was found to continue down to bedrock [44] but wall [5] seems to overlay a thin layer of rubbly grit, possibly context [43] although it is difficult to be sure. The rock had been cut to form a plinth for the High Terrace with its surface worked in imitation of masonry. Crossing the trench was the lip of a steep and deep cut [45] into the rock, running approximately Northwards from the High Terrace at an angle to its face. The grit [43] continued down into this cut, butting against the face of wall [5] which is seated at a lower level. The wide gap between the two walls allowed a little of the East face [16] (i.e., end wall) of the footings of the High Terrace to be seen continuing as a dressed rock face down into this cut. It is possible that the cut is the lip of a ditch or large pit.

Wall [3] was built of tightly fitted large stones with an East face of dressed masonry but the West face had been robbed away although sufficient remained to determine a thickness of 0.6m where it turned through a right angle to share the course of or become wall [5]. This latter was badly truncated and its Northern face disrupted but was seen to continue down below the upper more damaged parts at 136.8m - 136.9m OD. Projecting from the East face of the corner where walls [3] and [5] joined was a short truncated stub of masonry that must once have continued further East. If this shared the same North face as wall [5] with which it is aligned immediately to the West, it must have been somewhat thinner, perhaps 0.4m to 0.5m compared to 0.6m. Both these walls are double-faced suggesting that they may once have been upstanding, if only to a low height. The Northern wall [5] had been reused as a flanking wall for the steps [35], along with its counterpart further East, wall [33].

The next group of contexts form the substructure of the stair [35] and a badly robbed wall flanking its South side. This area was deeply buried beneath topsoil and turf that had encroached upon the treads of the stair. The large depth of soil seems to be an attempt to smooth the irregularities left by the truncation of the buried structures. Only a short section of the wall [33] projected from the face [32] of the terrace but sufficient remained to see that it had been altered at various stages, the last perhaps linked to the relaying of the treads. These were bedded upon a mixture of lime, soil and broken bricks [36] of the eighteenth century or earlier judging by their shape. Some were bedded in lime mortar that extended onto and into the robbed top of the wall suggesting that they were re-laid after the wall was truncated. Where this wall nears the top of the bottom flight a greenish ashy lime mortar continued from the lower wall [33] up onto the truncated masonry stub projecting from the wall [3] within the terrace. This would suggest that a later wall had stood upon both of these.

Figure 16 Terrace wall [32] butting stair wall [33]

The presence of the buried terrace prevented any investigation into whether walls [33] and [5] are connected at a lower level but they are of similar construction and the South face of the projecting stub from [5] is neatly aligned with that of [33]. Wall [33] seems to be single-faced against the side of the stair but could not be confirmed due to the overlap of the treads. Approximately 0.8m East of

the face of the terrace, i.e., approximately 0.6m from the East end of Trench 1, is a ill-defined break in the masonry of wall [33] continuing down into its footings where the face disappears. The most likely explanation is that the wall has been modified as part of an alteration to the stair but obscured by the later changes noted above. See chapter 7 for further information in the documentary record about this alteration. In places the wall and rubble [36] is overlaid by dark brown silty soil [20] that butts against the sides of the stair treads and would appear to be a rubbly, probably re-deposited, topsoil.

Crossing the trench is retaining wall [32] built of massive stones and butting against the face of the wall [33] flanking the stair. This continues down for almost a metre where it sits upon a projecting footing a further 0.4m deep. The masonry is of cyclopean construction against a mass of rubble and clay [8] and has a 'naturalistic' appearance. The stone facing and the rubble behind are inextricably combined and could not be investigated without dismantling the wall. Where it butted wall [33] it was upright but further South it sloped backwards slightly and later disturbance had reduced its height. During excavation contexts [4], [6], [7] and [10] were found butting against the East face of wall [3]. Context [6] was later found to be part of [7] and sealed [10] beneath it, which in turn rested upon the clay and rubble fill [8] behind the terrace wall [32]. Context [4] was a small deposit of stone rubble immediately adjacent to the East face of wall [3] and was probably originally derived from rubble [8]. These deposits contained a significant quantity of bone, brick and pottery fragments suggesting their deposition during demolition or landscaping. These deposits seem to be an initial phase of landscaping using rubble, rubbish and soil to bury the terrace structure before covering it with topsoil. The wall flanking the stair was apparently truncated at the same time.

A group of contexts valuable for interpreting the decline of the garden are the dump deposits butting the face of the terrace wall [32], with probable garden soils at its base. From the top down these comprise [6] which is a mid brownish pink loamy silt with fragments of lime and pottery and occasional larger fragments of brick up to 0.1m long. Overall it is a poorly sorted friable material that powders to a dust when dry and is probably a mixture of building rubble and soil. Below this is context [10], a mid pinkish orange silty clay, completely different in colour and texture from deposits above and below it. Like [6] above, [10] contains numerous fragments of bone, pottery, glass, brick, lime, charcoal and shell. This again suggests rubbish dumping and lenses of red silt imply that it accumulated over time as a series of discrete events.

Figure 17 North-facing section of trench 1. Bands of dumped material overlay dark garden soil above the rubble at the bottom of the trench

Beneath this last deposit is one [27] of a different nature to all those above. It is the highest deposit that is contained wholly within the walls [32] and [33] and during excavation appeared to be a trodden surface at approximately 135.5m OD. It is a firm mid brown sandy gravely silt, moderately sorted and of variable thickness, increasing towards the steps, i.e., contrary to the deposit

above. The material includes some lime and brick fragments, mostly smaller than contexts [10] and [6] (0.04m) but it does contain a similar quantity of charcoal. The upper surface of the deposit is compacted and almost horizontal, in marked contrast to those higher up; it only deviates from the horizontal within approximately 0.4m of the terrace wall [32] where it rises approximately 0.2m to its highest level against the wall at the South side of Trench 1. Its height coincides roughly with the base of the robbed section of the terrace wall [32] and the robbed top of wall [33] so perhaps it was a late accumulation of trampled soil contemporary with the start of landscaping. This deposit is also a division of the classes of contexts with above it deposits of mixed and dumped material and below it, starting with deposit [21], contexts more typical of gradual accumulation.

Context [21] was quite remarkable for several reasons. First of all it extends downwards for a large depth, almost 0.6m in the Northeast corner of the trench to approximately 134.79m OD. It contains an enormous quantity of pottery, some as large sherds (e.g., 0.2m across) and is a firm dark brown silty material with approximately 20% mixed sand uniform throughout it's depth. Apart from pottery it also contains many mostly small fragments of lime and numerous sherds of glass including bottle bases. There is a small amount of brick but far less than the more rubbly deposits above. Many of the larger pottery sherds were horizontal, especially deeper in the deposit, suggesting a gradual accumulation of material against the base of the terrace wall [32]. This layer seals the projecting footings of the which implies that it can only have accumulated after the construction of the terrace. This, combined with the presence of the surface-like deposit [27] suggests that [21] is a slow accumulation of garden soil against the base of the terrace and is thus our objective for this trench. The large amount of pottery may have been incorporated into the soil deliberately or simply allowed to accumulate beneath the planting of this area.

Below this is another interesting deposit [29], a dark pinkish brown sandy clayey silt, more friable than context [21] and with the ubiquitous brick and lime fragments. Its upper surface is ill-defined at the East end of the trench but better nearer the footings of the terrace wall [32], the base of which is above or set into the deposit at 135.00m OD. The deposit is important as it predates the construction of the terrace retaining wall [32] though it may not predate the original terrace defined by wall [3]. It does not extend far enough to the North to have any direct stratigraphical relationship with the base of the wall [33] flanking the stair which is instead butted by deposit [21] from above. [21] appears to be disturbed and its thickness reduced near the part of wall [33] that has been damaged or altered in antiquity. There is insufficient evidence to suggest that this deposit was cut into as part of the alterations but the possibility remains and may be linked with a definite cut into the deposit immediately below. As deposit [29] dips to the North and East the overlying deposit [21] becomes thicker and deeper as it maintains a horizontal upper surface and is also rather softer near the base of wall [33]. This may suggest that the flanking wall was altered after the terrace was constructed and a hole excavated into the probable garden soil [21] so that the alterations could proceed.

Context [29] is perhaps best regarded as the uppermost context of a deeper complex including masonry [31] and rubble [30]. From the base of [29] (approximately 134.70m OD) downwards the deposits are split into two horizontally with the masonry [31] to the North and loose rubble fill [30] with silted-in sand to the South, separated by a dark pinkish brown clayey silt [34] with less than 5% charcoal. The precise relationship between these three contexts is difficult to understand due to the small area of interface exposed in the base of the trench but the following was determined. The masonry mass projects upwards from the floor of the trench (approximately 134.70m OD) with its upper surface no closer to the surface than 0.9m. It is of composite construction with a large portion cut [38] away in the Northeast corner of trench, again perhaps linked to the alteration of wall [33], and a greenish mortared top. This mortar has also been applied to the base of the face of wall [33] which is partly built on [31] which is convenient for establishing a chronology.

It is possible that masonry [31] is no more than a footing for the wall [33] against the stair because rubble [30] seems to continue beneath the masonry. [31] also appears to be slightly set into the rubble implying that deposit [34] may simply be the fill of a construction cut - it is very similar to the silty matrix of the rubble. The rubble itself lacks pottery which is unusual in this system of deposits and again suggests a different origin or phase of construction.

Figure 18 At the top is terrace wall [32] seated on masonry [31] below wall [33] to the right. Rubble [30] is just appearing in the base of the trench

These deposits are potentially the oldest yet found in this part of the castle and by their stratigraphical relationship must predate both the terrace and the flanking wall of the stair and therefore perhaps the stair itself. It may be relevant that the height of the upper surface of the rubble [30] is almost exactly the same as for the upper surface of the rubble [39] in trench 5, at approximately 134.77m OD. It is also of a very similar nature.

### *6.5.3 Stratigraphic report: Trench 3*

Contexts include:

- *walls* : *[15] [16]*
- *deposits* : *[13] [14*
- *stair treads* : *[35]*

Trench 3 was a small test pit like Trenches 2 and 4, cut into the grass landing at the top of the bottom flight of steps [35] against the South face of the wall [15] flanking their North side. It was used to examine the construction of this wall below ground level and the relationship between it and the adjacent deposits. Deposit [13] is a dark brown soft sandy silty topsoil with small fragments of lime and brick rubble, immediately below the turf. It sealed deposit [14] which is a dark brown rubbly gravely silty soil containing significant quantities of rubble and charcoal. Both these soils seem to be re-deposited topsoils and probably date from the creation of the grass landing. Both butt against wall [15] which has already (see section 3.3.3.4) been identified as a fairly recent replacement of an older wall and so these deposits must be late in the sequence of development.

### *6.5.4 Stratigraphic report: Trench 5*

Contexts include:

- *deposits* : *[18] [24] [28] [39] [40] [42]*
- *cut* : *[41]*

This trench was machine dug at the end of the excavation to just over 1m depth (approximately 135.12m OD) to examine a deep stone rubble deposit that in places lay just under the turf. When sectioned the rubble was found to continue below the bottom of the trench and be divided into two contexts, a compact gritty gravely deposit of stone [39] and a less compact and more voided rubble [40] within a cut [41] into [39]. Rubble context [39] contained a little charcoal and near the top a thick lense of bright greyish yellow silty clay [42] but no brick or other finds. From close examination it appears to be a compacted fill, presumably of a very large and deep feature probably predating the garden because it is not contemporary with or later

than this. The geophysical survey detected a substantial (over 60m long) very high resistance feature that trench 5 cuts into and this has been interpreted as an early terrace, implying the rubble to be the in-fill of this feature and fitting the geophysical result nicely.

Figure 19 Section through rubble in trench 5 with [39] to the left and [40] to the right in a cut [41] at right end of the yellow clay

Excavation did not proceed sufficiently far to the North to be sure of the extent of the cut [41] into this rubble but the loose fill corresponds approximately to where a retaining wall would be expected and may be the fill of a robber trench. It is sealed by a thin layer of stony material [28], identical to [25] in Trench 6. Both this and the rubble [39] to the South are sealed by a reddish stony gravely silt [24] immediately above with a very stony topsoil [18] above this. Deposits [24] and [18] are extremely disturbed by tree roots unable to penetrate the compacted stone rubble below. Note that the top of this rubble is at the same height as rubble [30] in trench 1, approximately 134.77m OD which suggests the features may be linked or perhaps contemporary. It is suspected that both rubble deposits predate the garden and are derived from medieval structures cleared before the construction of the garden and possibly before the extension of the High Terrace (see section 5.2.3).

There was no sign of any context that could be related to the garden.

### *6.5.5 Stratigraphic report: Trench 6*

Contexts include:

- *deposits : [19] [22] [23] [25] [26]*

This trench was immediately adjacent to trench 5 and the stratigraphy is similar, although the contexts have different numbers. The topsoil [19] is continuous with [18] from trench 5 and [26], though not identical to [24] should be regarded as essentially the same material. Deposit [26] is an approximately 0.1m thick layer of mid brownish-pink firm clayey silt full of fragments of bone, shell, pottery and small pieces of sandstone, slate and pebbles. Below this is deposit [22], a light greyish-yellow homogenous sand extending over the entire trench except where surface [25] outcrops through it at the South end of the Trench. Sandwiched between this and surface [25], a degraded light greenish-grey compacted coarse platy gravel, is a thin (less than 0.05m thick) layer [23] of mid brownish-pink coarse sandy silt with no inclusions or finds. The surface [25] extends as a horizontal layer over the whole trench, with an abrupt rise of approximately 0.04m to South, from which level it continues into trench 5 as context [28], at approximately 134.87m OD. This trench was approximately 0.3m deep.

There was no sign of any context that could be related to the garden or the drive illustrated by Pritchard in 1771 (Pritchard, 1771).

### *6.5.6 Stratigraphic and chronological summaries*

#### *6.5.6.1 Trenches 1, 2, 3 and 4*

The many individual stratigraphic relationships are too numerous to detail here but a few specific ones are examined where they demonstrate the overall chronological framework. Most contexts seem related to either the construction or destruction of masonry structures and the stair and therefore provide a convenient stratigraphical framework around which the chronological development can be studied. As a simple example, the stair treads [35] are seated on the bricks of deposit [36] which are bedded in lime mortar that partially covers the top of the wall [33], proving that the present stair must have been created after the demolition of

wall [33]. This implies that the present treads have been re-laid fairly late in the sequence.

The earliest unit of sequential stratigraphy is the rubble [30] at the very base of trench 1. This is cut by an excavation, cut [37], into which the masonry feature [31] has been inserted. The precise function of this masonry cannot be determined but it has certainly been used as a footing for wall [33]. The deposit [34] between this and the cut itself is likely to be just primary silt and in itself not important. As noted in sections 6.5.2 and 6.5.4 above this rubble is similar to that found in Trench 5 and is at the same horizontal level, suggesting that even if not physically linked they may share a similar origin and hence date. A most important consequence is that the deposition of this rubble has to predate all other features found in trenches 1, 2, 3 and 4. Like rubble [39] in trench 5, there are no finds or lime or brick fragments below the top of the deposit, in marked contrast to the abundance of these materials in later deposits.

Next in the sequence must be walls [3] and [5] which although not related directly to the rubble are stratigraphically earlier than all other deposits. If as suggested in section 6.5.2 above, wall [33] against the stair is part of wall [3] or [5] then this is demonstrably later than the underlying rubble [30].

The butt joint between wall [5] and the High Terrace wall [16] shows that the construction of the buried terrace defined by wall [3] and later [32] has to post-date the High Terrace extension. The foundations of wall [5] sit lower than those of wall [16] in a cut [44], described in section 6.5.2, trench 2, and there is a possibility that wall [5] may cross an in-filled ditch or pit. Some abrupt change in the level of bed rock does exist here as it plummets from approximately 136.57m OD at the base of the High Terrace to below 134.27m OD below the base of trench 1 only 5.5m to the East. Wall [5] seems to be directly related to the High Terrace extension as although no masonry is shared large flat stones project from the foot of [16] into the terrace defined by walls [3] and [5] which suggests them to be of similar if not identical date.

The butt joint between the end of the newer terrace wall [32] (built in front of deposit [8] and wall [3]) and wall [33] demonstrates that the terrace was widened after the wall flanking the stair was built, matching the assumption that the earlier terrace wall [3] is part of [33] at depth. The base of the terrace wall [32] rests on masonry feature [31] and upon the silt and rubble contexts [29], [34] and [30]. Above deposit [29] is a substantial depth of a well-sorted crumbly soil [21] with many small flecks of lime and a substantial accumulation of pottery. This would seem to have been a cultivated soil from its homogeneity and fine crumb structure, probably accumulated against the base of the terrace. The large quantity of pottery sherds is interesting, past gardeners may have used the area for dumping rubbish, perhaps beneath the bushes hinted at on Pritchard's plan of 1771 at the base of this terrace.

Figure 20 The full surviving height of terrace wall [32], showing the coarse masonry , damaged to the left during demolition. The butt joint against the stair wall [33] to the right is clear. The wall was probably only a little higher when built

A fairly widespread layer of gravel, deposit [9], overlays walls [3] and [5] especially near the base of the High Terrace where a thick band crosses wall [5]. This is likely to be the site of a path linking the terrace to the stairs and evidence for this is

afforded by a anonymous plan of 1752 (Anon., 1752); see section 6.5.2. This gravel is thought to be the foundation layer for a finer surface, perhaps pea-gravel as quantities of this were found both in and immediately below the turf.

As noted in section 6.5.2, above, wall [33] flanking the South side of the stair seems to have been altered at its East end. This change in the masonry coincides with the cut [38] into the masonry feature [31] below it and deposit [21] seems to also to have been disturbed at this location as there is a looser pocket of material against wall [33]. This places the alteration to the wall after the widening of the terrace because deposit [21] butts against the later terrace wall [32]. It must also have happened before the eventual demolition of the wall because post-demolition deposits, e.g., [27] were not disturbed by the alteration. The anonymous plan of 1752 and Dineley in 1684 suggest that the walls flanking the stair were originally terminated with stone or even brick piers which were not found during excavation. It seems likely that the disturbance relates to the removal of these piers

Figure 21 The stair wall [33] with terrace [32] to left and treads [35] behind. The section to the right has been altered and the cut into its footings is visible at bottom right. In the shadows next to the stairs brick rubble and mortar can be seen under the stone treads

All subsequent deposits in trench 1 relate to the destruction of the terrace and stair wall and the landscaping of the area. The firm deposit [27] coincides in height with the lowest parts of the damaged walls, suggesting that it was probably a temporary surface resulting from the compaction of the garden soil and the incorporation of debris into it during demolition. Above it soil and rubbish seems to have been dumped, including over the ruined front of the terrace, presumably as part of the landscaping or during a period of neglect.

In trenches 2 and 4, the stratigraphy is more simple, in particular trench 4 where all the deposits seem related to the construction of the grass landing of the stairs and are therefore rather late in the stratigraphic sequence, probably contemporary with the demolition of the terrace and wall [33]. In trench 5, the same deposits butt the back of wall [15] retaining the North side of the stairs. Trench 4 lacks significant internal stratigraphical relationships except that all the deposits post-date wall [3] in common with most of trench 1... Trench 2, however, has deposits that can be related to both wall [3] and the base [16] of the High Terrace and are identical to those in trenches 4 and 5.

In trench 2 the joint between wall [5] and the base [16] of the High Terrace was butted by the same late deposits found elsewhere, here identified as [11] and [12. Wall [16] rests upon bed rock that is cut away [44] and then filled with a gritty rubbly deposit [45] that may or may not predate wall [5]; there was insufficient material visible to be entirely confident of the relationship. This demonstrates the High Terrace wall [16] to be the earliest stratigraphical unit at this location and that the wall [5] predates the landscaping; an independent confirmation of the stratigraphical sequence already determined from trench 1.

### *6.5.6.2 Trenches 5 and 6*

Trenches 5 and 6 can be examined together as although they are not directly linked the stratigraphy of trench 6 is a chronological continuation of that in trench 5. The chronological sequence thus starts with rubble [39] which extends below the base of trench 5. The cut can be interpreted in two ways, either as a hole dug into the rubble and later back-filled or as an edge left by the removal of another feature with the space

taken by fill [40]. Either way, this seems most likely to be caused by the robbing of an upstanding feature in the rubble, probably the retaining wall of a former terrace suggested by the geophysical data and in-filled by the deep rubble deposit [39]. The fill of this robbed feature is sealed by surface [28] ([25] in trench 6) which is the lowest excavated stratigraphical unit in trench 6, providing an instance of stratigraphic continuity between the two trenches. Surface [25] covers a couple of thin layers of coloured sands, deposits [22] and [23] and all sealed beneath a layer of mixed soil, rubbish and small rubble [26] that is the uppermost deposit in trench 5 as well. The sequence is therefore the deposition of a rubble fill [39] followed by the intrusion of trench [41], subsequently back-filled with more rubble [40] and then sealed beneath the surface [25]. The significance of the relationship of the coloured sand and the surface is not understood. The rubbly soil which seems to spread over a wide area is probably part of the landscaping of the area after the removal of the garden.

#### *6.5.6.3 Trenches 1, 2, 3, 4, 5 and 6 combined*

There are no direct stratigraphical relationships between the two sets of trenches, apart from the obvious example of the current topsoil. No stratigraphic units were seen to continue from Trenches 5 or 6 into Trench 1 and the base of Trench 1 is only slightly lower than the present ground level around trenches 5 and 6. This implies that any deposit that extended horizontally from the base of the terrace in trench 1 will have been removed completely by the later landscaping and hence the parterres and walks depicted by Pritchard in 1771 are unlikely to survive away from the terrace. A former garden soil was located against the terrace in Trench 1 but not further East which suggests that the formal garden depicted by Pritchard (Pritchard, 1771) has been completely obliterated.

The landscaping does not seem to have removed very much of the underlying rubble as although some truncation was visible in trench 5 the level of its upper surface is very similar to that preserved below the remains of the terrace and wall in trench 1 where it was protected from landscaping. It seems unlikely that there would have been any major change in level across this part of the castle unless the garden was constructed on an extreme slope. The level of this rubble is also far below (2.3m) the base of the High Terrace and trench 2 revealed the base of this structure to be built upon the edge of a cut [44] into the rock which was subsequently filled with rubble [45]. It is possible that a near-intact construction level may exist, most likely dating from immediately before the construction of the garden and after the demolition of medieval structures. This in turn suggests that a medieval land surface and associated features may survive buried under the rubble. This is especially likely next to the High Terrace where the castle ditch may survive and also the in-filled terrace in the park.

### *6.6 Excavated evidence: Finds*

#### *6.6.1 Trenches 1 to 4*

Context [1&2]

- Balance of items is towards structural materials rather than domestic waste.
- Part of lead capping of an iron cramp, probably from a balustrade, with a 1mm thick smooth lead sheet applied to the top of the lead cap that would have been visible.
- A George III (1806) penny was recovered from this context, sitting directly on the wall [3]. This seems deliberately placed, presumably at the time of landscaping to form a more naturalistic setting.
- There is a small quantity of mixed pottery. No green bottle glass in this context, although plenty of flat glass and one piece of stamped clear glass from a bottle or jar which may be traceable.

Context [4]

- Small quantities of mainly structural items, bones but no pottery. Fine-grained piece ogee moulded buff sandstone, almost identical to current coping on stairs.

Context [6&7]

- Substantial quantities of all types of material represented in this excavation.

- Widest range of pottery types of all contexts, including the only type (AC, gravel-tempered) dated as Late Medieval/ Early Post-Medieval, and the 6 sherds of particularly fine richly decorated stoneware. Most of the pottery could be considered kitchen/domestic. Apart from the dominant earthenwares, stonewares and cream wares make up significant proportions of the total, by sherd count and mass. Rim sherd type I (coal measures red, black glaze) fits with sherd in Context [20].
- Fragment of lead glazed ceramic floor tile, possibly medieval.
- Distinctive bottle neck of uncertain (early?) date, glass particularly degraded.

Context [11]
- Small quantities structural items including an iron cramp, and a pig tooth.

Context [13]
- Small quantities structural items and the latest dated sherd of pottery (18th/19thC).

Context [20]
- Rim sherd type I (coal measures red, black glaze) fits with sherd in Context [6&7].

Context [21]
- Substantial quantities of all types of material represented in this excavation.
- Local red earthenwares are by far the most common fabric type from this context (69% by mass) with remainder mostly made up by other coarse wares. This context accounts for the vast majority (99% by mass) of local red earthenwares throughout the excavation. The vessel shapes that can be identified are similar to those of large flowerpots and some have small holes in the body or base (interpreted as drainage rather than as bung holes as there is no protruding lip).
- Three fragments of moulded finely grained buff sandstone in this context.
- Significant quantities of snail shells were found in this context.

### *6.6.2 Trench 5*

Context [18]
- Small quantities of mixed domestic waste.

### *6.6.3 Trench 6*

Context [19]
- Mainly domestic waste, including a range of pottery in small quantities, clay pipes and butchered bone.

Contexts [22] and [23]
- Small quantities of mixed domestic waste.
- Piece of unidentifiable material (could be antler) in Context [22].

### *6.6.4 Summary*

Context [6&7] seals the remains of the terrace wall [32] and seems to be the boundary between later landscaping works and the build-up of material against the steps and slope. This context contains a wide range of materials, though interestingly very little of the local red earthenware so prevalent in Context [21]. The balance of materials in Context [21] points to it being a build-up of garden soil and rubbish. This is sealed by Context [27] which contained no local red earthenwares and no snail shells: the episodes of dumping garden waste seem to end here. Likewise, there are no local red earthenwares or any other coarse wares present in Context [29], directly sealed by Context [21]. No ceramic appears below Context [21] apart from 1 piece of clay pipe in Context [29].

# Chapter 7: Chronological Model

## *7.1 Preface*

This section of the report attempts to summarise all the information presented thus far into a chronological and structural model of the development of the East end of Powis Castle. The most significant structural changes have been selected and dates assigned to them using a combination of the documentary sources described in Chapter 3 and the structural relationships determined during the evaluation. Divisions have been introduced to categorise datable changes by source material and also by certainty of interpretation to maintain objectivity.

The first category isolates events that have not been detected by geophysical survey or excavation and are therefore only known from documentary sources. A second group describes events that have been detected primarily by the excavation and structural study, dated by direct association with the documentary record. The third group is more subjective as it groups together structural sequences for features that cannot at this time be dated, but have definite relationships with other, dateable, features. Finally the indirect associations are discussed. These are isolated structural events that cannot be related to others except by examining the overall pattern of development and applying a subjective date to them.

Section 7.5 groups the various structural events by date range and summarises the broad chronological phases of development. After this the logical integrity of the model is discussed and its limitations and weaknesses discussed. The list of recommended further research later in this report seeks to build upon this model and, where possible, allow some of these weaknesses to be reduced.

## *7.2 Dateable events*

### *7.2.1 Events known only from documentary sources*

The following list of structural changes have all been noted from examination of the documentary resource and many have not been confirmed by excavation although some features would seem to have been detected by the geophysical surveys.

- Construction of the stairs through the bailey to the keep: *before 1684*

  These are shown on Dineley's illustrations of 1684 but are not visible on Bleaze's plan of 1629 although some form of similar structure would have been necessary to gain access to the keep.

- Construction of the banqueting house on the end of the High Terrace: *before 1684*

  This structure is not shown on Bleaze's plan but this may be an inaccuracy, however, it is definitely visible on Dineley's illustrations.

- Demolition of curtain wall and tower(s) to North of the High Terrace: *after 1629 & before 1684*

  The wall and towers shown on Bleaze's plan of 1629 are not apparent on Dineley's illustrations, with the exception of a drum tower near the end of the High Terrace.

- Construction of the tower in the garden: *after 1629? & before 1684*

  The construction date is slightly uncertain as Bleaze shows two towers on the curtain wall North of the High Terrace. If his plan is inaccurate then one of these towers could be the one that Dineley illustrated, positioned East of the line of the curtain.

- Construction of formal garden: *after 1629 & before 1684*

  An enclosure is shown on Bleaze's plan but Dineley shows both the garden and the outer

court in a form that fits later plans. It must be a replacement for the structure shown by Bleaze because in 1629 a large terrace ran where the Southeastern parts of the garden were created and the garden could not have existed in the form depicted by Dineley.

- Construction of outer court Southeast of garden: *after 1629 & before 1684*

  Dineley seems to show shapeless (so therefore perhaps not ornamental) mounds within the Southern part of this latter structure which may imply that construction was still under way in 1684.

- Demolition of drum tower near South corner of High Terrace: *after 1684 & before 1742*

  Even though most of the structures shown on Bleaze's plan had been removed by 1684 when Dineley made his drawings, a drum tower is shown by Dineley as still being present near the High terrace. It had gone, however, by the Buck's drawing of 1742.

- Demolition of tower within garden: *after 1684 & before 1752*

  This structure, rectangular in plan, is shown by Dineley to have existed just Northeast of the stairs within the formal garden. It is not shown on either the 1752 or 1771 (Pritchard, 1771) plans and it's existence was doubted until the geophysical survey detected what appears to be a rectangular foundation in approximately the right place.

- Demolition of outer court East of garden: *after 1752 & before 1771*

  This structure is shown on the anonymous plan of 1752 but not on Pritchard's plan. As Pritchard was apparently mapping the gardens around the castle it would be surprising if he ignored this structure and the implication therefore is that it may have been removed.

- Removal of rear balustrades from High Terrace: *after 1742 & before 1817*

  The corbels and coping of a balustrade around the Southeast and Northeast faces of the High Terrace survive and a balustrade is shown by Dineley and also a later drawing by an unknown hand thought to date from the 1750's. The Buck brothers in 1742 show the upper terraces to have balustrades although only the Southwest side of the High Terrace is visible in their drawing. Assuming the date of the 1750's elevation is correct it would imply that the balustrades were present at the time of the Buck drawing. They had definitely been removed by 1817 (Munn, 1817) where a shrubbery occupies their place.

- Removal of wall retaining Northeast side of stairs: *after 1771 & before 1817*

  A wall seems to be shown on Pritchard's plan of 1771 and definitely on the plan of 1752 but none is shown on illustrations by Munn in 1817 or in later illustrations.

- Demolition of banqueting house on High Terrace: *after 1771 & before 1845*

  Pritchard has drawn the shape of a structure, assumed to be the banqueting house, on the end of the High Terrace in 1771. Cox, in 1845 (Cox, 1845:1) illustrated a view Southeastwards from the stairs over the Marquess Gate and there is clearly no structure on the High Terrace then. It may have been removed with the balustrades prior to 1817.

- Creation of gravel surfaces on stair landings above gateway: *before 1822*

  Drawings by Cox (Cox, 1845:1), though not necessarily Cox Junior (Cox Jnr, unknown), imply that some of the stair landings lacked stone setts and were instead surfaced with gravel. Buckler in 1822 (Buckler 1822:3) shows a landing with a central strip of setts (perhaps a drain) but nothing to each side.

- Creation of paved surfaces on stair landings above gateway: *after 1901*

  The gravel surfaces on the stair landings are shown clearly, along with the central drain, on

a Country Life photograph (Country Life, 1901). The stone setts must therefore post-date this.

### *7.2.2 Events detected by structural research*

Various changes in the structure have been noted as a consequence of excavation and study of the structure and can be traced, although sometimes indirectly, in the set of old illustrations used during this evaluation. Some changes were not known before the evaluation, e.g., alterations to the form of the formal garden, others were implied in the documentary resource but not confirmed, e.g., the moving of the Marquess Gate piers.

- Original construction of the High Terrace:*before 1629*

  The terrace is shown on Bleaze's plan of 1629.

- Extension of High Terrace: *before 1684 and after 1629*

  Bleaze (1629) seems to show a shorter High Terrace but Dineley definitely shows the extended form because the banqueting house that was built upon the extension is visible in his drawing (Dineley, 1684:2).

- Removal of pier terminations at base of stairs: *after 1752 & before 1771*

  This alteration has been suggested because of changes to the structure of the wall flanking the Southwest side of the stair Southeast of the High Terrace. The plan of 1752 (Anon, 1752) shows piers terminating the side walls but by 1771 (Pritchard, 1771) they do not seem to be present and the excavation showed the wall to have been repaired. The alteration may be related to the next item.

- Widening of terrace or walkway along foot of High Terrace: *after 1752 & before 1771*

  Along the base of the Southeast end of the High Terrace was a narrow terrace, in 1752 (Anon, 1752) apparently functioning as a link between the East garden and the garden terraces to the Southwest of the High Terrace. Excavation showed this to have been widened by the addition of a second stone facing and by comparing the plans of 1752 and 1771 the change in its proportions is evident.

- Removal of garden and garden walls: *after 1771*

  Pritchard depicted the garden and its layout in 1771 and therefore the garden could not have been removed until after this date. Cox (Cox, 1845:1) is a little unclear but does not show any obvious signs of structures East of the current position of the Marquess Gate (see below).

- Moving of Marquess Gate piers: *after 1771 & before 1845*

  Pritchard's plan shows there to have been no gate at the Southeast end of the High Terrace whereas the Marquess Gate is hung there now. The gate is depicted in it's current position by Cox in 1845 (Cox, 1845:1). The piers, not the gate, are shown by Dineley in 1684 to stand at the Southeast entrance into the garden.

- Demolition of terraces along foot of High Terrace: *after 1771 & 1806 & before 1904(?)*

  The terrace or walkway along the foot of the High Terrace, in its widened form, was demolished and replaced by the landscaped bank. The structure is shown on the 1771 plan but during excavation an 1806 penny was found placed in a hollow in the top of a stone of the truncated inner terrace wall implying that demolition is not likely to have proceeded before this date. An early postcard thought to post-date 1904 (J.V., unknown) shows the present grass bank and no other structure. A metal railing seems to have replaced the terrace; the anchor-point for the uphill end of this is visible in the masonry of the High Terrace.

- Restoration of wall retaining Northeast side of stairs: *after 1904(?)*

  Illustrations throughout the 1800's show the wall against the Northeast side of the stairs to have been removed and the Country Life

photograph of 1901 shows clearly a truncated stub projecting from under a bush. There does not seem to be a wall on the post-1904 postcard either. It cannot therefore have been rebuilt until after this date which means that the entire wall (which is unbroken along it's length) and the pointed coping with basal ogee moulding are relatively late in the sequence.

### *7.3 Significant events related by direct association*

- Rebuilding of the first flight of stairs above the Marquess Gate: *after moving the gate piers from their original position*

  There is a clear discrepancy between the depth of the landing above the gate and those higher up. There is a also a scar in the rock below the High Terrace at the point where the first flight of stairs would be if the landings were all of the same width. Presumably this flight was recessed slightly to allow the Marquess Gate to be opened inwards.

- The construction and destruction of the in-filled terrace: *before the garden depicted in 1752*

  The plan of 1752 (Anon, 1752) shows the garden in layout only but there is no sign of the terrace and this is known not to have existed later. The plan implies that the terrace was in-filled either before or as part of creating the garden.

- The construction of the green sandy surface [25] over the in-filled terrace: *after the terrace had been in-filled*

  The stratigraphy indicates that the surface was constructed over the edge of the in-filled terrace. It is not known for certain whether the surface is part of the garden.

- Underpinning of the Bowling Green retaining wall: *before 1904(?)*

  The underpinning below the Northeast wall of the Bowling Green is shown on the postcard thought to post-date 1904 (J.V., unknown). The date of it's construction is not known but must have occurred after ground below the retaining wall was removed and this event must be contemporary with or post-date the removal of the garden.

- Rebuilding of the stairs below the Marquess Gate and the turfing of landings: *after North wall of stairs has been rebuilt*

  There are no signs that the North wall was cut into the soil of the landing below the Marquess Gate and there are few signs that the landing was paved afterwards. It would seem that the stair below the gate has been at least superficially rebuilt.

# Chapter 8: Conclusions and Recommendations

## *1) Preface*

This chapter is intended to summarise the principal results of the evaluation at Powis Castle. Some reference is made to their wider context, in particular the Southern gardens and terraces, with which the East garden must be considered an integral rather than an individual part.

In recognition that this evaluation has only been able to examine a subset of features and proffer a narrow range of conclusions, a set of recommendations for further research are included at the end of the chapter.

## *2) The chronology with reference to the gardens as a whole*

What follows is a discussion of the gardens as a whole and where the East garden seems to fit within them physically and chronologically. The information is this section is presented as the overall interpretation - further work way substantiate or weaken aspects of it.

Bleaze in 1629 seems to depict an essentially medieval structure with the shorter High Terrace and indications of towers around a curtain wall. At this stage no Eastern garden exists and a large terrace occupied the place where they were later created.

By 1684 the Southern garden terraces seem to have been built, judging from Dineley's drawings and the High Terrace has clearly been lengthened and now supports a structure reputed to be a banqueting hall. The East garden has been built and the gate piers that now support the Marquess gate have appeared at the Eastern entrance into the garden from an outer walk or avenue. Nearly all the medieval structures depicted by Bleaze have been demolished or at least truncated, with the exception of the Southern drum tower near the former end of the High Terrace. A narrow terrace or walkway has been constructed of well-coursed masonry against the end of the High Terrace to link the East garden with the Southern garden terraces. Access to this was from the grand stair that led up to the keep from the garden, much as it does today and the structure seems to have been roofed to provide shelter. This reinforces the interpretation of this structure as a walkway rather than another open terrace. The large terrace depicted by Bleaze has been in-filled, almost certainly with rubble from the demolished medieval structures and there is a possibility that the retaining wall against the Southern edge of this Eastern area dates from this time.

Sometime after 1684 but before the Buck brothers' drawing (apparently 1742), the Southern drum tower had been demolished and within this time de Valle had apparently been commissioned to construct water gardens at the foot of the terraces. There is a strong possibility that this included the construction of the grass terraces below the earlier masonry ones as there is mention later by John Loveday in 1732 of the lower terraces having been built by a Frenchman.

The two plans of 1752 (anonymous) and 1771 (Pritchard) are convenient for displaying a number of small changes to the structures, presumably in response to changing styles and ongoing maintenance. The small piers terminating the walls flanking the foot of the stair seem to have been removed between these dates and the walkway had been widened. This was achieved by the addition against its face of a mass of clay retained by coarse rubble masonry, very much in a more naturalistic style than the former structure. It is possible that the roof was removed at this time. No details of the garden are depicted in 1752 but his may reflect the purpose of the plan; Pritchard, however, shows developed parterres either side of a central walk. There are good reasons to believe that the angle of the gardens depicted by Pritchard is incorrect, see section 4, below. The plans also imply that the narrow enclosure or court to the East of the garden was removed between the two dates.

After 1771 but before 1809 de Valle's water garden was apparently removed, perhaps by Emes. By 1845 and after 1806, but before 1817, the East garden had been removed and the avenue of trees extended Westwards onto it's site. The gate piers that once gave access into the garden had been

removed to the foot of the stairs, each side of the Marquess gate which is though to date to 1705 and hence must also have been moved to this site from elsewhere. The walkway had also been removed presumably because it was no longer needed for access to the site of the East garden. It would appear from the excavated evidence that it was landscaped to form a grassy bank in keeping with the new naturalistic style at this end of the castle. In addition, the North wall of the stairs seems to have been removed and the Bowling Green planted with trees, augmenting the naturalistic approach to the castle.

The final major change at this end of the castle was the rebuilding of the North wall of the stairs sometime after 1904. It is possible that the stairs themselves were refurbished at the same time.

### *3) Concluding the Chronology*

The chronology presented in the preceding section has been formed from a strict structural and illustrated sequence to which has been applied known dates. This has allowed some of the dates ascribed to the Southern terraces and gardens to be examined against those for the East garden and the following observations can be made.

The drawings by Bleaze in 1629 and Dineley in 1684 imply that the garden terraces and balustrades originated in the mid seventeenth century, after 1629 and before 1684 and therefore before William Winde became involved. This also differs from accounts suggesting an origin by de Valle around 1700. An origin before the 1680's is also supported by the discovery of lead statuary from John van Nost's workshop from the 1680's on the balustrades. Further evidence for a major phase of construction around this date is possibly provided by Dineley's illustrations, especially in the East garden where he seems to show mounds of materials in the Southern half.

De Valle appears on the scene after the family's return from exile in 1703 and the water gardens were operational by 1705 when described as finished by John Bridgeman. It would seem that de Valle created only the grass terraces; John Loveday in 1732 specifically refers to him laying out the lower gardens rather than the upper terraces. If so, this would fit with de Valle's creation grass terraces to link his new garden with the older terraces above.

### *4) Specific Conclusions*

#### *4.1 Drawings*

A significant discovery is illustrated by plan 3 at the end of this report. The 1752 and 1771 plans differ in that the East garden is depicted at a different angle in each with Pritchard's showing the whole to be twisted relative to the axis of the castle. This is perhaps not in keeping with the geometrical layout and aesthetics expected of a garden and approach of the late 1600's. It is instrumental to consider that the ornamental gate into the garden from the East, and the approach up the hillside, would be obscured from an observer on the stair from the keep. When the two plans are compared with the modern one, as depicted by plan 3, it is clear that although the 1752 one is very similar to today, Pritchard's has several differences that can only be construed as errors, for example the narrow width of the stair and high terrace. The East end of the Bowling Green is also a different shape but the most glaring example is again the angle of the garden. If the garden existed at the angle he depicted it would have continued beyond the steep drop to the North of the site; the 1752 plan shows the garden to be neatly contained by the slope to the North and the line of the present retaining wall to the South, a much more likely layout. The conclusion is that although Pritchard's plan shows more detail, the 1752 plan is more likely to be an accurate reflection of the castle at that date.

#### *4.2 The medieval castle*

One of the objectives of the evaluation was to locate any traces of the form of the medieval castle beneath the many later changes. By examining a wide cross section material this has been achieved with some success, even though in many cases the details are still unclear.

The most useful documentary source has been Bleaze because it is possible to demonstrate that he depicted what seems to have been a medieval structure in decline rather than the later works

associated with the gardens. He shows a shorter High Terrace than today and a curtain wall with two towers at the East end of the bailey, perhaps two turrets of a gatehouse or a gatehouse and Northeast corner tower. The second documentary source for the early structure is Dineley, in spite of the evident distortions of perspective, clearly shows a drum tower at the Southeast corner of the castle, similar in size to one recently found at the Southwest corner. In addition, the geophysical survey showed a further structure, probably a mural or postern, on the North side of the Bowling Green and a section of what appears to be curtain wall. There are few indications of a ditch around the bailey although excavation did reveal the lip of a deep cut into the rock below the end of the High Terrace and an extension of an extant ditch into the survey area from the North, below the site of the garden and thought to be in-filled with rubble.

Together, these allow a fairly good approximation of the plan (see plan 4) of the castle to be formed, at least on paper. It resembles typical structures of the thirteenth century (Steane, 1984) and is similar in nature to structures that apparently existed at the West end of the castle.

Beneath the former South wall of the stair and wall of the walkway between the East and South gardens there is a deep deposit of rubble that appears unrelated to either structure and certainly predates the creation of the garden. This seems likely to be rubble from the demolition of medieval structures in advance of creating the garden and it seems sensible to assume that it is likely to bury or contain significant medieval features, e.g. the footings of a gatehouse. The rubble may also be filling the medieval ditch which has also been noted as a possibility on the North side of the former garden from the geophysical data.

The top of this rubble is at the same height as the top of the rubble in trench 5 where it in-fills the former terrace and there is a possible implication here that the terrace or related features may once have continued further West into the area now occupied by the stairs.

### *4.3 The High Terrace*

This structure is probably the most enigmatic of them all in this part of the castle. It seems to have been extended between 1629 and 1684 according to the documentary evidence and once supported a structure thought to have been a banqueting hall at its East end. This is depicted on the plan of 1752 as a simple rectangular structure, no trace of which was found during the geophysical survey. The reason for the extension is unclear but from the South it is evident that the Southern garden terraces would appear unbalanced if the terrace was shorter so perhaps it was lengthened simply to improve the appearance from the South. This would fit with the creation of the garden terraces at the same date and may also explain why the 'banqueting hall' was built, to balance the upstanding structures forming the gateway at the other end of the castle, also visible from the South.

Dineley's drawings imply that the structure, including the 'banqueting hall', may have been stuccoed with false quoins applied to the masonry of the terrace. This is in contrast to the masonry of the drum tower nearby and would fit with the date of the illustration.

### *4.4 The Bowling Green*

It seems clear from the results of the evaluation that this area is the remains of the East Bailey and that is does contain structures of considerable important, including the mural tower mentioned in section 4.2. Other, more ephemeral, structures may exist, e.g., the footings of timber-framed buildings, etc. And it must be expected that some landscaping has occurred if was used as a bowling green. In the 1800's it was clearly part of the naturalistic approach to the castle and was planted with trees and shrubs. Immediately South of the site of the tower is a circular structure, only faintly visible in the geophysical data but clearer as a parch mark in dry weather. The origin of this is not known but the geophysical result is consistent with the existence of a laminar circular surface.

### *4.5 The stairs*

Little can be said about the stairs except that they would appear to have changed little in overall form since the 1680's but have been refurbished at

various times since. They were originally flanked by low walls on both sides at the bottom, terminated in squat piers that seem to have been removed by 1771, leaving just plain walls. The Southern one had an opening, paved with gravel, through which access onto the walkway between the gardens was possible. The roof over this structure was not depicted by Dineley so is unlikely to be original to the construction. It seems fairly certain that the stairs were paved with stone setts, although the lowest landings now lack these and the design of the treads themselves differ from higher up which hints at some alteration to the design or a total replacement at a later date. Some of these alterations may be quite recent as although in 1845 they are drawn with setts there is some uncertainty whether drawings by Buckler in 1822 show grass plats with central drains of stone setts. Further alterations are likely to have coincided with the rebuilding of the North wall sometime after 1904.

### *4.6 Gardens*

The 1752 plan shows gardens to the North of the keep but these had been built over by the time of Pritchard's plan in 1771. These gardens may have served kitchens or perhaps been private gardens away from the more public parts of the castle.

Dineley in 1684 appears to show the East garden to be grass plats surrounded by walks. Pritchard, almost a hundred years later, depicts parterres so the garden and perhaps its function changed significantly during its existence. This would complicate any attempt at restoration as in either case it would be incongruous with the later planting of the other gardens around the castle, especially as the evaluation has show the South and East garden to be explicitly linked.

This link was formed by the narrow terrace built against the foot of the High Terrace and thought to be a walkway between these two sets of gardens. At some stage it seems to have been provided with a roof and should perhaps be considered as an essential element of the East garden because of it's slightly elevated and hence highly visible situation.

The 1752 plan and the evaluation have demonstrated that the site of the East garden survives, i.e. it has not been removed or lessened in extent by later landscaping. The only major intrusive feature is the transformer and it's enclosure which would appear to occupy one of the parterres depicted in 1771.

The East garden in the position depicted on the 1752 plan which now seems more representative than that of 1771 will fit on the plateau East of the Marquess gate with its Southern edge roughly where the retaining wall South of the transformer is now. The edge almost coincides with this wall so it may be that the wall is original to the garden. A parapet, now missing; is implied by the 1771 plan. The alignment of the wall and the edge of the garden differs at most by a couple of metres at it's West end. This discrepancy is probably insignificant when compared to the accuracy of the 1752 plan and the errors inherent in mapping it onto the modern layout.

The square structure shown by Dineley in the East garden looks from his illustration to be a prospect tower. It's existence is uncertain, especially as it is not show in either of the later plans. The geophysical survey offers some evidence for it in the form of a highly resistive right-angled shape in approximately the right position, as far as can be judged from Dineley's work. It is possible that it is a feature of the original design that no longer suited the garden once it had developed further towards parterres and was therefore removed prior to 1752.

## *5) Recommendations for Future Research*

### *5.1 The medieval castle*

Plan 4 demonstrates a supposed layout of this end of the castle but much of this is still conjectural, based upon the evidence of drawings and the geophysical survey. The exact location of the towers is unknown and it is not certain whether traces of any of them survive. The geophysical survey revealed the base of a probable mural tower but no others which presents a problem for further interpretation. If the base of the large Southeastern drum tower could be located then this would demonstrate the veracity of Dineley's drawings. The other towers, illustrated by Bleaze in

1729 may be harder to locate unless targeted excavation can be applied. They are presumably rather deeply buried or rather ephemeral as they were not detected by the geophysical survey.

A limited excavation of the mural tower structure would be useful for acquiring a better idea of its condition and form and would also allow the detection of medieval surfaces and the rear face of the curtain wall if they survive. This could be extended to examine the construction of the Bowling Green and to determine whether further structures could survive beneath it.

The site of the ditch around the keep would appear to be at least partially waterlogged, probably a consequence of it being cut wholly into rock. This implies that organic and palaeo-environmental materials contemporary with the castle are likely to be quite well preserved. If it was in-filled as part of any landscaping within the bailey then artefacts of value for dating and studying activities within the bailey may exist.

Outside the bailey there are various features that need further study, including the site of the bailey ditch. There are a few locations where this could be achieved relatively easily by excavating a small trench across its line. In addition, at the end of the High Terrace there is a drop in the height of the rock of at least 2.6m to below the rubble deposits in Trench 1 which may repay further investigation.

A final, but significant feature that must be examined further is the in-filled terrace below the site of the garden. The current retaining wall should be examined in detail for any signs of structures that might once have stood upon the terrace and it would be useful to determine its depth and size as the West end was obscured in the geophysical data and the East end extends further down the hillside than the survey. The fill of the terrace may contain architectural fragments from the demolished structures and may be worth sampling mechanically to examine this. It may also be useful to determine whether its own retaining wall survives anywhere along it's length and how it was constructed. It is expected to be a very deep feature which will probably preclude any attempt to reach the floor of the terrace, except at its East end where the floor presumably is a lot shallower and probably coincides with the present ground level. This end may repay further geophysical survey and limited excavation to determine how the end of the terrace relates to any medieval outer defences etc. that may be no longer visible.

### *5.2 The High Terrace*

No traces were found of the 'banqueting house' on the end of the High Terrace during the geophysical survey. This is a little surprising because a low earthwork does exist. A limited excavation could be useful here to determine just how much of this structure survives, if anything and whether the present earthwork is related. The age of the structure implies that important data could be collected about the construction and use of these little-studied structures. It may also allow the exact function to be determined because there is a possibility that it was intended more to provide a prospect than for banqueting which may be a secondary purpose.

It would also be of interest to determine the nature of the extension of the High Terrace and whether any structures exist at its former East end. Nothing was detected during the geophysical survey but it is possible that thin masonry would have escaped detection and a substantial amount of archaeological material may remain. It is thought that the fill of the extension is probably rubble from demolished medieval structures and it would be useful to excavate a test pit to determine whether this is the case.

### *5.3 The East garden*

The greenish sandy surface found in trench 6 during excavation warrants further examination as it is unclear whether it is a part of the garden or later, perhaps for the turning of carriages at the top of the slope.

The differences between the 1752 and 1771 plan and the geophysical survey make it essential that the positions of the outer gate piers into the East garden are located, probably by excavation, so that the alignment of the garden can be settled. It would also allow the dimensions of the two early plans to be checked so that any discrepancies can be allowed for during further evaluation or reconstruction. Any excavation should also include

a short section of the garden wall and that of the outer court to ensure the size and orientation are known.

A third avenue of investigation may be to locate the site of the possible prospect tower shown to stand in North side of the garden by Dineley in 1684 but does not appear in the 1752 plan. There is some evidence in the geophysical data for its site.

Near the East end of the geophysical survey and also near it's Northern edge various anomalies that seem to indicate artificial sources could be investigated by excavation to determine their nature as it has not been possible to identify them from the survey data alone.

## Method Statement for Electrical Resistance Techniques

### 1) General issues

a. All archaeological magnetic field strength surveys in archaeology should be conducted at a minimum resolution of 1m along lines no more than 1.0m apart. A line and sample separation of 0.5m is better though and for detailed analysis is essential.

b. ArchaeoPhysica always conducts fieldwork using a clean site policy; i.e., the site is always left as found with the minimum of disturbance. For a copy of the environmental policy please ask.

### 2) Set out

a. All surveys are set out using a total station within a guaranteed tolerance of 0.05m. The exact grid layout will depend upon the individual project but in general a coarse site grid anchored to staked datums is initially set out. This usually comprises 30m or 60m squares, depending upon the size of the evaluation area, the topography and whether any other survey methods are to utilise the same grid. Each square is then subdivided into 30m squares which form the basis of the spatial coordination. Each survey line is taped out to indicate the position for each measurement. This guarantees the minimisation of long and short-range spatial errors across the evaluation. Where topographical features may distort this grid or survey has to be fitted into small perhaps awkwardly shaped areas a finer mesh still, perhaps 20m, is employed. Survey extends to the edges of the evaluation wherever possible and the edges are usually composed from short stepped sections to fit the boundaries.

b. Full quality assurance data for set-out stations is automatically logged and archived for each project.

### 3) Georeferencing

a. This can be achieved in more than one way. Every survey is accompanied by a detailed and high-resolution base plan that documents extant field boundaries, prominent features and anything that might either contaminate the survey data or enhance its interpretation. The exact position of the survey grid within the evaluation area is therefore precisely known. Results can be superimposed upon the OS grid if specifically required. This is always aided by any digital mapping data the client can provide.

### 4) Survey

a. Survey can proceed in a number of ways depending on the requirements of the survey. The different configurations allow measurements to made at different and sometimes multiple depths which can offer significant advantages when interpreting the data. Examples of configurations suitable for routine use in archaeological evaluations are:

| | |
|---|---|
| 'standard twin' | 0.5m probe separation |
| 'parallel twin' | 2 x 0.5m probe separation |
| 'double twin' | 0.5m & 1.0m probe separations |
| '1m parallel twin' | 2 x 1m probe separation |
| 'triple twin' | 0.5m & 1.0m & 2.0m probe separations |

All of these can typically be deployed at along-line resolutions of between 0.25m and 1m. The longer probe arrays have limited transverse spatial resolution due to the large separation of the probes. Where the small-scale detail of features is important it may be necessary for the survey to be done twice in orthogonal directions to maximise resolution in both directions to provide sufficient detail for the adequate interpretation of archaeological features. The double and triple twin are the default configurations used by ArchaeoPhysica as they allow some comparisons to be made between the apparent depths of features which can be an advantage on complex sites.

b. The survey is conducted using a square 20m or 30m grid. Data is collected at a maximum along-line spacing of 1m but 0.5m gives much better results. In favourable conditions between 0.3

hectares and 0.5 hectares can be surveyed per instrument per day although this area decreases as the slope of the ground increases or vegetation lengthens.

c. Current instrumentation is based around the Geoscan Research RM15 full system with MPX module and extended array.

**5) Data analysis**

a. Survey is optimised for speed and to minimise errors and this latter ensures that the raw data is usually of very high quality, something which is paramount to ArchaeoPhysica and a measure of our commitment to high standards, recognised both within and outside the archaeological discipline. Very occasionally environmental parameters may mean that we do not consider data to be adequate for presentation and in these cases it is our standard practice to resurvey. This means that our data can, at the simplest level, be presented as almost raw although the small grid size invariably means that some 'balancing' i.e.. matching of 'background' resistance levels is necessary between adjacent grids, especially for projects that extend over multiple days or are conducted during variable weather. Some 'despiking' of the data is almost always required due to small distortions caused by abnormal contact resistance values where probes are close to small surface stones or where the ground is very uneven. This is usually a problem that affects the larger probe arrays with the effect most prominent in the data collected using the outermost probes, usually corresponding to the deepest current paths. High-pass filtering can be of value for removing variations of large spatial extent caused by variations in the near-surface geology. At the 1m survey interval this has to be applied with extreme care as many narrow archaeological features, e.g., walls, are not sufficiently well sampled to permit this operation to proceed without introducing distortions in the data.

However many depth-dependent measurements are made at a point the uppermost is the one used most often for the main archaeological interpretation as it tends to contain traces of most features of archaeological interest. The deeper levels are very important for characterising features once they have been identified from the uppermost level. One of the properties of the deeper levels is that major features can sometimes be identified more clearly because there is less variation from near-surface objects like large stones or weather-induced effects. They also tend to highlight the geological variation and this can then be identified and removed from the interpretation of data from nearer the surface.

## *Complete Catalogue of Cultural Finds*

*Note that the excavation did not seek to recover all brick and non-worked stone fragments as for certain contexts they were extremely numerous. Only larger pieces were collected and hence no proportions should be expressed using these materials.*

### *List of pottery types*

| | |
|---|---|
| A B F J L N P R | local red earthenwares |
| M | local red earthenware, different firing to above |
| O | red earthenware |
| C | coal measures buff (C17-C18) |
| D E | tin-glazed earthenware |
| G | coal measures red (C17-C18) |
| H | fine earthenware |
| I | coal measures red (C17-C18) |
| K | coal measures (C17-C18) |
| Q | coal measures red (C17-C18) |
| AA | mottled ware (1690-1760) |
| AB | midland purple |
| AC | gravel-tempered ware (Late Medieval - Early Post Medieval) |
| AD | coal measures (C17-C18) |
| AE | coal measures buff fineware (C17-C18) |
| AF | cream wares |

### *List of finds by context and material*

**unstratified metal - iron (nails/...), lead, other**

- curled lead strip, an offcut, 2mm thick.

**unstratified ceramics - vessels (earthenware/stoneware/...) pipes, tile, brick, other**

- Handmade tile, curved in section, fragmentary glaze, 20mm thick, possibly a fragment of roof tile.
- on [9] non-uniform coloured cream ceramic sphere, 14mm diameter, probably a marble.

**unstratified other**

- 2 large lumps of lime

**Trench 1 [1 & 2]**
**metal - iron (nails/...), lead, other**

- 1 x iron nail rectangular section 4mm x 3mm x 50mm to tip
- 1 x iron nail, flat head 10mm diameter, ?round section shaft
- 1 x iron nail, 27mm head to tip, 3mm shaft
- 1 x iron nail, rectangular section 7mm x 5mm x 73mm head to broken end
- 1 x iron nail, rectangular section 6mm x 5mm x 67mm head to broken end
- 1 x iron nail, rectangular section 8mm x 6mm x 92mm rose head to broken end
- 1 x iron nail, rectangular section 8mm x 7mm x 130mm rose head to end (encased by corrosion)
- 1 x iron staple, rectangular section 7mm x 6mm x 140mm length
- 1 x iron staple, ?round section ~5mm x 94mm length
- 1 x rectangular section iron bar, 14mm x 12mm x 88mm
- 1 x piece iron rust with flat face

- part of lead capping of iron cramp, probably from a balustrade. Clear two layer construction with a thin (1mm) smooth lead sheet applied to the visible top of the lead cap.
- curled strip of lead trimming 1mm thick
- 1 x aluminium washer, of a type used with corrugated materials, 25mm diameter
- 1 x coin, George III penny, 1806, well worn

**stone**
- Piece of sandstone 20mm thick pierced with a round peg hole approx. 8mm diameter asymmetrical hourglass section. Lime adhering to faces and edges, perhaps indicating reuse. Possibly a roof flag.

**ceramics - vessels (earthenware/stoneware/...) pipes, tile, brick, other**
- 2 x sherds type I 5g
- 2 x sherds red earthenware, possibly flowerpot, 1 rim 5g
- 1 x sherd type M <5g
- 3 x sherds stoneware, spashes of yellowy grey glaze on exterior 20g
- 2 x fragments clay pipe stem, 6mm and 7mm diameter
- brick fragments, mixed stony inclusions and mixed clay, probably handmade, 1 corner

**glass - flat, bottle, other**
- 10 x sherds flat glass, slight greenish tint, 1 to 2mm thick
- 1 x sherd flat colourless glass 3mm thick with part of ?diamond stamp with wording inside (letters visible are ?I T A along one side, T R along other side)

**bone & teeth - bone, teeth, horn**
- 2 x bone fragments, 1 rib
- 1 x fragment of vertabrae
- 1 x fragment branched bone

**other**
- lime mortar fragments

**Trench 1 [4]**
**metal - iron (nails/...), lead, other**
- 1 x piece iron cylindrical bar length 45mm, diameter 16mm, with protrusion at one end (part of railings?)

**stone**
- fragment of fine grain buff sandstone ogee moulding 68mm tall 33m projection, virtually identical in section to the roll moulding along the coping of the North wall of the stairs.
- fragments fine-grained gritstone

**ceramics - vessels (earthenware/stoneware/...) pipes, tile, brick, other**
- 3 x brick fragments

**glass - flat, bottle, other**
- 7 x sherds flat colourless glass, 1 to 1.5mm thick

**bone & teeth - bone, teeth, horn**

- 1 x part knee/knuckle? ovid?
- 1 x rib fragment
- 3 x other small bone fragments
- 1 x tooth, partly worn cervid 1st or 2nd molar

**other**

- lime mortar fragments

**Trench 1 [6 & 7]**

**metal - iron (nails/...), lead, other**

- 4 x iron nails, rectangular section 4mm x 3mm x 64 to 66mm head to tip
- 1 x iron nail, rectangular section 4mm x 3mm x 28mm head to broken end
- 1 x iron nail, rectangular section 4mm x 4mm x 40mm head to broken end
- 1 x iron nail, rectangular section 4mm x 3mm x 54mm head to broken end
- 1 x iron nail, heavily corroded with bone fragment fused, 45mm head to end
- fragment of lead cramp with an impression of a rectangular section pin through it at one end. Has a clear impression of the stone mortice it was cast in but has a rough, perhaps combed, upper surface. Perhaps a cramp set in a mortise in a coping and used to support the uprights of a metal railing.
- 3 x lumps slag, 1 dull, ferrous content, 1 vitreous, gas bubbles, 1 unidentified grey, metallic content

**stone**

- 1 x limestone
- 1 x piece slate, 3mm thick
- stone fragments
- 8 x pieces coal/carbonaceous shale, some partly burnt

**ceramics - vessels (earthenware/stoneware/...) pipes, tile, brick, other**

- 9 x sherds type AF, incl. 1 fragment plate base, 1 wall jar or similar vessel, 5 with transverse impressed bands, 1 dish rim, 1 wavy dish rim and 1 corner angled dish rim with impressed pattern along edge 50g
- 6 x sherds coal measures buff, similar to type C
- 4 x sherds similar to type E with buff material
- 4 x sherds type AA, 1 rim
- 2 x small sherds type A
- 2 x sherds type I, one a rim of upright vessel fits with sherd from [20], other with black glaze one side only
- 2 x sherds type AE, fit together, rim upright vessel 5g
- 1 x small sherd type B
- 1 x small sherd type M
- 1 x sherd type AB, wall large vessel 20g
- 1 x sherd type AC
- 1 x sherd type AD
- 1 x sherd coal measures buff rim plate or similar, scalloped edge, yellow glaze upper side only
- 1 x sherd similar type I but finer material

- 1 x sherd fine earthenware, wall jar or other upright vessel, yellow glaze interior, lateral exterior boundary yellow one part, brown other part, possible applied over yellow
- 1 x sherd coarse red earthenware, wall large vessel, interior black glaze
- 1 x sherd coarse red earthenware, rim of large upright vessel, yellow-brown mottled glaze on rim and drips on exterior - possibly medieval cooking pot
- 6 x sherds fine stoneware, decorated with incised lines and applied stamped motifs, richly coloured deep blue and purple glazes on a white base (pattern consists of purply flowers of different sizes & leaves and white stems on a blue background) - all pieces are from a large vessel, 2 fit together 40g
- 3 x sherds stoneware white glaze both sides, 1 with springing of handle
- 1 x sherd stoneware vessel, possibly storage jar, exterior brown glaze
- 1 x sherd stoneware, mottled yellow-grey exterior glaze
- 1 x sherd fine stoneware plate rim, blue underglaze decoration on white
- 1 x small sherd fine white stoneware, blue pattern under almost translucent glaze
- 1 x sherd fine stoneware, cream glaze both sides, rim with 2 double bands impressed on exterior
- 8 x fragments pipe stem, 2 x 7mm, 5 x 8mm diameter
- 1 x fragment pipe stem with bowl rest
- 1 x complete pipe bowl with rest and part of stem, single incised line rim decoration
- fragment of lead glazed ceramic floor tile, has lime mortar on broken surfaces, possibly medieval.
- brick fragments

**glass - flat, bottle, other**

- 22 x sherds flat essentially colourless glass, 1 to 2mm thick
- 1 x sherd flat colourless glass, 5mm thick, straight edge
- 1 x sherd flat colourless glass, 4mm thick
- 5 x sherds green glass forming neck and lip of bottle (bagged together)
- 1 x sherd green bottle base, pronounced pontil
- 1 x sherd green bottle lip/neck
- 31 x sherds green bottle glass, body/shoulder/neck
- 1 x sherd degraded light green glass, forming part of neck/lip of bottle/jar (lip swells slightly from neck, ~25mm external diameter, also applied ridge round top of neck, diameter ~ 34mm) - age uncertain
- 1 x sherd colourless glass neck/shoulder of small bottle, neck ~14mm diameter, shoulder +10mm
- 1 x sherd colourless glass, shoulder bottle
- 1 x lump molten glass, essentially colourless, one end still sheet 2.5mm thick, possibly from a bottle

**shell - shellfish, snail**

- 15 x fragments of smooth oyster shell, 4 complete halves
- 8 x fragments of crinkled oyster shell, 3 complete halves
- 1 x fragmentary winkle shell
- 1 x snail, species not identified

**bone & teeth - bone, teeth, horn**

- 11 x split long bone fragments
- 5 x fragments of ribs
- 3 x end of long bone, 1 with knife cut

- 1 x fragment clavicle
- 1 x unfused epiphysis (?bovid/cervid)
- 1 x fragment shoulder blade
- 19 x unidentifiable bone fragments
- 4 x antler fragments, 2 fit together

**Trench 2 [11]**
**metal - iron (nails/...), lead, other**
- 1 x iron chisel-pointed spike, rectangular section 10mm x 8mm x ~110mm, head obscured by corrosion
- 1 x iron peg/spike, 43mm head to break, similar to above
- 1 x iron cramp, rectangular section 11mm x 6mm x 200mm, tips bent at right angles. typical of cramps holding sections of stone balustrade together

**ceramics - vessels (earthenware/stoneware/...) pipes, tile, brick, other**
- 1 x brick fragment

**bone & teeth - bone, teeth, horn**
- 1 x tooth, lightly worn pig (2nd) permanent molar

**Trench 2 [12]**
**bone & teeth - bone, teeth, horn**
- 1 x large unidentified mammalian bone, ?scapula

**other**
- 2 x fragments of charcoal

**Trench 3 [13]**
**stone**
- 2 x pieces slate, 5mm and 9mm thick, probably roofing material

**ceramics - vessels (earthenware/stoneware/...) pipes, tile, brick, other**
- 4 x sherds of 27mm flat rim of coal measures buff fine earthenware dish, blue underglaze willow pattern, 3 of which fit together
- 2 x brick fragments

**Trench 4 [17]**
**metal - iron (nails/...), lead, other**
- iron clasp nail rectangular section 5mm x 4mm x 51mm to broken tip. Head 6mm x 9mm
- small lead strip, semicircular section, 4mm x 2mm radius, possibly a strip of applied window leading

**stone**
- Coal or carboniferous shale lump, probably lightly heated

**ceramics - vessels (earthenware/stoneware/...) pipes, tile, brick, other**

- 1 x sherd, side and base large pot or dish, coal measures red earthenware, brown glazed interior
- 1 x sherd coal measures red earthenware, possibly flowerpot
- 1 x sherd coal measures buff coarse ware, yellowy brown streaked glazed exterior

**glass - flat, bottle, other**

- 1 x sherd flat glass 0.5mm thick with straight edge and very degraded surface

**shell - shellfish, snail**

- 3 x fragments of smooth oyster shell
- 1 x half oyster shell, crinkly shell

**bone & teeth - bone, teeth, horn**

- 1 x rib bone
- 1 x tooth, ?cervid molar

**Trench 5 [18]**

**metal - iron (nails/...), lead, other**

- 1 x iron nail, rectangular section 4mm x 3mm x 34mm head to tip. rose head 8mm

**ceramics - vessels (earthenware/stoneware/...) pipes, tile, brick, other**

- 1 x pipe stem fragment, mouth end, 7mm diameter
- 1 x brick/tile fragment, 14mmx18mmx5mm

**glass - flat, bottle, other**

- 2 x sherd flat glass, 1.5mm thick, green tint
- 3 x sherds green bottle glass

**shell - shellfish, snail**

- 1 x half oyster shell, crinkly shell

**Trench 6 [19]**

**metal - iron (nails/...), lead, other**

- 1 x iron nail, rectangular section 4mm x 3mm x 38mm to broken shaft, flattish head 24mm x 19mm
- iron peg, rectangular section 12mm x 15mm x 220mm long from top to tapered tip

**ceramics - vessels (earthenware/stoneware/...) pipes, tile, brick, other**

- 2 x small sherds coal measures earthenware, yellow-brown glaze one side, yellow (iron) glaze with brown (manganese) feathering on other 5g
- 2 x sherd coal measures, yellow glaze both sides, similar to scalloped sherd in context [6&7] 10g
- 1 x sherd type Q side and base of dish, decorated with simple garland pattern on side and short radial lines on base, detail in yellow glaze on brown background 50g
- 1 x small sherd type AA <5g
- 1 x sherd type D 25g

- 1 x sherd coarse red earthenware, part wall and base of jar/ similar vessel, part black glazed both sides 45g
- 1 x sherd coarse red earthenware, local type <5g
- 1 x small sherd stoneware, white glaze both sides <5g
- 6 x pipe stem fragments, 1 with mouth end intact

**glass - flat, bottle, other**
- 4 x sherds flat glass, slight greenish tint, 1 to 2mm thick

**bone & teeth - bone, teeth, horn**
- 4 x fragments long bones, possibly sheep, 2 with butchering marks, 1 with knee joint
- 1 x tooth, bovid/cervid incisor/canine

**Trench 1 [20]**
**metal - iron (nails/...), lead, other**
- iron nail, rectangular section 5mm x 4mm x 65mm head to tip. Head sub rectangular 6mm

**ceramics - vessels (earthenware/stoneware/...) pipes, tile, brick, other**
- 1 x sherd type I, black glaze inside and out, rim, fits with sherd from [6&7]
- 1 x sherd type AF, plate or dish
- 1 x sherd coal measures red, yellow and brown patterned glaze one side only

**shell - shellfish, snail**
- 1 x half oyster shell, crinkly shell, fragmented

**Trench 1 [21]**
**metal - iron (nails/...), lead, other**
- 1 x iron nail rectangular section 4mm x 2mm x 55mm to tip. Head obscured by corrosion
- 1 x iron nail rectangular section 5mm x 2mm x 61mm to break, head rectangular but heavily corroded
- 1 x iron nail, rose with chisel point, square section 6mm x 6mm x 96mm head to tip. head 18mm x 18mm
- 1 x melted & distorted triangular metal plate, too light for lead, greenish tint, oxidised creamy white surface

**stone**
- 3 fragments of fine-grained buff sandstone moulding, (1) rectangular section 27mm x 32mm point 54mm break to broken tip, no obvious architectural context, but perhaps from a finial or statue, (2) fragment of slab approx. 31mm thick with a linear protusion round in section at one end. (3) sub circular section moulding radius 10mm applied to a tapering sheet with minimum thickness 2mm and maximum 7mm at break. Ornamental attribute seems likely
- 1 x fragment of grey-blue roofing slate, max. 5mm thick
- 1 x coal fragment

**ceramics - vessels (earthenware/stoneware/...) pipes, tile, brick, other**
- 50 x sherds type R, 6 forming substantial part of large tapering flower-pot or similar vessel, with double inscribed band decoration and sub-square section rim, 7 wall with double band decoration (2 fit together), 4 wall with single band decoration, 24 wall with no bands, 2 wall

with part of circular hole ~15mm diameter, no bands, 1 wall, no bands, part of hole, sherd's edge is at base of vessel, 1 base, 3 splayed rim (2 fit together), 2 other rim 1675g
- 17 x sherds type O, 9 wall large vessel (2 fit together), 1 base large vessel, 2 splayed rim large vessel, 5 wall/splayed rim large tapering vessel, flower-pot or similar, fit together 530g
- 15 x sherds type G, 5 wall/rim large tapering vessel, flower-pot or similar, incised lateral band (4 fit together), 7 large vessel (4 fit together), 3 base of vessel (2 fit together) 360g
- 6 x sherds type B (4 rims, 2 sub-square section & 2 splayed section, 2 base of vessel, 1 part hole) 225g
- 5 x sherds type A, wall of large pot, one of which has part circular hole, diameter ~15mm 100g
- 3 x small sherds similar type A, 1 rim 5g
- 3 x sherds similar to type C, brown glaze both sides 5g
- 3 x small sherds coal measures red earthenware, matt orange glaze 5g
- 2 x sherds type F, wall/rim large tapering vessel, flower-pot or similar 125g
- 2 x sherds type J, one of which is wall next to base of vessel 30g
- 2 x sherds type K, part rim large vessel 85g
- 2 x sherds type L, 1 wall large vessel, other rim with lime on outside 50g
- 1 x sherd type A <5g
- 1 x sherd type C, wall of vessel, glazed both sides 5g
- 1 x sherd similar to type C but yellowy-brown glaze one side only <5g
- 1 x sherd type D <5g
- 1 x sherd type E, part rim bowl/dish <5g
- 1 x sherd similar to type G but with brown mottled glaze <5g
- 1 x sherd type H, near-vertical wall of jar or pot, 2-tone glaze, bounded by band combed decoration 5g
- 1 x sherd similar material to type H but with yellow glaze inside, yellow with white band outside and multiple bands impressed decoration <5g
- 1 x sherd type I, wall large vessel/dish 10g
- 1 x sherd type M, wall large vessel 10g
- 1 x sherd type N, wall/rim large vessel 40g
- 1 x sherd type P, wall large vessel 15g
- 1 x sherd type Q, rim dish 15g
- 1 x sherd type AF, rim bowl/similar vessel<5g
- 1 x sherd coarse red earthenware 5g
- 1 x sherd (body) possibly buff earthenware, burnt
- 14 x pipe stem fragments, 4mm, 6mm, 7 x 7mm, 2 x 8mm, 10mm diameter
- 2 x fragments pipe bowl, 1 comprising full height 49mm rim to bowl rest
- 1 x fragment of tile with sanded face
- brick fragments

**glass - flat, bottle, other**
- 12 x sherds flat glass, essentially colourless, all 1 to 1.5mm except 1 <0.5mm thick
- 10 x body sherds of green bottles, one from next to base, 154mm diameter
- 8 x neck and shoulder sherds of green bottles, 5 fit together
- 4 x base sherds green bottle, pronounced pontil approx. 118mm, 130mm, 145mm and unknown diameters

**shell - shellfish, snail**
- 10 x pieces smooth oyster shell, 3 complete halves
- 2 x pieces crinkled oyster shell, 2 crinkled shells

- 21 x common snails, 15 complete shells
- 4 x banded garden snail, native species but not identified
- 2 x small unidentified snails
- 1 x tiny spiral snail shell ~ 1mm long

**bone & teeth - bone, teeth, horn**
- 12 x fragments of long bones, 1 17mm diameter with knife marks
- 3 x fragment unidentified bone
- 2 x piece mammalian shoulderblade
- 2 x fragments bird bone
- 2 x fragments of ?bovid/cervid skull, 1 unfused suture, 1 with broken tooth in canal and facial structure
- 1 x mammalian vertabra
- 1 x tooth, molar, bovid?
- 1 x tooth, bovid/cervid incisor?
- 1 x boar tusk

**other**
- lime mortar fragments

**Trench 6 [22]**
**metal - iron (nails/...), lead, other**
- 1 x iron brad nail, rectangular section 4mm x 5mm x 39mm head to broken tip

**stone**
- 2 x small lumps coal

**ceramics - vessels (earthenware/stoneware/...) pipes, tile, brick, other**
- 1 x pipe stem fragment, mouth end, 8mm diameter

**bone & teeth - bone, teeth, horn**
- 1 x fragment long bone

**other**
1 x 25mm x 8mm x 2mm thick fragment odd material, looks like stone, but very light

**Trench 6 [23]**
**glass - flat, bottle, other**
- 1 x sherd green glass, bottle neck

**shell - shellfish, snail**
- 1 x half oyster shell

**Trench 1 [26]**
**ceramics - vessels (earthenware/stoneware/...) pipes, tile, brick, other**
- 1 x sherd local red earthenware, 1 incised band
- 1 x pipe stem fragment, 9mm diameter

**shell - shellfish, snail**

- 2 x small pieces oyster shell

**bone & teeth - bone, teeth, horn**

- 7 x fragments bone

**Trench 1 [27]**

**ceramics - vessels (earthenware/stoneware/...) pipes, tile, brick, other**

- 1 x sherd type AA, ?shoulder jar or similar vessel
- 1 x small sherd coal measures buff, yellow glaze both sides
- 1 x tin-glazed earthenware, white interior glaze, black exterior, foot of plate or similar dish
- 1 x small brick/tile fragment

**Trench 1 [29]**

**ceramics - vessels (earthenware/stoneware/...) pipes, tile, brick, other**

- 1 x thick pipe stem fragment, bowl end, 10mm diameter

**bone & teeth - bone, teeth, horn**

- 2 x fragments bone, possibly ribs

## Pottery Summary

| | |
|---|---|
| A B F J L N P R | local red earthenwares |
| M | local red earthenware, different firing to above |
| O | coarse red earthenware |
| C | coal measures buff (C17-C18) |
| D E | tin-glazed earthenware |
| G | coal measures red (C17-C18) |
| H | fine earthenware |
| I | coal measures red (C17-C18) |
| K | coal measures (C17-C18) |
| Q | coal measures red (C17-C18) |
| AA | mottled ware (1690-1760) |
| AB | midland purple |
| AC | gravel-tempered ware (Late Medieval - Early Post Medieval) |
| AD | coal measures (C17-C18) |
| AE | coal measures buff fineware (C17-C18) |
| AF | cream wares |

### Listed by context, fabric group in mass order

| | | |
|---|---|---|
| **Context [1&2]** | **count = 8** | **mass = 35g** |
| [1 & 2] stonewares | count = 3 | mass = 20g |
| [1 & 2] coal measures coarse | count = 2 | mass = 5g |
| [1 & 2] other coarse earthen | count = 2 | mass = 5g |
| [1 & 2] local red earthenwares | count = 1 | mass < 5g |
| **Context [6&7]** | **count = 53** | **mass = 370g** |
| [6 & 7] coal measures coarse | count = 11 | mass = 95g (26%) |
| [6 & 7] stonewares | count = 14 | mass = 85g (23%) |
| (of which 6 sherds, 40g are the fine blue/white with purply flowers) | | |
| [6 & 7] other coarse earthen | count = 2 | mass = 75g (20%) |
| [6 & 7] creamwares | count = 9 | mass = 50g (14%) |
| [6 & 7] midland purple | count = 1 | mass = 20g |
| [6 & 7] local red earthenwares | count = 4 | mass = 10g |
| [6 & 7] tin-glazed earthenwares | count = 4 | mass = 10g |
| [6 & 7] mottled wares | count = 4 | mass = 10g |
| [6 & 7] gravel-tempered wares | count = 1 | mass = 5g |
| [6 & 7] coal measures finewares | count = 2 | mass = 5g |
| [6 & 7] other fine earthenwares | count = 1 | mass < 5g |
| **Context [13]** | **count = 4** | **mass = 10g** |
| [13] coal measures finewares | count = 4 | mass = 10g |
| **Context [17]** | **count = 3** | **mass = 70g** |
| [17] coal measures coarse | count = 3 | mass = 70g |
| **Context [19]** | **count = 10** | **mass = 145g** |
| [19] coal measures coarse | count = 5 | mass = 65g (45%) |
| [19] other coarse earthen | count = 1 | mass = 45g (31%) |
| [19] tin-glazed earthenwares | count = 1 | mass = 25g (17%) |

| | | | |
|---|---|---|---|
| [19] | local red earthenwares | count = 1 | mass < 5g |
| [19] | mottled wares | count = 1 | mass < 5g |
| [19] | stonewares | count = 1 | mass < 5g |
| **Context [20]** | | **count = 3** | **mass = 15g** |
| [20] | coal measures coarse | count = 2 | mass = 10g |
| [20] | creamwares | count = 1 | mass < 5g |
| **Context [21]** | | **count = 124** | **mass = 3315g** |
| [21] | local red earthenwares | count = 74 | mass = 2280g (69%) |
| [21] | other coarse earthen | count = 18 | mass = 535g (16%) |
| [21] | coal measures coarse | count = 28 | mass = 490g (15%) |
| [21] | tin-glazed earthenwares | count = 2 | mass = 5g |
| [21] | other fine earthenwares | count = 1 | mass < 5g |
| [21] | creamwares | count = 1 | mass < 5g |
| **Context [27]** | | **count = 3** | **mass = 10g** |
| [27] | coal measures coarse | count = 1 | mass < 5g |
| [27] | tin-glazed earthenwares | count = 1 | mass < 5g |
| [27] | mottled wares | count = 1 | mass < 5g |

**Listed by fabric group, context order**

| | | | |
|---|---|---|---|
| **Coal Measures Coarsewares (C, G, I, K, Q, AD)** | | **count = 52** | **mass = 740g** |
| [1 & 2] | coal measures coarse | count = 2 | mass = 5g |
| [6 & 7] | coal measures coarse | count = 11 | mass = 95g (13%) |
| [17] | coal measures coarse | count = 3 | mass = 70g |
| [19] | coal measures coarse | count = 5 | mass = 65g |
| [20] | coal measures coarse | count = 2 | mass = 10g |
| [21] | coal measures coarse | count = 28 | mass = 490g (66%) |
| [27] | coal measures coarse | count = 1 | mass < 5g |
| **Coal Measures Finewares (AE)** | | **count = 6** | **mass = 15g** |
| [6 & 7] | coal measures finewares | count = 2 | mass = 5g |
| [13] | coal measures finewares | count = 4 | mass = 10g |
| **Other Fine Earthenwares (H)** | | **count = 2** | **mass = 5g** |
| [6 & 7] | other fine earthenwares | count = 1 | mass < 5g |
| [21] | other fine earthenwares | count = 1 | mass < 5g |
| **Local Red Earthenwares (A B F J L N P R, M)** | | **count = 81** | **mass = 2300g** |
| [1 & 2] | local red earthenwares | count = 1 | mass < 5g |
| [6 & 7] | local red earthenwares | count = 4 | mass = 10g |
| [19] | local red earthenwares | count = 1 | mass < 5g |
| [21] | local red earthenwares | count = 74 | mass = 2280g (99%) |

| | | | |
|---|---|---|---|
| [26] | local red earthenwares | count = 1 | mass = 5g |
| **Midland Purple (AB)** | | **count = 1** | **mass = 20g** |
| [6 & 7] | midland purple | count = 1 | mass = 20g |
| **Other Coarse Earthenwares (O)** | | **count = 23** | **mass = 660g** |
| [1 & 2] | other coarse earthen | count = 2 | mass = 5g |
| [6 & 7] | other coarse earthen | count = 2 | mass = 75g (11%) |
| [19] | other coarse earthen | count = 1 | mass = 45g |
| [21] | other coarse earthen | count = 18 | mass = 535g (81%) |
| **Tin-glazed Earthenwares (D E)** | | **count = 8** | **mass = 45g** |
| [6 & 7] | tin-glazed earthenwares | count = 4 | mass = 10g |
| [19] | tin-glazed earthenwares | count = 1 | mass = 25g |
| [21] | tin-glazed earthenwares | count = 2 | mass = 5g |
| [27] | tin-glazed earthenwares | count = 1 | mass < 5g |
| **Mottled Wares (AA)** | | **count = 6** | **mass = 15g** |
| [6 & 7] | mottled wares | count = 4 | mass = 10g |
| [19] | mottled wares | count = 1 | mass < 5g |
| [27] | mottled wares | count = 1 | mass < 5g |
| **Gravel-tempered Wares (AC)** | | **count = 1** | **mass = 5g** |
| [6 & 7] | gravel-tempered wares | count = 1 | mass = 5g |
| **Creamwares (AF)** | | **count = 11** | **mass = 55g** |
| [6 & 7] | creamwares | count = 9 | mass = 50g |
| [20] | creamwares | count = 1 | mass < 5g |
| [21] | creamwares | count = 1 | mass < 5g |
| **Stonewares** | | **count = 18** | **mass = 110g** |
| [1 & 2] | stonewares | count = 3 | mass = 20g (18%) |
| [6 & 7] | stonewares | count = 14 | mass = 85g (77%) |
| | (of which 6 sherds, 40g are the fine blue/white with purply flowers) | | |
| [19] | stonewares | count = 1 | mass < 5g |

## *Complete Catalogue of Photographs*

Prints and negatives are listed with the following format; Film number, Exposure and Short description.

1,04, PHL20001 from below Bowling Green. MJR seated on steps in front of Marquess Gate planning survey area.
1,05, ditto
1,06, ditto
1,07, PHL20001 looking towards woods. MJR using RM15 on Bowling Green.
1,08, PHL20001 looking towards free end High Terrace. MJR using RM15 on High Terrace.
1,09, PHL20001 looking towards Castle end High Terrace. MJR using RM15 on High Terrace.
1,22, PHL20001 trench 1 from bottom of steps towards free end High Terrace before turf removal. Note lumpy ground surface next to steps.
1,23, PHL20001 trench 1 from bottom of steps towards free end High Terrace after turf removal and cleaning. Note top of lower wall [32] by scale pole and top of higher wall [3] - these were barely covered by turf.
1,24, PHL20001 trench 1 from bottom of steps towards free end High Terrace after turf removal and cleaning. Note top of higher wall [3].
1,25, PHL20001 trench 1 down onto higher wall [3] after turf removal and cleaning. Free end High Terrace to left.
1,26, PHL20001 trench 1 down onto higher wall [3] after turf removal and cleaning. Free end High Terrace to left. Note top of lower wall [32] yet to be excavated.
1,27, PHL20001 trench 1 from bottom of steps towards free end High Terrace. Note top of lower wall [32] higher wall [3].
1,28, PHL20001 trench 1 down on higher wall [3]. Steps to right.
1,29, PHL20001 trench 1 from bottom of steps towards free end High Terrace. Note top of lower wall [32] higher wall [3].
1,30, PHL20001 trench 1 from trench lower edge towards Marquess Gate. Steps to right. Note top of lower wall [32] higher wall [3].
1,31, PHL20001 trench 1 from trench lower edge towards Marquess Gate. MJR recording contexts.
1,32, ditto
1,33, PHL20001 trench 1 from bottom of steps towards free end High Terrace. MJR working on surface [9] behind higher wall [3]. Starting to excavate lower wall [32] with small voids appearing (below scale pole).
1,34, PHL20001 trench 1 from trench lower edge towards free end High Terrace. MJR working on surface [9] behind higher wall [3]. Starting to excavate lower wall [32] with small voids appearing (below scale pole).
1,35, PHL20001 trench 1 from steps 1st landing with free end High Terrace to right of picture. Higher wall [3] on left and surface [9] emerging.
1,36, PHL20001 trench 1 from trench lower edge towards Marquess Gate. Higher wall [3] lower wall [32] emerging.
1,37, PHL20001 trench 1 from steps 1st landing with free end High Terrace to right of picture and steps to left. surface [9] emerging.
2,00A, PHL20001 trench 1 from trench lower edge towards Marquess Gate. Higher wall [3] lower wall [32] and lower flanking wall [33] visible.
2, 01A, PHL20001 trench 1 down from top of lower wall [32] showing lower flanking wall [33]. Steps on left.
2, 02A, PHL20001 trench 1 from trench lower edge towards Marquess Gate showing lower wall [32] and lower flanking wall [33].

2, 03A, PHL20001 trench 1 from trench lower edge towards Marquess Gate showing lower wall [32] and lower flanking wall [33].
2, 04A, ditto
2, 05A, PHL20001 trench 1 from steps towards High Terrace showing lower wall [32] and lower flanking wall [33].
2, 06A, PHL20001 trench 6 from SW side showing layers [22] and [23] over surface [25].
2, 07A, PHL20001 trench 6 from SW side showing surface [25] loose components layers [22] and [23] removed.
2, 08A, PHL20001 trench 6 from SW side showing cleaned surface [25].
2, 09A, PHL20001 trench 6 after extension. Towards E corner showing surface [25]. With flash.
2, 10A, PHL20001 trench 6 after extension. Towards E corner showing surface [25].
2, 11A, PHL20001 trench 1 from bottom of steps. MJR clearing loose from base of trench. Barrow prominant.
2, 12A, PHL20001 trench 1 from bottom step. MJR clearing loose from base of trench.
2, 13A, PHL20001 trench 1 from bottom step. MJR clearing loose from base of trench next to lower wall [32].
2, 14A, PHL20001 trench 6 into S corner showing surface [25] continuation and change in level (foreground).
2, 15A, PHL20001 trench 6 into S corner showing surface [25]. Closer shot showing composition of trench wall.
2, 16A, PHL20001 trench 1 from trench lower edge towards High Terrace showing lower wall [32] and lower flanking wall [33]. Also note cemented mass [31] in base of trench (right side).
2, 17A, PHL20001 trench 1 from trench lower edge towards High Terrace showing lower wall [32] lower flanking wall [33] and steps construction [36].
2, 18A, PHL20001 trench 1 from trench lower edge towards High Terrace showing lower wall [32] lower flanking wall [33] and steps construction [36] also higher wall [3] and higher flanking wall [3].
2, 19A, PHL20001 trench 1 from bank top opposite the edge 1st landing towards bottom step showing lower flanking wall [33] and steps construction [36].
2, 20A, PHL20001 trench 1 from trench lower edge towards Marquess Gate showing lower wall [32] lower flanking wall [33] and steps construction [36].
2, 21A, PHL20001 trench 1 from trench lower edge down to base of excavation showing lower wall [32] lower flanking wall [33] to right and cemented mass [31] (right) and rubble [30] (left).
2, 22A, PHL20001 trench 1 from steps. Opposite side of excavation showing layers of fill against lower wall [32] (to right). Visible are (from top) [6][10][27][21][29] and [30]. Final state.
2, 23A, PHL20001 trench 1 from trench lower edge towards High Terrace showing lower wall [32] lower flanking wall [33] and higher wall [3] higher flanking wall [3]. Profile on left shows (from top) [6][10][27][21] and [29].Final state.
2, 24A, PHL20001 trench 1 from bank opposite steps towards steps showing lower flanking wall [33] and steps construction [36].
2, 25A, PHL20001 trench 1 from bottom bank opposite steps towards Marquess Gate showing higher wall [3] higher flanking wall [3] lower wall [32] and lower flanking wall [33].
2, 26A, PHL20001 trench 1 from top free end High Terrace down over trench showing surface [9] higher flanking wall [3] and higher wall [3] (at end of near scale pole).
2, 27A, PHL20001 trench 1 from top free end High Terrace down over whole trench showing surface [9] higher flanking wall [3] higher wall [3] (at end of near scale pole) and lower wall [32] lower flanking wall [33].
2, 28A, PHL20001 walling (side High Terrace adjacent to 2nd landing steps).
2, 29A, PHL20001 side of steps looking towards High Terrace.
2, 30A, PHL20001 Bowling Green retaining wall with Marquess Gate immediately to left. Underpinning on right.

2, 31A, PHL20001 Bowling Green retaining wall with underpinning. Marquess Gate to left.
2, 32A, PHL20001 trench 1 from trench lower edge towards Marquess Gate showing lower wall [32] lower flanking wall [33] and steps construction [36]. With planning frame against lower flanking wall.
2, 33A, PHL20001 trench 5 [direction] after excavation with minidigger.
2, 34A, ditto
2, 35A, ditto

H



J



K



L



M



P



Q



R

S



T



V



W

site of ditch around keep

tower base

rear of curtain wall

former end of terrace

rubble fill of ditch?

cable trench 1

trench 5 trench 6

prospect tower?

edge of 1752 garden

edge of 1752 garden

masonry-type features suggested by geophysics

edge of former terrace

infilled former terrace

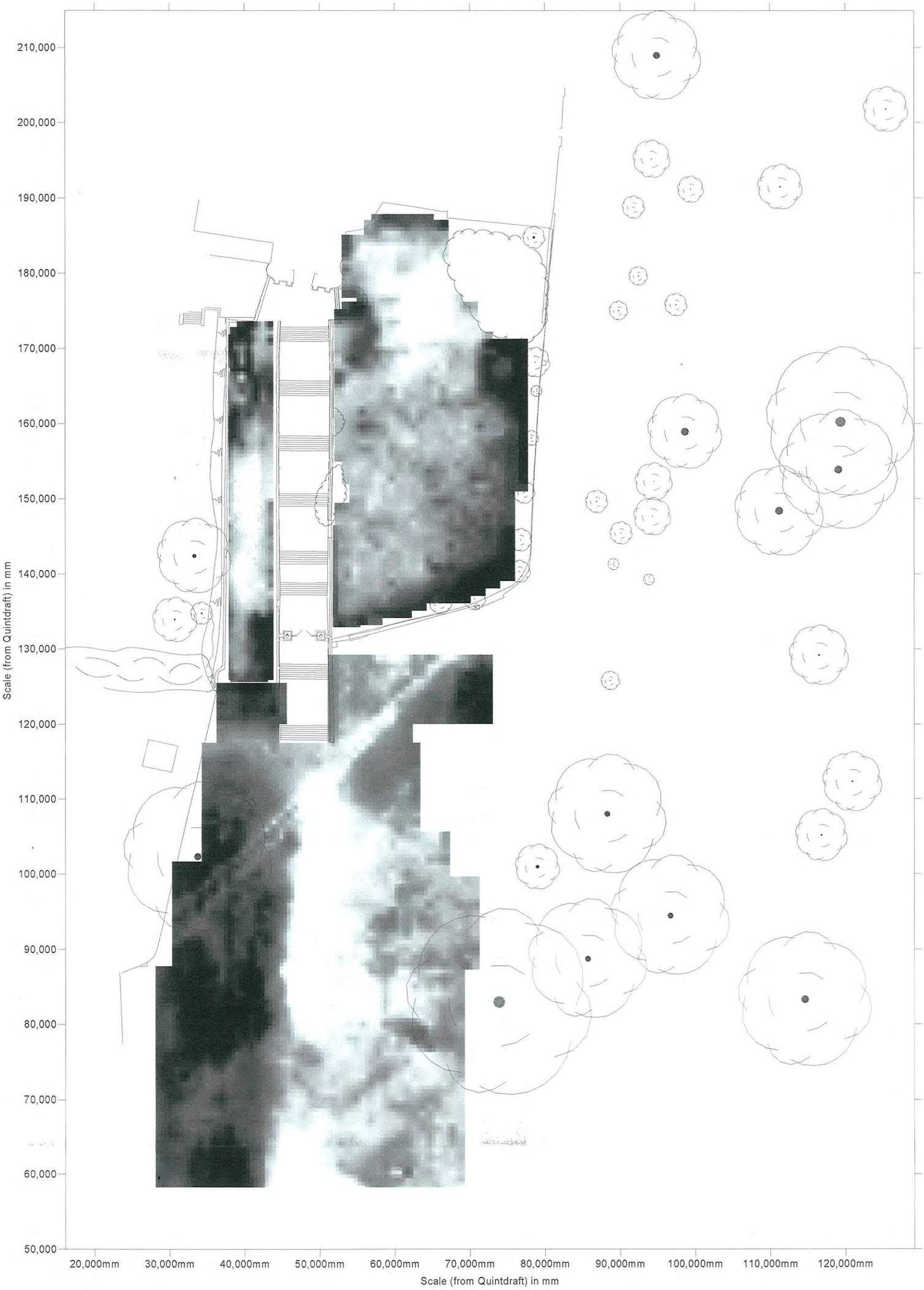
Scale (from Quintdraft) in mm

1:500

The grey stippled area indicates the extent of the geophysical survey within the park.
The base plan has been modified from data provided by Quintdraft.

Project Code: PHL20001
Project Name: Powis Castle - East end evaluation
Drawing No.: Plan 1 Author: MJR Date: March 2002
Drawing Title: Location plan of major features and feature groups.


ArchaeoPhysica
Reconnaissance and Geophysics for Archaeology

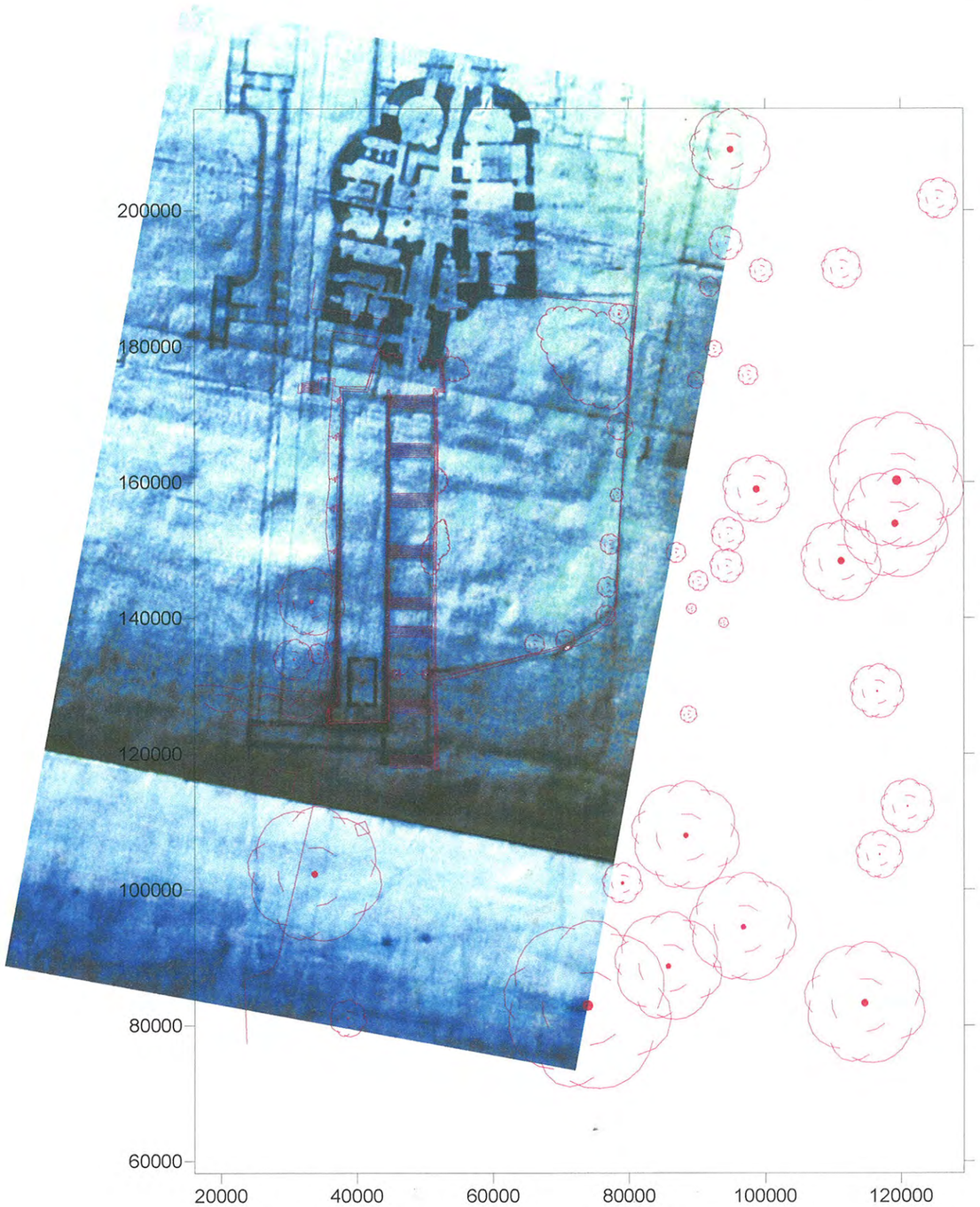



1:500

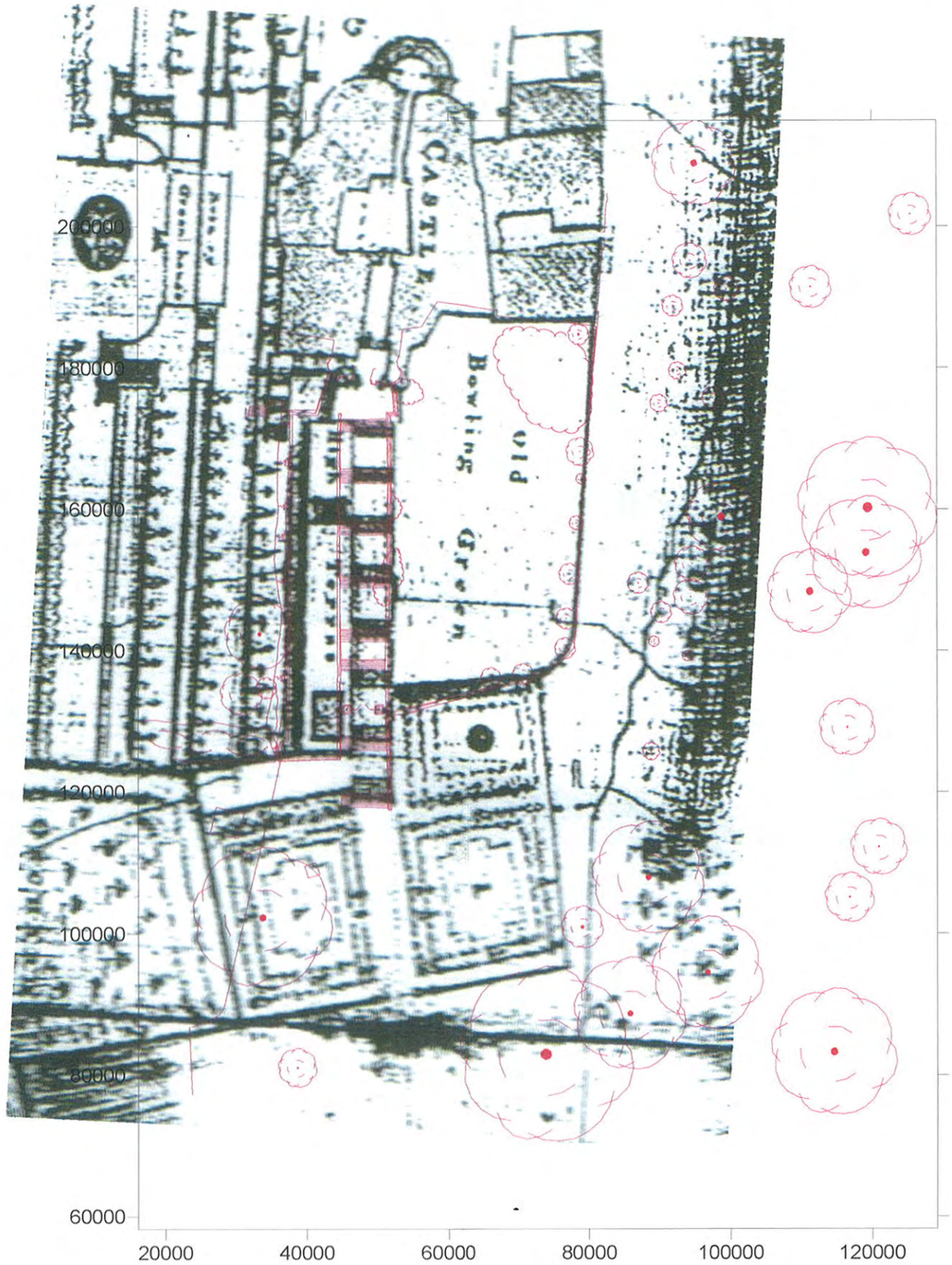
The data images here have different numerical ranges and have been prepared in different ways to ensure maximum contrast. Increasing resistance is denoted by darker tones.
The base plan has been modified from data provided by Quintdraft.

Project Code: PHL20001
Project Name: Powis Castle - East end evaluation
Drawing No.: Plan 2 Author: MJR Date: March 2002
Drawing Title: Location and data images of electrical resistance surveys


ArchaeoPhysica
Reconnaissance and Geophysics for Archaeology




Anonymous plan of 1752



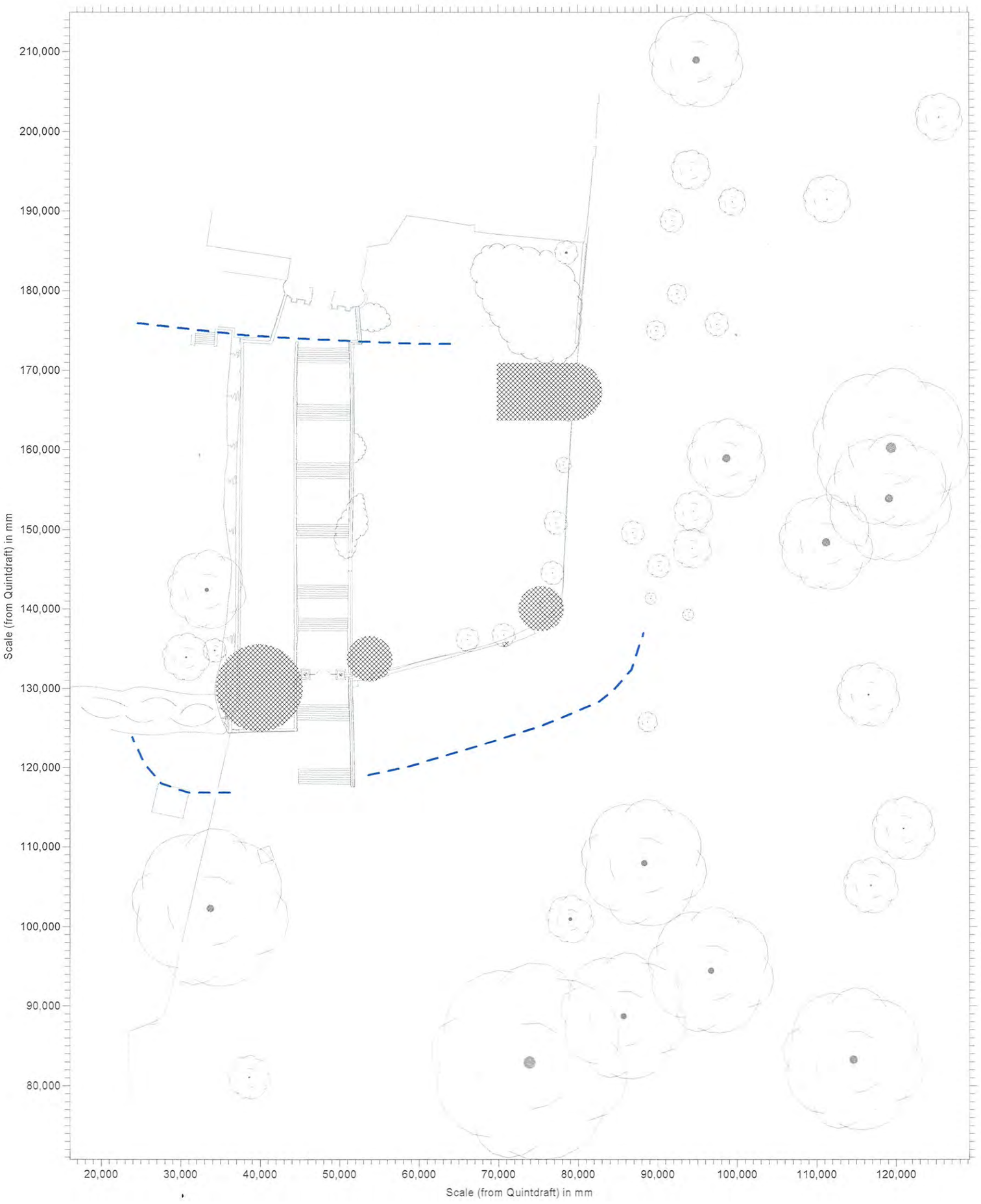

Pritchard's plan of 1771

The base plan has been modified from data provided by Quintdraft.

Project Code: PHL20001
Project Name: Powis Castle - East end evaluation
Drawing No.: Plan 3 Author: MJR Date: March 2002
Drawing Title: A comparison of the plans of 1752 and 1771 with the modern layout


1:500

ArchaeoPhysica
Reconnaissance and Geophysics for Archaeology




The base plan has been modified from data provided by Quintdraft.
This model has been formed from a combination of illustrations and geophysical data;
it is not a definative model and only serves to illustrate a general form of construction.

1:500

Project Code: PHL20001
Project Name: Powis Castle - East end evaluation
Drawing No.: Plan 4 Author: MJR Date: March 2002
Drawing Title: Suggested layout of the East part of the medieval castle


ArchaeoPhysica
Reconnaissance and Geophysics for Archaeology