



Historic England

Investigation and Analysis

Marble Hill, Twickenham, Greater London: Landscape Investigations

Magnus Alexander and Edward Carpenter, with Matthew Bristow,
Gill Campbell, Matt Canti, Zoë Hazell, Neil Linford, Paul Linford,
Andrew Payne, Cara Pearce, Nicky Smith, and Sharon Soutar

Discovery, Innovation and Science in the Historic Environment



Research Report Series 005-2017

**MARBLE HILL HOUSE
TWICKENHAM
GREATER LONDON**

LANDSCAPE INVESTIGATIONS

Magnus Alexander and Edward Carpenter,
with Matthew Bristow, Gill Campbell, Matt Canti, Zoë Hazell, Neil
Linford, Paul Linford, Andrew Payne, Cara Pearce, Nicky Smith, and
Sharon Soutar

NGR: TQ 1730 7362

© Historic England

ISSN 2059-4453 (Online)

The Research Report Series incorporates reports by Historic England's expert teams and other researchers. It replaces the former Centre for Archaeology Reports Series, the Archaeological Investigation Report Series, the Architectural Investigation Report Series, and the Research Department Report Series.

Many of the Research Reports are of an interim nature and serve to make available the results of specialist investigations in advance of full publication. They are not usually subject to external refereeing, and their conclusions may sometimes have to be modified in the light of information not available at the time of the investigation. Where no final project report is available, readers must consult the author before citing these reports in any publication.

For more information write to Res.reports@HistoricEngland.org.uk
or mail: Historic England, Fort Cumberland, Fort Cumberland Road, Eastney, Portsmouth PO4 9LD

Opinions expressed in Research Reports are those of the author(s) and are not necessarily those of Historic England.

SUMMARY

In late 2015, the English Heritage Trust (English Heritage Trust) submitted a successful Stage 1 bid to the Heritage Lottery Fund to develop Marble Hill House and its park in order to improve its presentation and the associated leisure facilities. In support of this and the following more detailed Stage 2 bid Historic England undertook a range of landscape investigations during the winter of 2015 and spring of 2016. These included various geophysical surveys, aerial photography and lidar mapping, analytical earthwork survey, coring and vegetation analysis. This report presents the results of these surveys (the results of the geophysical surveys have already been published (Linford et al 2016) and are summarised here) and a synthesis outlining the development of the Marble Hill landscape from the 17th century onwards is set out.

The project has demonstrated that the low rectangular area in East Meadow was probably a gravel pit pre-dating the house. There is enough circumstantial evidence to suggest that an early garden design, thought to be by Alexander Pope and from about 1724, may have been at least partially implemented and that it was perhaps the acquisition of land to the south after work began that prompted a redesign resulting in the stronger north-south axis seen ever since. The project has also confirmed the accuracy of the plan of about 1752 and provided additional information on various topographic features and planting. In the mid-18th century the Pleasure Ground was expanded to the east and the Sweet Walk laid out to the west and north and evidence for both of these was recorded. Evidence for further developments in the 19th century were also seen across the park, in particular to the south of the house where the remains of an Italianate garden were recorded and to the east where evidence for Little Marble Hill and its approaches was seen. At the turn of the 20th century it was planned to develop Marble Hill as a housing estate and evidence for the preliminary work for this was seen to the north of the house. During the Second World War the park was given over to extensive allotments (perhaps persisting in some areas into the 1960s) but retained a surprising amount of sports provision.

CONTRIBUTORS

Magnus Alexander was the project manager, undertook the analytical earthwork survey supported by Nicky Smith, Sharon Soutar and Matthew Bristow, provided field support for the coring and tree stump recording and analysis, and collated and edited this report including the geophysics summary. Edward Carpenter undertook the aerial photographic and lidar recording and analysis and provided much of the historical text, particularly for later periods. Gill Campbell and Zoë Hazell undertook the tree stump recording and analysis, Matt Canti the environmental coring and analysis. Paul Linford provided the information and illustrations for the summary of geophysical surveys undertaken by himself, Neil Linford, Andrew Payne and Cara Pearce. Sharon Soutar produced many of the illustrations.

ACKNOWLEDGEMENTS

Brian Kerr, Historic England's Head of Intervention and Analysis, provided oversight and management. The surveys were underpinned by the topographic survey undertaken

by Greenhatch Group (2015) commissioned by David Andrews of Historic England's Geospatial Imaging Team. Simon Crutchley of Historic England's Investigation Team West processed the lidar data. Historic England's GIS Team, notably Matt Wright and Chantelle Smith, gave considerable support when setting up the GIS, particularly the online element.

Emily Parker and Megan Leyland of the English Heritage Trust (EHT) helped with identifying and obtaining historical maps and other sources and answered various queries as did Dr David Jacques.

The EHT staff at Marble Hill enabled access and offered much practical support including Brian Clarke, Andrea Artan, Gary Kielty, John Telfer and Lukasz Dabek. The Mears grounds staff under Cliff Simmons cleared much of the undergrowth in the woodland panels enabling earthwork survey in these areas particularly Dave Moss, Steve David, James Lerwill and Paul Knape. The café staff fed and watered us.

Finally thanks to those who granted permission to use images; Norfolk Record Office, The British Library, The Duke of Northumberland, and National Records of Scotland.

ARCHIVE LOCATION

Individual teams. Aerial Investigation and Mapping survey results are available from the Historic England Archive. Monument records are available from Pastscape.org.uk.

DATE OF RESEARCH

Fieldwork was undertaken from November 2015 to May 2016.

CONTACT DETAILS

Historic England, Brooklands Avenue, Cambridge, CB2 8BU

Magnus Alexander, 01223 582776, magnus.alexander@HistoricEngland.org.uk

FRONT COVER

A low level aerial view of Marble Hill House from the south showing the relationship between the house and the River Thames with the South Lawns in the foreground, the wooded quarters around the house and the Great Lawn beyond, note also the level of public use of the grounds (© Skyscan Balloon Photography Source: Historic England Photo Library K940465)

CONTENTS

INTRODUCTION	1
Location and extent	2
Topography and geology	4
Historical summary	5
Designations	7
Previous research	8
The house and grounds	8
The wider area	9
Background to the project	10
THE STORY OF MARBLE HILL	12
Early history	12
The 18th century	15
The early 1750s	17
An earlier layout?	28
The later 18th century	30
The 19th century	34
Early 19th century	34
1825 to 1887: General and Lady Peel	37
After 1887	43
The 20th century	46
Saved for the nation, secured for the people	46
Farming in the park	49
Sport and leisure	54
RESEARCH ELEMENTS	60
Aerial photographic and lidar survey and analysis	60
Methodology	60
Results	63
Analytical earthwork survey	65
Methodology	65
Earthwork description	66
Figures (overleaf)	115
Coring	127
Methods	127
Results	128
Discussion	130

Survey and identification of tree-stumps within ‘The Quarters’	131
Introduction	131
Methods	131
Results	133
Discussion	135
Conclusions	139
Geophysics summary	141
Introduction	141
Results	141
Conclusions	148
Figures (overleaf)	149
PROJECT METHODOLOGY	154
Project geographical information system	154
Methodological conclusions	154
Further work	155
REFERENCES	157
Newspaper articles	159
APPENDICES	162
Appendix 1: Historical detail	162
Henrietta’s life	162
Acquisition and tenure	165
The house and grounds	168
Appendix 2: Historic maps and plans used in this research	174
1635: The Glover view	174
1711: The Earl of Mar’s ‘Scatch’	174
About 1724: Garden design attributed to Pope	177
1746: Rocque	177
1752: Deed plan	177
About 1752: Plans of Marble Hill Park	178
1754: Rocque map	181
1786/7: Sauthier map	181
1819: the Greenwood map	181
1819: ‘Inclosure award’	182
1846: Warren map	182
1873: Marble Hill deed plan	182
Ordnance Survey maps	184

INTRODUCTION

Marble Hill Park formed the pleasure grounds and gardens to the house built for Henrietta Howard in the second quarter of the 18th century on the Thames west of Richmond (Figure 1). Landscaping appears to have begun in 1724 at the same time as, or very soon after, house construction and involved both Alexander Pope and Charles Bridgeman. The grounds were later altered principally in the later 1700s for the Earl of Buckinghamshire and in the mid-19th century by General Jonathan Peel MP. They have been open to the public since 1903 after being brought into public ownership the previous year and both house and grounds passed into the care of English Heritage in 1986 (National Record of the Historic Environment (NRHE), UID 1142371).



Figure 1 – ‘The Thames near Marble Hill’ in about 1762 by Richard Wilson, Marble Hill House is visible to the right (© Historic England DP J920262)

This report emphasises the history and development of the park. It presents the conclusions of the research first as a narrative, though geographically based, history, with the background information, including details of underpinning research, given subsequently. The results of the geophysical surveys have been published separately (Linford et al 2016) and for ease of reference a summary of these results is also presented.

The project has served to accurately identify and locate a huge range of features, both spatially and chronologically. This has included both previously known and unknown features and has served to demonstrate and refine the accuracy of some key sources such as the 1752 and 1786 maps to be used in the planned garden

reconstruction (see Appendix 2). The project has also added information to that known from these maps, and suggested that a 1724 plan may have been at least partially implemented before the design was reconsidered. The work has also provided evidence for the development of the park in the 19th century and added much detail to what was known of the development and removal of Little Marble Hill and its precursors along the eastern side of the park. The project has also been able to flesh out the 20th century development of the site as a public park including the sports provision and its use during the Second World War. All of this will be vital in the designs for the redevelopment of the park and will enable a much more nuanced interpretation of the history of the grounds to complement that of the house.

Location and extent

Marble Hill House (NGR TQ 1730 7362) currently lies in the London Borough of Richmond upon Thames, to the north-west of the river it was formerly in the historic county of Middlesex. Its postal address is Richmond Road, Twickenham, London, TW1 2NL and it is about 1km (0.6 miles) ENE of central Twickenham, 1.5km (0.9 miles) south-west of central Richmond and 800m (0.5 miles) south-east of St Margaret's, the nearest railway station.

Marble Hill Park covers 26.7 hectares (66 acres) and the house occupies a level, approximately central position within this. The main features are orientated ENE-WSW or WNW-ESE (see Figure 3 below); though for simplicity the ordinal points will be used as far as possible. The park is defined to the north by Richmond Road and the rear of properties facing onto Cambridge Park, to the south by the embanked towpath along the north bank of the Thames, sometimes known as Warren Path, to the east by the Meadowside housing development and to the west by Montpelier Row and Orleans Road.

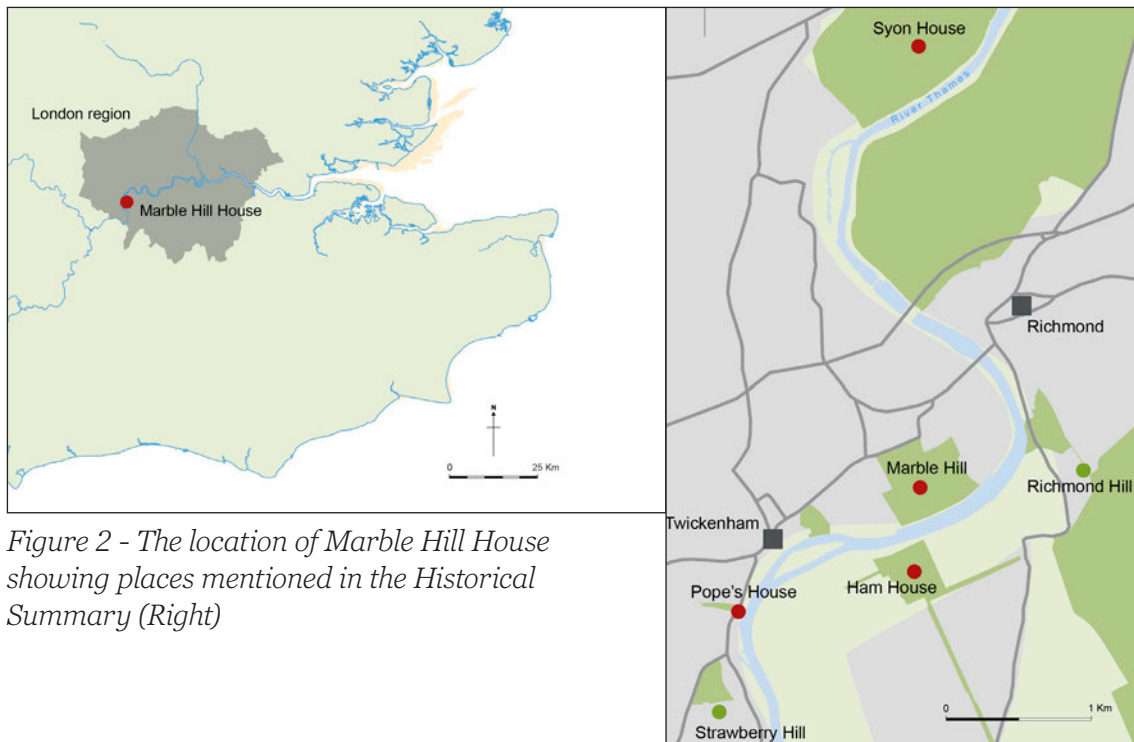


Figure 2 - The location of Marble Hill House showing places mentioned in the Historical Summary (Right)

Marble Hill Park can be divided into several distinct character areas (English Heritage Trust 2015). These comprise (Figure 3):

- The former Pleasure Grounds around the house and the lawns south towards the river including the four wooded quarters, Icehouse and Grotto;
- The West Meadow mainly set out as rugby pitches;
- The Great Lawn north of the house with the cricket pitch and nets, tennis courts and wooded areas with tracks/paths around the edges;
- The car park, adventure playground and works area;
- The East Meadow, set out as football pitches;
- The site of Little Marble Hill in the eastern corner of the park and along its north-east side.

The park has year round open public access during daylight hours. The works area is kept locked for security and health and safety reasons, and the playground is controlled to ensure child safety. The house is currently open for guided tours on Saturdays and Sundays between March and October.



Figure 3 - The park character areas and topography (based on Greenhatch Group 2015 and LIDAR TQ 1773 Environment Agency 2007 © Historic England)

Topography and geology

In broad terms, Marble Hill Park comprises two broadly level areas divided by a south facing slope (Figure 3). The majority of the park lies to the north of this slope and is higher and well drained. The smaller area to the south of the slope is low lying, and prone to waterlogging and flooding from the River Thames.

The house occupies a very slightly elevated position at a little above 8.25m above Ordnance Datum (OD), but the area to the WNW is also relatively high at about 8.00mOD. The fields originally bearing the name 'Mardelhyll' were situated here (see Appendix 1 below) so it seems likely that this slight eminence is natural. Most of the park to the north and north-east of the house is flat ground lying slightly below 8.00mOD. A broad, shallow NNW-SSE valley ran to the east of the house somewhat obscured by a large, artificial, rectangular depression (see 'Early history' below), the ground dropping to slightly less than 6.50mOD before rising again to about 8.00mOD along the eastern side of the park. The south-east corner of the park, the former site of Little Marble Hill and earlier buildings, is also at about 8.25mOD.

The house is set about 65m north of the broad but well-defined slope down to the floodplain of the Thames. The slope runs west from the eastern corner of the park to the south of the house, then curves in a more north-westerly direction before being obscured by housing at the south end of Montpelier Row. Relative to the house the slope runs obliquely across the South Lawns to the south of the woodland quarters.

The lowest ground to the south of this slope was at about 4.00mOD and level. This included the southern third of West Meadow and extended east across the southern part of Lower Lawn narrowing and rising into the area south of the black walnut tree. The northern part of West Meadow was slightly higher at about 5.00mOD and the ground rose along the south-west edge of the park creating a broad valley lost beneath development to the north-west. The floodplain was separated from the river by an embanked towpath immediately outside the southern boundary of the park, with the surface at 4.90-5.2mOD. To the south of this runs the River Thames which is tidal here though this was not the case when the house was built; it only became so sometime between 1750 and 1770 (EBA 1989). This is probably due to both the eustatic sinking that has led to the construction of the Thames Barrier at Greenwich combined with increasing hard engineered of the river banks downstream making them less accommodating of tidal waters.

The park sits on London Clay, an Eocene sedimentary clay and silt formation. This is overlain by superficial deposits of Langley Silt (formerly Brickearth) over the northern parts of the park, and to the south on the lower ground by alluvium (Geological Survey of England and Wales 1972, 2016). Soils appear to vary with the superficial geology, being well drained coarse loamy and some sandy soils of the Hucklesbrook association (571w) to the north and stoneless mainly calcareous clayey soils affected by groundwater of the Thames Association (814a) to the south (Soil Survey of England and Wales 1983).

Historical summary

It has been noted that ‘The park has a rich history of which much documentary and physical evidence survives’ (CMP 2015, 5). Rather than reiterate this at length, a summary history is given below to provide a framework for the discussion of the landscape history of Marble Hill Park. A more detailed tabulated history of key events is given in Appendix 1 which also contains further references.

The Earl of Mar (John Erskine, *baptised* 1675, *died* 1732) was apparently the first person to consider building at Marble Hill (see in particular the 1719 overlay to the 1711 ‘scatch’ map of the area, Appendix 2). He was a key figure in the 1715 Jacobite rebellion and had to flee to Paris where he became embroiled in double dealing between the Hanoverians and Jacobites (Ehrenstein 2015). Any plans he may have had for Marble Hill were abandoned amidst his political intrigues.

It was Mrs Henrietta Howard (née Hobart) who built the house in the 1720s (Figure 4). Henrietta was born into the Norfolk gentry in about 1689 and in 1706 married



Figure 4 - Portrait of Henrietta Howard in about 1724 by Jervas; it has been suggested that the landscape in the background is a stylised version of the view from Richmond Hill and that the buildings shown may have been intended to represent the planned Marble Hill (© Historic England DP 920090)

Charles Howard who proved to be completely unreliable and the marriage was unhappy. In 1714 she was appointed woman of the bedchamber to Caroline, Princess of Wales and Charles received a similar appointment with the Prince of Wales. It was presumably sometime after this that Henrietta became the Prince's mistress, an affair that lasted until 1734 when she fell out of favour as she aged. In 1723 the Prince had settled £11,500 of South Sea stock on her and it was this that probably enabled her to begin planning for a house, though her husband seems to have been a constant threat to her security until his death in 1733. After this her life seems to have taken a turn for the better and she remarried and began to spend much more time at Marble Hill, though she only moved there full time in 1746.

The suitability of the site for a house came to the attention of the Earl of Ilay who was looking for a site for Mrs Howard whom he probably incorrectly thought had influence at court. The multiple fields involved, several of which were also in multiple ownership and/or sub-tenanted (there were over a dozen copyhold tenants and freeholders with an interest in the area), complicated the acquisition of the land, which in turn probably affected the development of the grounds (Jacques 1995). Construction of the house began in June 1724 (though planning seems to have begun in 1723) and the final bills were paid in 1729. The planning of the gardens may also have commenced in 1723 when Lord Peterborough wrote to the poet Alexander Pope (a friend of Henrietta's from court and near neighbour) 'no time is to be lost either if she intends to ... prepare for planting' and requested the dimensions of 'Marble Field'. By September 1724 planning was definitely under way. In that month, the landscape designer Charles Bridgeman and Pope visited, Bridgeman mentioned drawing up plans, and accounts submitted referred to a mount, bowling



Figure 5 - Marble Hill from the River Thames in 1749, colour engraving after Augustin Heckell (© Historic England Archive DP J900203)

green, yew hedge and garden roller. In 1725 there was mention of newly planted trees causing damage, and the kitchen garden was mentioned in 1726. The author Jonathan Swift mentioned the icehouse, walks, groves, gardens and wildernesses in a poem of 1727.

In the 1750s Henrietta got involved in a dispute over rights of way with a neighbour, one Mr Fridenberg, which necessitated her brother taking control of her property. The map of about 1752 central to the development plans for the house is thought to have been commissioned as part of this dispute. Following the death of her brother in 1756 and the resolution of the dispute with Fridenberg in 1757 Henrietta took direct ownership of land that had been controlled on her behalf and continued the acquisition of land and rights to consolidate the estate.

Henrietta died in 1767 and her will set a legal entail on the house ensuring that it and its contents descended with the estate. Nevertheless, the house and perhaps the grounds were probably neglected and some parts were rented out separately. The estate passed to her great niece Henrietta Hotham who lived there until 1795. From this point she rented it out until her death 1816 when it passed to the 5th Earl of Buckinghamshire who also rented it out. Consequently this appears to have been a period of stasis and no significant developments can be attributed to this period.

In 1824 the 5th Earl and his brother broke the entail and sold off the estate. Much of it passed to Jonathan Peel, the younger brother of Prime Minister Sir Robert Peel, later a general and MP. There then followed a long period of stability and development that included the removal of the former service areas including the stables and their replacement with those seen today. He lived at Marble Hill with his wife until his death in 1879 and she remained there until her own in 1887 resulting in a considerably longer period of continuous occupation than that of Henrietta.

Following this the site was neglected for several years until it was acquired in 1898 by the Cunard family who intended to develop it as a housing estate. Some initial works took place but there was considerable local objection to the plans that contributed to the protection of the view from Richmond Hill to the east by Act of Parliament. The estate was acquired by a group including London County Council, Richmond Corporation, Surrey County Council and Twickenham Urban District Council who set about clearing the preliminary works and it was opened as a public park in 1903. It always appears to have been popular for sport and the house served as a tea room. It was passed to English Heritage in 1986.

Designations

Marble Hill House is Listed Grade I (National Heritage List for England (NHLE) UID: 1285673) and the Ice House, White Lodge and Stable Block Grade II (NHLE UID: 1194472, 1250209 and 1357725 respectively).

The wider park is Grade II* on the Historic England Register of Parks and Gardens of Special Historic Interest (NHLE UID: 1364). It is also included in the Richmond Hill view which is protected by Act of Parliament.

Twickenham and Marble Hill have been designated an Archaeological Priority Area (APA); an area where there is significant known archaeological interest or potential for new discoveries (Greater London Historic Environment Record (GLHER) no: DLO33460). The Thames and its foreshore are also an APA (GLHER no: DLO33481).

Several other local designations also apply. It is classified as: Metropolitan Open Land; a Thames Policy Area (including Thames Landscape Strategy); a Site of Local Importance for Nature Conservation and lies within the Twickenham Riverside Conservation Area.

Previous research

The house and grounds

In addition to numerous guidebooks produced over the years, a much more detailed history of the house and its owners was published by the Greater London Council in 1970 (Draper & Eden 1970). In 1986 the Borough of Twickenham Local History Society published a booklet focussed more on the estate (Anon 1986).

The primary Historic England Archive reference for Marble Hill Park is the NRHE Monument HOB UID 1142371 (the primary record for the house is the Listing above). The Greater London Historic Environment Record (GLHER) has several records relating to the house and grounds. That for the house is GLHER monument ID MLO91441 and for the park MLO 993009 (as well as 226005/00/00 – MLO592). Within the grounds the icehouse, grotto and stable block also have records (MLO91140/19054/91499 respectively).

A few archaeological interventions have taken place within the park. The in-filled grotto was excavated in 1984 by Gill Chitty (GLHER ID: MLO19054), though this has not been published and the current archive is incomplete. A brief summary of the excavation reported the findings:

The grotto consisted of a single rectangular chamber in brick, formerly roofed with a barrel vault. The interior was floored with decorative pebble work through which a well had been cut. The walls of the interior, decorated with shells, glass and a variety of slags, clinker and crucible from industrial processes (including glass working, brick making, iron and copper smelting) were less well preserved although large quantities of this decorative material were recovered from the fill. (Chitty 1985)

In 2004 English Heritage commissioned Northamptonshire Archaeology to undertake a topographical survey of part of the Pleasure Grounds area of the park, followed by a geophysical survey and trial excavation:

This was conducted in order to establish the size and depth of a culvert known to run from a former service wing located to the east side of the house. The excavation did not locate the culvert, which

must lie more than 1.2 metres below the present ground surface. Examination of documentary sources and earthwork remains confirmed that though the surrounding park has undergone extensive later amendments, elements of earlier landscaping have survived. (GLHER ID: ELO2542).

They also examined a brick culvert in the east corner of the park which must have been related to Little Marble Hill or a predecessor. Their report was reproduced as Appendix 9 of the 2006 LMP and Appendix 3 of the 2015 LCMP (below). In 2005 AOC Archaeology undertook a watching brief during cable laying and groundworks for a CCTV system at Marble Hill House, but no archaeological finds or features were seen (GLHER ELO6621).

There has also been a sequence of management documents and supporting research undertaken for the park since it came into the ownership of English Heritage. In 1989 Elizabeth Banks Associates (EBA) produced a plan for the restoration of the gardens and park (EBA 1989). This included a summary chronology which was reproduced as Appendix 2 of the 2015 draft LCMP (below). In 1994 the history of the park and in particular land tenure and its influence on the formation of the designed landscape was investigated in detail by Dr David Jacques. As a result of this work he was asked to contribute to the 2006 LMP below. His report on the design history of Marble Hill was included in this as Appendix 4 and also as Appendix 1 of the 2015 draft LCMP.

In 2006, English Heritage commissioned a Landscape Management Plan (LMP) from Land Use Consultants (LUC 2006). This included some new historical research and reproduced several earlier research outputs.

A draft Landscape Conservation Management Plan (LCMP) for Marble Hill was produced in 2015 (English Heritage Trust). This was based in part on earlier work mentioned above such as EBA 1989 and LUC 2006. This was incorporated into the latest Marble Hill House Conservation Management Plan (CMP, BHC 2016).

The wider area

There is little archaeology known from the wider area. From the prehistoric periods the Palaeolithic fossil of a saiga antelope (*Saiga tatarica*) was recovered locally in the 19th century (GLHER MLO103163), a Mesolithic tranchet axe or adze was found at St Margaret's to the north (MLO183), and a few flints from various periods have been recovered during evaluations (below).

An archaeological evaluation was undertaken by the Museum of London Archaeological Service in 1993 at the Beaufort Works, north of the car park and just outside the park. This was one of the few archaeological interventions in the immediate vicinity to reveal archaeological features: 'Post medieval cut features with dates from 1600 to 1800 were recorded, consisting of postholes and pits. Individual finds included fragments of prehistoric and medieval pot. There was also a relatively deep soil profile dating to at least the post-medieval period' (GLHER ELO7454).

A year later another evaluation was undertaken by Wessex Archaeology at Meadowbank, a little to the east of the park (GLHER ELO2988). Fourteen pieces of worked flint possibly of later Mesolithic date (and six of burnt flint) were recovered but no areas of prehistoric activity were identified. A medieval potsherd, from a 12-13th century cooking pot rim, was also recovered. In addition, three animal burials (two horse, one dog), and various other features, probably dated from the turn of the 19th/20th century when the site was occupied by the stable block of a former property on the site, were recorded (GLHER MLO610).

A foreshore survey was undertaken in 1996 (see GLHER 022382 to 022447, not inclusive). Although beyond the limit of the park, this revealed a wide range of structures along the river bank immediately south of the park relating to river traffic including a boathouse, wharfs, jetties, steps, and mooring posts, emphasising the importance of the river. It also revealed organic deposits potentially valuable for environmental reconstruction. A number of archaeological finds have been recovered from the adjacent River Thames but probably originated elsewhere. These include a Mesolithic tranchet axe or adze (MLO180), a Neolithic adze (MLO189), and a Neolithic axe and two Bronze Age socket and loop spearheads (MLO 311).

Background to the project

This research project was initiated by the English Heritage Trust (EHT) under its Shared Services Agreement with Historic England. The EHT has made a Heritage Lottery Fund (HLF) bid to develop Marble Hill House and Park under the HLF's 'Parks for People' initiative. At the time of writing the development project had made a successful outline Stage 1 bid to the HLF and was about to submit the detailed Stage 2 proposals.

The EHT development project aims:

To deliver a full scale re-presentation of Marble Hill that not only tackles the physical deterioration of the site but also, directly and through partners, engages the local and wider community with Marble Hill and its fascinating history, thereby securing a sustainable and inclusive future for the site. House opening hours will be extended and entry will be free to all, increasing access to this important heritage asset (English Heritage 2016, Section 3a)

The plans are wide ranging and include the development of a full events programme to diversify and broaden audiences, enhanced education provision, the appointment of an Audience Development Manager and a Head Gardener/Volunteer Manager, as well as the creation of a 12-month structured curatorial internship, paid trainees and new volunteer opportunities.

Over the next few years, the works will focus on the restoration, reinterpretation and development of the park's core attributes: the Grade II*registered landscape; the public amenities of the wider park; and the Grade I listed House. The aim is to provide a more considered balance between the formal areas of the site and those with more municipal use. Specific elements include:

- The restoration of the lost 18th-century Pleasure Grounds and Sweet-Walk;
- Improvements to the wider park including the East and West Meadows, the sports pitches, park furniture, paths and road ways;
- The re-presentation the house and its contents;
- The creation of new interpretation panels to tell the story of the house and landscape;
- Targeted conservation and repair of Marble Hill House;
- The development of a new ‘commercial hub’ at the Stable Block by renovating the existing buildings and constructing a new café and shop;
- Improved sports facilities and infrastructure (including bookings website and the addition of female changing provision);
- Improved access to the whole site, to include the installation of a lift within Marble Hill House itself;
- The construction of a new play area for young children;
- Over 4 hectares of improved biodiversity including: new wetland habitat, meadow grassland and improved woodland margins.

The aims of this Historic England project were to: Support the EHT development project and protect the historic environment by ensuring its significance and sensitivity were well understood and incorporated into the EHT development plans and by making a record prior to development (Alexander 2015). For this reason the project focussed on the landscape of Marble Hill Park using a range of research techniques. The house was excluded as it is not to be directly affected by the proposals.

THE STORY OF MARBLE HILL

Parts of this discussion refer to features noted elsewhere in the report, primarily the earthwork survey and geophysical summary in 'Research elements'. Earthwork features are cross referenced as [#]. Features revealed by the geophysical surveys are cross referenced as [m#], [r#], or [gpr#] referring to magnetic, resistance or ground penetrating radar responses/anomalies respectively. Most mentions of features mapped from aerial photos (AP)/lidar mapping are only discussed here and not cross referenced. The results of the coring and tree- stump analyses are referenced directly.

Early history

Despite the archaeological discoveries mentioned above there is very little evidence for the early history of the site and it seems highly unlikely that it was settled, particularly after the Romano-British period. Lying between Richmond and Twickenham, two settlements with Anglo-Saxon origins, it was probably farmland throughout the medieval period, though it is always possible dispersed settlement sites remain to be discovered.

The place-name comes from two fields, one including the later site of Marble Hill House and land to the south and the other to the west of this, and derives from 'Mardelhyll' first mentioned in 1350 Ministers' Accounts, though probably of Anglo-Saxon origin (Gover et al 1942, 30). Given that the area was within open fields at this time (below), the name must have referred to a feature of this area rather than to the later fields. No etymology is given by Gover et al (1942) but the element 'hyll' is usually used to describe relatively non-descript hills during the later Anglo-Saxon period and is particularly common in minor names (Gelling and Cole 2000, 192). It probably referred to a low hill, perhaps one more prominent from the river and now obscured by development; survey data suggests that the house is situated on slightly higher ground and the sweep of the natural fall to the flood plain (described in 'Topography' above) would further emphasise it.

The area of Marble Hill lay within the East Field of Twickenham, which remained largely open until at least 1635 (see Appendix 2). The 1846 Warren map is the first that shows the boundaries in the north of East Meadow accurately enough to make it clear that they have the curving form typical of enclosure from medieval open field strips. By this date the lower land to the south was enclosed pasture, probably meadow given its situation. Three fields were shown here and these appear to equate to the later Dole Mead, Park Close and possibly River Close (Figure 10). The land to the east and west was also enclosed and though the exact boundaries are uncertain they seem to have been close to the maximum east/west extent of the current park. Several gullies on the floodplain south of the house were recorded during the AP/lidar mapping and earthwork survey ([90], [91], [106], [109], [113]) and possibly a ridge ([226]) that may have been subdivisions of these meadows, though [91] probably marks the line of the original eastern boundary of the Pleasure Grounds and [90] would appear to be on the line of a 19th century division (below).

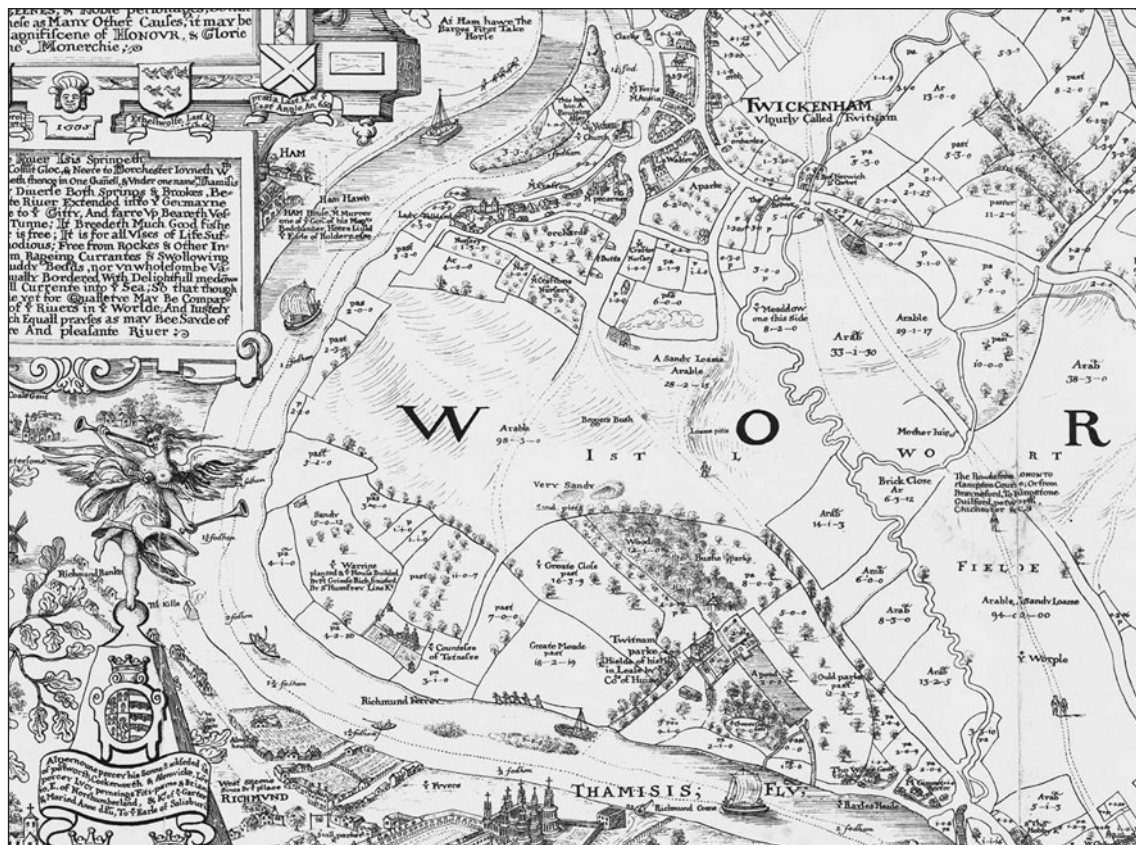


Figure 6 - Detail from the Glover Map of 1635 showing the Marble Hill area (© British Library Board (Maps 189.a.11), with permission), Marble Hill House would be built just above the large 'W' 90 years later. It shows this area as largely open arable (shown as 'Tstleworth Field', but elsewhere this is recorded as Twickenham's east field) with pasture along the river (the three enclosures appear to be Dole Mead, Park Close, and River Close)

The 1635 Glover map (Figure 6 and Appendix 2) shows a road from Twickenham to Richmond that ran on roughly the same line as that of Richmond Road along the north side of the park, including the dog-leg as it turns away to the north-east. This may have run on a line somewhat to the south of the later road however, or simply have been much broader when unconfined by surrounding enclosures [154]. To the south of this, a track, known as the 'twelve foot' track [or way] because of its width (Draper and Eden 1970, 41), ran on a line set back from the Thames to the immediate north of the meadows shown on the 1635 map. Although, it does not appear on any maps it was well documented in the 1720s (below). It seems highly likely that this was of some age as a route along the River Thames on both banks would have been required locally. Its line probably took it on slightly higher and firmer ground than if it had followed the river's edge but it is possible that the way was forced from the river by the enclosure of the meadows. The track was removed (presumably in the 1720s) in order to allow for the creation of the private Pleasure Ground, to be replaced with a route along the river. Alexander Pope (the poet and friend of Henrietta Howard) was instrumental in this, obtaining agreement from the tenants, although to build the new track Lady Howard had to acquire the property on either side of Marble Hill. However, in 1738 and 1739 Mr Plomer - one of the

tenants - complained that the new track had still not been laid out; it was presumably completed around 1742 when Henrietta finally acquired the lease for the necessary land (Draper 1970, 41-42). Some of the boundaries of the twelve foot track may have been retained after the track was removed as West Meadow is shown to be subdivided on the anonymous 1752 plan (Appendix 2) and East Meadow had two divisions in approximately the correct locations (see Appendix 2). The 1786/7 map also showed the division in West Meadow but those in East Meadow had gone.

The fragmented cropmarks of the parallel ditches that once defined this track have been identified during the AP/lidar mapping crossing the southern half of Marble Hill Park on a WSW-ENE orientation (Figure 7). The 12 foot width of the track is a close match with the 4m width of the recorded cropmark. The track was also seen as a high amplitude reflector in the GPR survey crossing the west meadow and Pleasure Grounds and continuing as parallel low amplitude reflectors crossing most of East Meadow but ending just before the Little Marble Hill area [gpr30]. It was also recorded during the earthwork survey as two parallel scarps in West Meadow [100] defining a level area and marking the transition from higher ground to the north to lower ground to the south, as a slight gully and scarps on the lower lawn of the Pleasure Grounds [87] and possibly [88], perhaps [85] and [80] on the rising ground,



Figure 7 - The cropmarks of parallel lines crossing East Meadow and the Pleasure Grounds indicate the remains of ditches that defined a post medieval track, they can be clearly seen on this false colour infrared photograph - a type of photograph taken to enhance the appearance of cropmarks (APGB TQ1773 27-JUN-2010)

and continuing into East Meadow [218] and [219]. A note of caution: new field boundaries were introduced in this area in the 19th century on very similar lines to the twelve foot track so it is possible that some of these features relate to these newer boundaries (below). If so then it may be that features on a slightly different line mark the earlier track such as scarps [84] and [83].

A byway, known as Worple Way, ran from Richmond Road to the Twelve-foot Way, on much the same line as the current road from East Lodge to the car park and the path/track east of Marble Hill House. It is mentioned in the Twickenham Manor Court Book (Book K, 3 October 1739, fol. 213 'Mr William Plomer on the Surrender of Mrs Jane Vernon', Greater London Record Office Acc.1379) and on subsequent occasions (Dr David Jacques, pers comm), as well as in a deed entitled 'Release of Freehold and Covenant to Surrender Copyhold estates at Twickenham subject to a Mortgage thereof for securing £3357-5-6 and Interest, Attested Copy, The Revd Augustus Edwd Hobart & others to Timothy Brent Esqr, Dated 25th May 1824' (Historic England Archive). Worple appears to be a generic term 'for access ways between units in common fields', probably has Old English origins and survives in a few Middle English field names (Gelling & Cole 2000, 96) but is of relatively little significance as it is very common in the Thames Valley. The modern road to the car park and the tarmac track continuing this line has obscured the earlier way but they appeared to run on the surface of a broader and straighter, flat-topped ridge (see [175]/[176]). It is possible that this ridge represents Worple Way but given the extent of later development it is probably more recent. Faint scarps to east and west ([181]/[182]) might be related to the boundaries of the adjacent field and could therefore be of the same age, possibly immediately post enclosure or relating to the later development of the park.

A large sub-rectangular depression was clearly visible in East Meadow that was recorded from lidar data (Figure 8 and Figure 9) and seen as an earthwork [196] but was not noted by the geophysical surveys. It measured about 150m by 85m and the base was level enough for a football pitch to be laid out within. The depression was clearly an artificial feature and coring (see results below) demonstrated that it is highly likely that it was created by the removal of gravel, and the surrounding geology suggests that this may well have included Brickearth. It seems clear therefore that this was a gravel pit but it is undated. The pit is crossed by the remains of two tracks (Figure 9), one probably present by 1786 and the other more certainly by 1819 (see below for detail on the track dating), so it must pre-date these. However, an extractive concern such as this seems unlikely to have been open once the house was complete in 1729 and the area is shown as fruit and kitchen garden in 1711 so it seems most likely that the pit was in use sometime between about 1650 and 1700, though an earlier date cannot be ruled out – Glover shows a 'sand pitt' less than a kilometre to the north on his 1635 map (Appendix 2).

The 18th century

By the early 18th century, the remaining area of open field had been enclosed. The 1711 'scatch' map by the Earl of Mar (see below and Appendix 2) shows the fields and their use at this time, though the detail has been rather obscured by scratched out erasures (see Appendix 2). Most land seems to have remained in use much as it

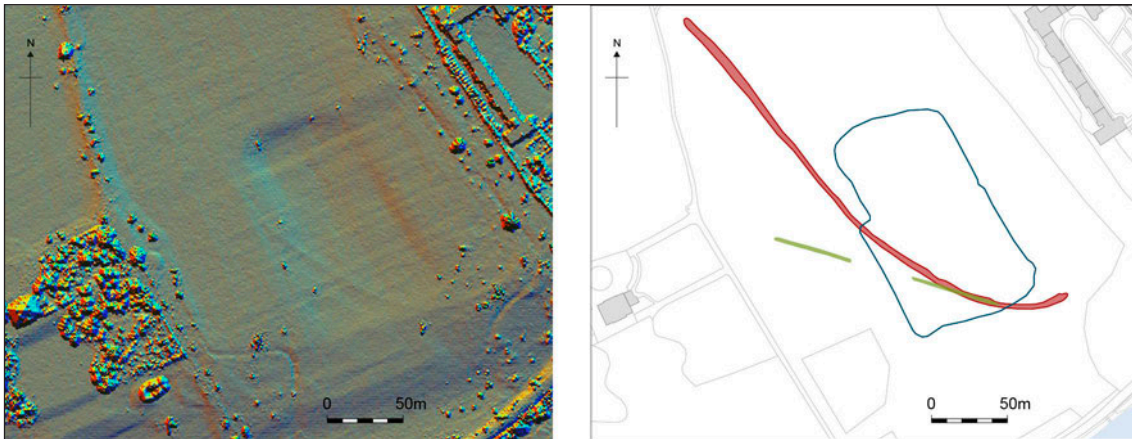


Figure 8 (left) - At the centre of this lidar image is the large but shallow depression in East Meadow. Marble Hill house is to the extreme left (LIDAR TQ 1773 Environment Agency LAST RETURN 2007 © Historic England)

Figure 9 (right) – Transcription of features in East Meadow showing the outline of the pit (blue) and the cropmark (green) and earthwork tracks (red) (© Historic England, Modern Ordnance Survey background mapping: © Crown Copyright and database right 2017. All rights reserved. Ordnance Survey Licence number 100024900.)

had in 1635 with arable ('corn') on the higher ground to the north and the meadows to the south, but with fruit and kitchen gardens to the east. There was also a small group of buildings in what would become the south-east corner of the park. These are named as 'Glasshouse' by LUC (2006, Figure 4.1) but the label on the 1711 plan would appear to be 'the hatters', the 'glasshouse' seems to have been a building to the east (see Figure 10). This was mentioned as 'Domn. Vitrial.' in 1718 (Twickenham Manor Court Book) and it has been suggested that waste from glass making here provided a decorative 'mineral' used by Pope and others in their grottoes, though there were other glasshouses nearer to London (Dr David Jacques, pers comm).

In the early 18th century, the land that went on to become Marble Hill comprised several fields (LUC 2006, Figure 4.1). To the south, immediately adjacent to the River Thames, were from west to east: Dole Mead (which was divided into at least four and included charity and crown land), Park Close and River Close. The twelve foot track ran from WSW to ENE immediately north of these fields. To the north of this, and north of Dolemead were: Marble Hole Shot, to the south of Montpelier Row (now Road), and Marble Hill Shot, later the site of Marble Hill House. It is not known if 'hole' is a corruption of 'hill' or referred to the low ground here in contrast to the nearby 'hill', it could also have been 'hold' as given on the 1752 map though again this could be a corruption. To the north of this was Short Farthingworth Close to the west (the western part of which had been occupied by Montpelier Row) and Plumbush Close to the east. Worple Way ran along the east side of Plumbush Close as far as the twelve foot way. To the east of Worple Way, in the car park/adventure playground area, lay Long Sandborough Shot (a suggestive name given the likely presence of a gravel pit to the south, perhaps indicating another material it supplied), and Park Close Furlong to its south. The 1819 tithe map and 1846 Warren map shown the boundaries of Long Sandborough Shot to have had the curvilinear form typical of enclosure of medieval arable strips.



Figure 10 – The Marble Hill area in the early 18th century (based upon Jacques 1995 and various other sources)

The early 1750s

This period is central to the current development plans for Marble Hill as it is the draft and final maps of the park (see Figure 11 and Appendix 2) that are to be used as the basis for the reconstruction of the Pleasure Grounds around the house. The maps are undated but are thought to have been produced for the legal case that began in 1751 mentioned above. They include a table detailing the ‘Contents of the Plan in Acres Rods and Perches’ and an ‘Explanation’ (key). Within this section, names in quotes are taken directly from these.

The Pleasure Grounds were a rectangular area around the house extending SSE to the river (described in detail below). Most of the area around this was still subdivided into fields, the names and areas of which were given in the ‘Explanation’. Great Lawn (see Figure 3) comprised ‘Mr Ashe’s’ land plus ‘Great and Little Plumbush’, and West Meadow was divided into ‘Marble Hold’ (the northern 2/3) and ‘Dole Mead’. East Meadow was divided into four fields but most were not named; perhaps it was not a part of the estate at this time, though its shading indicates otherwise. The southern third was named ‘Charity Lands’, with a ‘Narrow Slip of Ground’ to its north. North of East Meadow, in the area of the car park, playgrounds and works area, was the ‘Cow house’, ‘Coach house and stables’ and ‘Stable yard’ adjacent to the drive from the northern gate, with the ‘Poultry yard’ and ‘Kitchen garden’ to the east of this.

The plans show the boundary of the estate to the north-west, south-west and south-east to be virtually the same as today. Only the north-east boundary looks

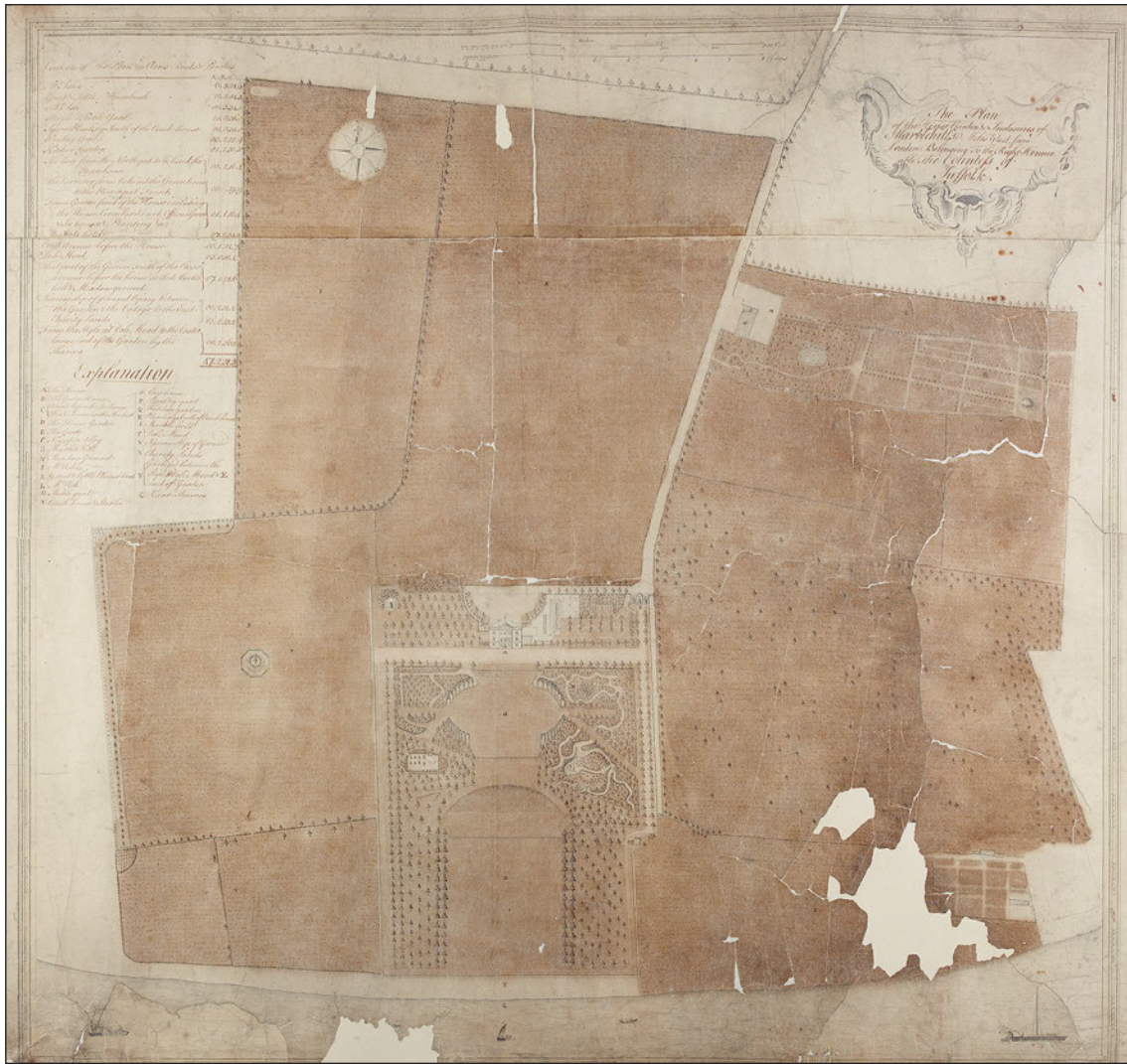


Figure 11 - The plan of the estate in about 1752 (reproduced with the permission of the Norfolk Record Office NRO MC184/10/1, rights reserved. See also Appendix 2)

to be significantly different with a block excluded from the eastern corner, held by Mr Fridenberg the subject of the legal case mentioned above, as a 1752 deed demonstrates (Appendix 2), and an irregular boundary to the north of this probably including areas now part of Meadowside. To the south of the Pleasure Grounds and West Meadow was an un-shaded strip of ground. It seems highly likely that this was the way built to replace the twelve foot track, its continuation to the east still incomplete, presumably due to the on-going dispute with Mr Fridenberg.

The Pleasure Grounds

The house approach and adjacent quarters:

The house (outside the scope of this project) was in the north centre of the Pleasure Ground (Figure 12). As set out above, its construction was begun in June 1724 and was complete in about 1729. It had curving wing walls to east and west framing a semi-circular courtyard to the north that looked across Great Lawn though was approached indirectly from the east; along 'the lane from the North gate to behind

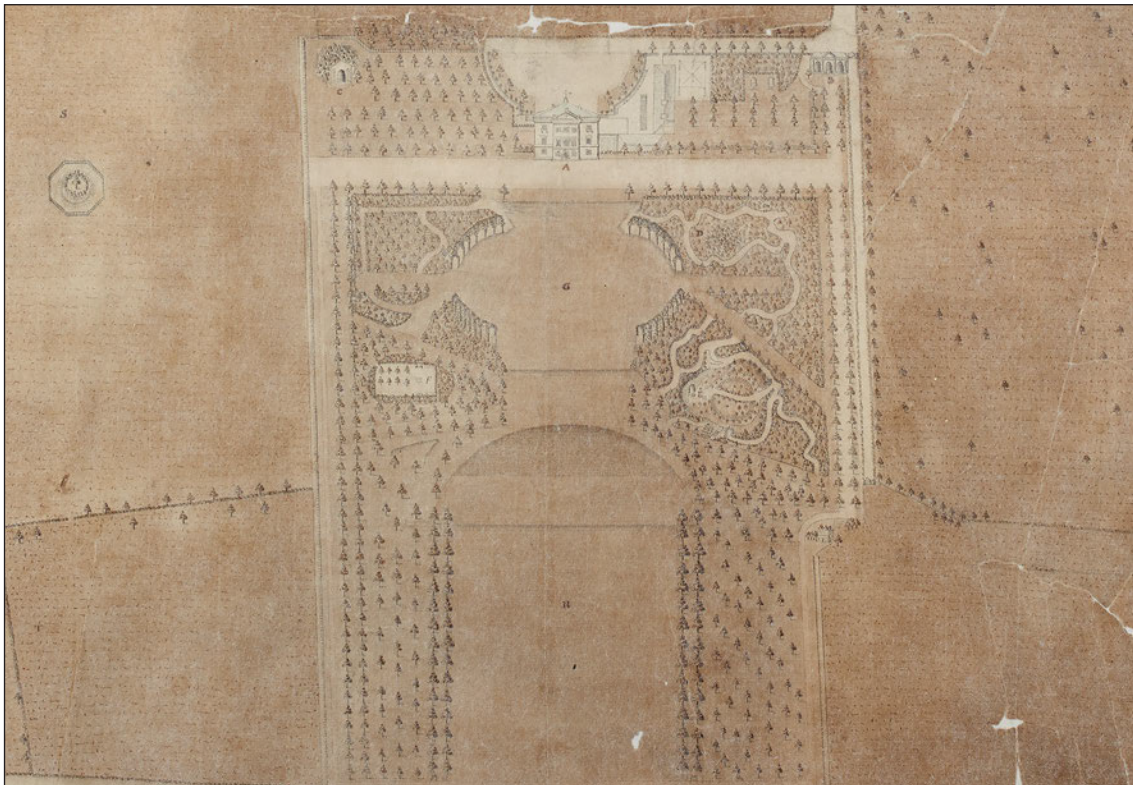


Figure 12 - Detail from the 1752 plan showing the Pleasure Grounds (reproduced with the permission of the Norfolk Record Office NRO MC184/10/1, rights reserved. See also Appendix 2)

the Greenhouse' which ran from Richmond Road, past the stables and other service yards and buildings, as far as the north-east corner of the grounds where the lane turned at right angles to the west to form 'the turning from behind the Greenhouse to the Principal Front'. It has been said that this rather awkward approach (and the semi-circular court in front of that house when a circular court was more usual) was due to the complex acquisition of the land. When the house was commenced 'Plumbush Close' to the north did not belong to the estate but as this was acquired in September 1724, early in the development of the site, this cannot be the full story.

The modern track north of the Green House site, from the car park to the turning to the house, was slightly sinuous but clearly sat on a straighter, wider, flat-topped bank (see [175]/[176]). Although this may have been the earlier Worple Way (above) it seems more likely this was the 18th century lane to the house. Faint scarps to east and west ([181]/[182]) might be related to the boundaries of the adjacent fields, Long Sandborough Shot and Plumbush Close respectively, but again could be older.

To the south of this a track closed off by gates at both ends ran along the east side of the Pleasure Ground but apparently outside them, allowing direct access to the 'Charity lands' to the south. No certain earthwork evidence for this track was seen due to later developments but it is possible that gully [68] was on the line of the earlier boundary between the track and the fields to the east. It seems more likely, that several features noted to be on a slightly different alignment and probably underlying the features already mentioned related to this boundary and track (see [69] and [79]).

The 'Cross avenue before the House' ran the full width of the enclosed Pleasure Ground, immediately to the south of the house. The earthwork evidence indicates that this was wider than today, possibly extending up to 3m further south (see [23], [24] and [27]) and 2m north ([25]), a total width of about 9.0m (or 29.5 feet, perhaps originally 30 feet or 10 yards). It is possible that this avenue was made narrower when the edges were planted with evergreens by General Peel; the tree stump survey and vegetation showed clear traces of holly amongst the existing Portuguese laurel, yew and other evergreens. The Cross Avenue was very probably built to be level (and level with the ground floor of the house) which required its elevation on a raised bank. This was very low to the west ([24] and [25]) but increased steadily in height to the east ([23], [26], [27] and [29]).

To the north of the Cross Avenue and west of the house was the north-west quarter that contained 'The Ice house in the Thickett'. Today the icehouse mound [3] measures 14.20m in diameter and 2.75m high but has suffered erosion so was probably originally higher and narrower. On the 1752 map the icehouse appears to be facing south but this feature is very different to the actual entrance to the icehouse and was probably therefore 'A seat before the Ice house' (Emily Parker pers comm), probably a bench within a neo-classical niche, perhaps built of wood. This would appear to have been placed at the north end of an avenue extending south the full length of the Pleasure Ground, presumably intended to provide a focal point reflecting the Green House' to the east (below). Multiple tree stumps of probable sycamore are located around the ice-house, thought to have been removed in the last decade or so. A broad, flat-topped bank running south from the icehouse ([4]) may have been intended to provide a smooth transition south from this feature across the Cross Avenue and onwards. The rest of the quarter was mainly given over to regular rows of trees planted offset to one another – the 'thicket'. Very few earthworks could be seen in this area, suggesting little activity over the years. The (living) tree identifications in this quarter recorded a predominance of evergreen types: yew, butcher's broom, laurel and holly, variously around the eastern and southern edges. At least one of the living limes (tree 1416) in this quarter is of considerable age.

On the 1752 maps a strip of more densely growing trees along the north side of this quarter projected forward of the line of the north side of the semi-circular court, though a short section of boundary on the more southerly line remained to the west. It seems possible that this block of trees was a later addition, perhaps to screen the icehouse from the approach. The tree stump survey (below) identified a former lime tree here, suggested as possibly from the original planting. Remains of oak (stumps) were also recorded, and this genus' long-lived character could also indicate their early presence here. The former, more southerly boundary may be preserved as gully [8], perhaps continuing to the west as scarp [131]. The more northerly boundary the vegetation defines is preserved today though the north side of the semi-circular court runs more obliquely taking the modern track to its north, a line possibly first shown on the 1846 Warren map and more certainly on the 1st edition 25 inch OS maps of the 1860s.

The north-east quarter seems to have contained service buildings and other features including a possible drying frame, beehives and a block of trees in a grid, perhaps a small orchard. It is known that the service buildings comprised Henrietta's China

Room, a cottage completed by 1739 with an upper floor suitable for displaying her china collection, which was linked to the house by the servant's wing in the 1740s. The China Room was the north/south building to the east of the wing wall and the servants' quarters the east/west building connecting the south of this to the east wall of the main house. No features could be directly related to these buildings but demolition typically creates confused earthworks and a range of mounds, scarps and gullies were recorded in this area, many of which were on approximately the correct orientation. The raised area [12] may have related to the servants' quarters and the hollow [14] to the China Room. The servants' quarters were demolished in 1909 (above), but it is unclear if this included the China Room which may have lost its separate identity and been seen as part of the service wing.

In the ENE corner of this quarter was 'The Green House', which faced south. No definite references to its construction are known but the 1728 receipts for four buildings in the garden (above) may have included it. An earthwork platform [17] was recorded here that would appear to define the west end of The Green House and its curved scarp might reflect a path shown to curve around the building. It probably extended beneath the current modern tarmac track and into the grassed area to the east of this. The former presence of these buildings has implications for understanding the contemporaneous planting here, as planting here must have taken place after their demolition. Currently this is hard to resolve due to the lack of clarity about their former locations. However there is evidence for a former yew hedge against the wing wall as well as box plants which could have screened or enclosed different areas.

A path along an avenue is shown running south from The Green House across the end of the cross avenue to a point some way south of the extant grotto. The path appears to lie within the pleasure ground, in contrast to the continuation of the former Worple Way to the immediate east which seems to have been separated from it by a boundary of some sort. It was probably intended to reflect the icehouse seat and avenue to the west, running parallel and at a similar distance from the central axis of the Pleasure Grounds. This walk appears to have been raised above the natural level in the same way as the Cross Avenue, presumably to achieve the same level where the two met, though it fell steadily to the south. The scarps falling away from it to the south-west were surveyed, and steadily diminish in height from north to south ([16], [52] and perhaps [63]). As with the cross avenue, the scarps did not align closely with the current track and suggest that the line of the early avenue/path ran slightly to the west of the current path, increasingly so further to the south. No scarps falling away to the north-east were seen other than those that would appear to be associated with later developments (below, [72], [71] and possibly [68]). It is along the (lime tree lined) route of Worple Way, outside the current boundary of the eastern quarters, that an Italian lords and ladies plant was found, indicating a possible former extension of woodland along this margin.

On the 1752 maps, the 'lane from the North Gate', the semi-circular court to the north of the house and its approach from the east, 'Cross avenue', and the north-south walks to the east, were all shown un-shaded, in contrast to most other areas and it seems likely that this was intended to indicate they were surfaced, presumably with sand or gravel. There may be a further distinction to be made as the draft map

clearly shows the courtyard, cross avenue and walk from the Green House in red (the final plan also suggests similar shading but it is less clear), but the lane and side access track as uncoloured, though it is possible that this was to make some other distinction such as public from private.

South of the house:

The lawn to the south of the house was labelled 'Marble Hill' rather than the house so perhaps some sense of the former land remained rather than the name relating to the new house at this date. Shading to the north suggests a broad straight slope up to the Cross Avenue and similar shading to the south suggests another shorter, straight slope down. Both were recorded during the earthwork survey as [23] and [33] though the latter was actually at a slight angle to Cross Walk, rather than parallel as shown; given the topography this was probably original. The lawn itself was featureless and unsurprisingly no features from this date were recorded though a probable brick culvert recorded during the geophysical surveys ([r12] and [gpr22]) is likely to be contemporary with the house.

On the 1752 maps, the east and west extent of the south lawn was delineated by four quarter-circular features that appear to be pergolas with surfaced paths running through them. Four spurs/banks were recorded in these locations ([32.a] to [32.d]) and it seems likely that the pergolas, or at least the paths beneath them, ran on these, slightly elevated relative to the lawn. It is possible that the banks ran behind the pergolas framing them, but the accuracy of the plan is sufficient to be fairly sure that this was not the case. It is also possible that the banks are later features, perhaps raised beds that replaced the pergolas in the 19th century, though no record of such features is known. Behind the pergolas were the south-west and south-east quarters featuring several sinuous pathways. That to the east was the larger and extended further south than the extant quarter to encompass the area of the grotto, that to the east was considerably smaller with an oblique southern edge much as seen today, no doubt due to the topography. The south-east quarter currently consists of an open area in the middle, surrounded with evergreens to the north and east, hawthorns to the west, and with some tree stumps of horse chestnut and possible false acacia in the south. Perhaps the most distinctive tree is the large, living, multiple-stemmed holm oak in the south-west corner that is so substantial it is not unreasonable to suggest that it could date from the original garden planting though it could also have been planted to frame the later Italianate garden. The south-west has similar elements to that of the south-east, notably extant evergreens and (possible) horse chestnut. This area is characterised by a central zone of winter aconites and periwinkle flowers which, though now hidden within the centre of the planting, were clearly once meant to be seen. A large lime tree (263) immediately to the north of this area is likely to have been planted in 18th century.

Leading away from the lawn, between each pair of pergolas and at right angles to the main NNW-SSE axis the 1752 maps show what appear to be short, broad, grassed walks extending symmetrically to either side of the central lawn. That to the west was visible as a low flat topped spur [36] that ended at a gully with a mound beyond [37]. It seems likely that the gully was a later cut and that the mound was originally

a part of the spur giving a more prominent terminus to the walk than is immediately obvious from the plan, perhaps providing a view as the ground fell away markedly to the south and west. No conclusive evidence for the walk to the east was seen (other than the gap between the two banks associated with the pergolas) probably due to later disturbance [42]. It is possible that scarp [44] marked its southern edge and perhaps its eastern end.

Running off at about 45 degrees to the south of these similar grassed walks were shown on the 1752 maps. Although symmetrical at their northern ends, the eastern one ran straight for some distance whereas the western one was much shorter and somewhat broader, to accommodate the topography. Little trace of the eastern diagonal walk could be seen. A flat-topped ridge [48] running obliquely through this area was probably too narrow and on the wrong alignment, so likely a later path, but underlying scarps such as [50] or parts of [51] could be related.

According to the 1752 maps, the area of the south-east quarter north of the walk was known as 'The Flower Garden' and a slightly more densely shaded area in the centre may indicate a central flower bed amidst shrub planting. This had sinuous paths around it that were un-shaded/red on the maps so probably surfaced. It is just possible that some of the scarps recorded, or some of the gaps between features, related to these paths but the whole area was very disturbed (see [42]) and covered with cow parsley and comfrey so this is difficult to demonstrate. From the maps, the rest of this area appears to have been planted with trees or shrubs.

The area of the south-western quarter to the north of the main grassed walk was unnamed and laid out simply with straight, probably gravel paths framing the area and a single sinuous path through the centre (possibly to view flowers, such as the winter aconites and periwinkle, as described above). It is possible that scarp [24] (or at least the lower part below the break) and scarp [41] relate to the straight framing paths. No evidence for the sinuous path was seen. A small building was shown behind the south end of the northern pergola and was depicted on the draft map in plan as a rectangular building approached by a short gravel path from the sinuous path. It has been suggested that this was the garden privy mentioned in near contemporary documents (Emily Parker, pers comm). No obvious site for this building was recorded during the earthwork survey; it may have been obscured by spur [32.a] suggested above as related to the pergola to the immediate east, but also noted as perhaps not accurately correlated and potentially later.

The area of the western diagonal walk was obscured by fallen tree trunks but appeared largely featureless, perhaps suggesting a ramp down from the higher cross walk. Outside the current quarter, scarp [54.a] curved away south-west and then west a few metres beyond the current fence. This appeared to align with the western side of the broad diagonal walk and then the southern side of this quarter, perhaps defining its former extent. Between the cross walk and the diagonal walk a smaller walk curved around with a semi-circular area of trees between the two. No evidence for these features was recorded but the boundary of this quarter seems to have run to the south of the current fence (above) so it may have been eroded by traffic along it, where a scarp related to the fence was visible [38].

South of these features a broad walk ran obliquely WNW-ESE approximately along the natural slope, marking the southern extent of this quarter. This apparently ran between scarps [54.a] and [54.b]. To the south of this was the rectangular 'Ninepin alley' which was enclosed within an oval area of planting. It may have been located here to reflect the grotto to the east and the surrounding planting may have enhanced this similarity. Surprisingly, no evidence for a levelled area was seen during the earthwork survey other than scarp [54.b] which may have defined its north-west side. However a ninepin (skittles) alley would probably require a relatively small levelled area, perhaps a strip only a few metres wide, so could have been levelled and lost relatively easily. The geophysical survey revealed some high reflectance anomalies here [gpr25] but these do not obviously relate to the alley.

'The Grotto' is shown to the south of the oblique eastern walk but within the quarter, apparently on the site of the existing, largely reconstructed grotto, in a currently open area. It is shown somewhat stylistically with an east facing entrance and curved flanking walls, approached from the east by a slightly curving, apparently edged path through a circular feature, but to the west of the actual grotto location (Figure 13). It is likely that the grotto was rather awkward to depict and its apparent displacement is probably the result of trying to represent it clearly. The grotto itself was not surveyed, apart from mound [58] over the chamber that must relate to the 1980s reconstruction.

To the immediate south of the grotto the 1752 maps are a little unclear but appear to show an arched niche or tunnel with a path running through it, a seat and some other minor features, perhaps including some steps. This may be the site of the second grotto first certainly referenced in 1760 but possibly being referred to in 1739 when Henrietta described herself as 'over head and ears in shells' (above). The



Figure 13 –Detail of the 1752 map showing the grotto area (reproduced with the permission of the Norfolk Record Office NRO MC184/10/1, rights reserved. See also Appendix 2)

1760 reference notes that the second grotto had 'a fine view of Richmond Hill' which suggests an above ground feature rather than the subterranean cavern of the current grotto; perhaps the arch depicted. It is likely that these features lay in the area of the large horse chestnut tree to the south of the grotto where several scarps were recorded [60] suggesting a slightly raised platform (or perhaps two) beneath the tree. The lack of geophysical features noted here might be the result of the above ground construction and perhaps a relatively short lifespan. Although the geophysical survey suggested several other locations for this second grotto, all are in featureless areas on the 1752 plans and reference sub-surface anomalies. In addition [r14]/[gpr23] would lie below the slope down from the upper lawn which seems unlikely, and [gpr33] is outside the Pleasure Grounds to the west with no view of Richmond Hill. Anomaly [r16]/[gpr24] is a possibility, and approximately symmetrical with the existing grotto, but this area only shows some trees in 1752.

The ground to the south of the quarters was more open without any significant designed elements. The central area was known as 'Meadow Ground' and continued the sweep of open lawn running south from the house to the river. Shading indicates a broad curved scarp down from the higher ground to the north and a slight scarp or gully to the south of this. The curving northern scarp was recorded during the AP/lidar mapping and earthwork survey [55] and some linear anomalies were picked up by the geophysical surveys (unlabelled, parallel and north of [gpr27]) suggesting reinforcement, where a steepening in the main scarp was also noted during the earthwork survey, though this may have been later.

To either side of Meadow Ground were avenues of trees and outside these were areas of more open, semi-regular tree planting; that to the west was narrower than that to the east. Numerous tree hollows were recorded in the western area, as well as a few to the east, the difference perhaps being because the western area still retained a lot of trees but the eastern was more open and therefore more likely to have been levelled. Along the west side of the Pleasure Grounds were an avenue that ran SSE from the icehouse. This seemed to mirror that to the east that ran SSE from the Green House though this western avenue was shaded so perhaps not surfaced and extended further south. A broad flat-topped ridge [4] ran south from the icehouse, the eastern side of which seemed to match the alignment of the east side of this avenue and possibly to align with a scarp to the south, [54.c]. Outside this avenue a narrow un-shaded strip, presumably a surfaced path, ran along the outer edge of the grounds SSE from the west end of the cross avenue. No evidence for this was seen during the earthwork survey and it must have been a slight feature. These areas were not visible to AP/lidar or covered by the geophysical surveys.

The boundary of the Pleasure Grounds is shown as a broad feature shaded to suggest a ditch (possibly a ha-ha) or bank. This ran from north-west of the icehouse WSW for a few metres (it was clearly shown as a fence along the rest of this side) before turning a right-angle to run SSE the full length of the pleasure ground, at the south end it turned another right-angle to run back ENE and then turned again to run NNW for a way, on an alignment slightly to the west of the track to the north. The part of the boundary around the icehouse has been obscured by later development, particularly the tarmac paths and the area to the south of the current Chinese-style pavilion also appears to have been built up over any ditch/bank more recently ([98]

and [97]). To the south of this though, a ditch with a counterscarp defining an outer (south-west) bank [96] could be traced as far as the southern boundary of the park. The ditch was the stronger feature so perhaps this is what was shown on the 1752 plan. No similar ditch could be traced running along the south side of the pleasure ground. Since no raised terrace is shown here and nor was there a continuous route along the Thames bank (the narrow strip of 'Ground between the style & Dole Mead & end of Garden' did not continue to the east), the embankment had probably not been constructed until the full route became available after the plan was drawn up, and when it was it removed all trace of the former boundary. The eastern arm of this feature would appear to align with ditch [91]. This was rather broader and shallower than the ditch of [96] and AP/lidar mapping identified a bank on the inside (south-west) of this feature rather than outside it so the features were not exactly the same. Given that it has been suggested that the shape of the Pleasure Grounds were determined by property rights both boundaries may have adapted existing features, formalising field ditches and hedge banks for example, so these differences may not be significant.

Between the northern end of the eastern arm of the park boundary and the south end of the avenue from the Green House the Pleasure Grounds boundary dog-legged. A surfaced path curved south-west and then ran SSE parallel with the eastern boundary of the Pleasure Grounds clearly reflecting that which ran along the inside of the boundary to the west. No evidence for this was seen by any of the surveys (apart perhaps from the low spread bank picked up by lidar mentioned above), all of which covered this area, so this path must have been slight. Between the curve of the path and the angle of the boundary was what appears to have been a seat, only separated from the fields to the east by a light fence and which would have given views across the river. This area was marked by a bulge of material [62], perhaps thrown up against the natural slope to create a more level area for the seat.

The rest of the grounds

The rest of Marble Hill was shown on the 1752 maps (Figure 11) as mainly open ground that may have remained in agricultural use, probably pasture as it was not obviously depicted as being under crop and there are mentions of both sheep and cattle in the historical sources, though perhaps there was also meadow as the gothic folly of the 'Priory of St Hubert' was actually a barn (below).

On the 1752 maps West Meadow comprised three main enclosures, two small fields to the south (both 'Dole Mead') and a much larger field to the north ('Marble Hold'). The boundary between Dole Mead and Marble Hold was picked up by the AP/lidar mapping, as a high amplitude reflector during the geophysical survey [gpr30] and as two parallel scarps [100]. In no case was the alignment exact, most likely due to 18th century mapping inaccuracy. It is also possible that the division between the two smaller fields was picked up during the earthwork survey (as [108]/[109] or [110]) but this was uncertain, again due to the mapping. A narrow strip of land around the north and west edges of West Meadow was fenced off with a single line of regularly placed trees within. The fence may have been substantial as scarps on this line were identified during the earth work survey ([120]/[125]) but these could easily be later.

The fencing may have simply been to protect newly planted trees (probably intended to screen the park) from livestock within the main field but could have been a walk; at its south-west end was a quarter-circular enclosure, possibly intended as a focus. Within the approximate centre of the northern field was a feature that appeared to be a central tree within a small circular hedge either on a low mound or surrounded by a circular ditch within an octagonal fence. Again this feature was seen during the AP/lidar mapping (a tree survived here in the 1940s APs), as a low amplitude reflector during the geophysical survey [gpr31] and as faint, irregular earthworks that had clearly been levelled [124].

The Great Lawn to the north of the house was almost entirely featureless and was divided into two. The smaller western part was 'Mr Ashe's' and the larger area was 'Great & Little Plumbush' (the boundary between the two presumably having been lost within memory). A very slight scarp on the line of the boundary between the two fields was surveyed [161] that might have marked it and a geophysical anomaly on a similar line [gpr6] might have been incorrectly assigned a recent origin.

To the east of 'The lane from the North Gate...', the northernmost part of East Meadow comprised a narrow strip of land labelled 'Mr Ash' in the 'Explanation'. This probably lay outside the current park with the southern boundary on the line of the existing park boundary. This still shows a marked curve indicative of enclosure from medieval arable. To the south of this lay a block of service buildings, yards and enclosures comprising the 'Stableyard', 'Cowhouse', 'Coachhouse & stables' and 'Planting south of the coachhouse', with the 'Poultry yard' and 'Kitchen garden' to the east. These lay beneath the current car park, adventure playground and service yard but may have extended slightly to the south where some surveyed features such as [gpr7] and [189] may have picked up their southern boundary.

South of this were two featureless enclosures, the southern boundary of which had a marked dog-leg. This may have been picked up during the geophysical surveys as high amplitude reflector [gpr40]. South of this was a large enclosure with a scattering of trees shown across it not seen elsewhere and suggestive of a different contemporary or recent land-use. Along the eastern margin of this field were more regularly planted trees, perhaps intended to screen the house from its neighbours. Neither of these areas was identified on the 1752 map but the significance of this is uncertain. To the south were a 'Narrow strip of ground' and the 'Charity lands'. The boundaries of these did not appear to align with any identified features even allowing for inaccuracies in the mapping.

To the east of the 'Charity lands' were several buildings with enclosures containing regular grids of paths, reminiscent of formal gardens of an earlier period or plots within a productive garden. The draft map also shows some further buildings to the east though as these were not shown on the final version they were probably in different ownership. Unfortunately, both the draft and the final 1752 maps were damaged here. Few features could be identified to allow accurate geo-referencing of the maps and this area was much disturbed by the construction of the 19th century Little Marble Hill and its gardens so it is hard to be certain of the survival of any of these features.

An earlier layout?

Construction of the house began in 1724 and it is clear that the gardens were being planned and laid out at much the same time ('Historical summary'). However, as discussed above the first reliable and detailed evidence for the layout of the grounds is from the draft and map of about 1752, about 25 years after the first gardens were created. There is an earlier plan (Figure 14) thought to be from about 1724 and now attributed to Pope (Emily Parker, pers comm), which had a stronger east-west emphasis and was more asymmetric than that depicted in 1752. It is rarely mentioned in histories of the site and it appears that it is generally assumed not to have been implemented. It is worth noting here that although Henrietta couldn't leave court because of being a woman of the bedchamber and the King's mistress, there is nothing to suggest that she was not making the decisions about the designs for the house and gardens and the 1724 plan may be more to do with what Pope thought than Henrietta wanted or could afford.

Although certain elements of the design appear to have made it into the 1752 garden it is uncertain if these were design elements taken from the earlier plan, but that only ever existed on paper; Pope and Bridgeman were certainly in communication in the autumn of 1724. The main common elements include:

- The approach from the east to an approximately semi-circular area in front of the house;
- The east-west Cross Avenue south of the house;
- The north-south walk at the eastern end of Cross Avenue;
- The central lawn to the south of the house;
- The symmetrical curving features to either side of this lawn (although on the 1724 map they are shown as crescent shaped parterre beds with paths outside this and walls beyond, there appear to be pergolas running around outside this; what look like arches at the entrances off the lawn to north and south of the parterres are shown);
- The general arrangement of quarters to either side of the house and to either side of the lawn;The presence of sinuous paths within the main eastern quarter
- The extension south of this same quarter relative to that to the west;
- All of the above appear to be of a very similar scale to the 1752 map.

It seems possible that these major elements could have been communicated in writing or during discussions between Henrietta, Pope and Bridgeman. It is perhaps the lesser elements and details that are more suggestive that this early plan had some basis in reality. For example:

- The asymmetry between the quarters either side of the house, with the western boundary being further north than the eastern, appears to be shown on the 1724 plan;

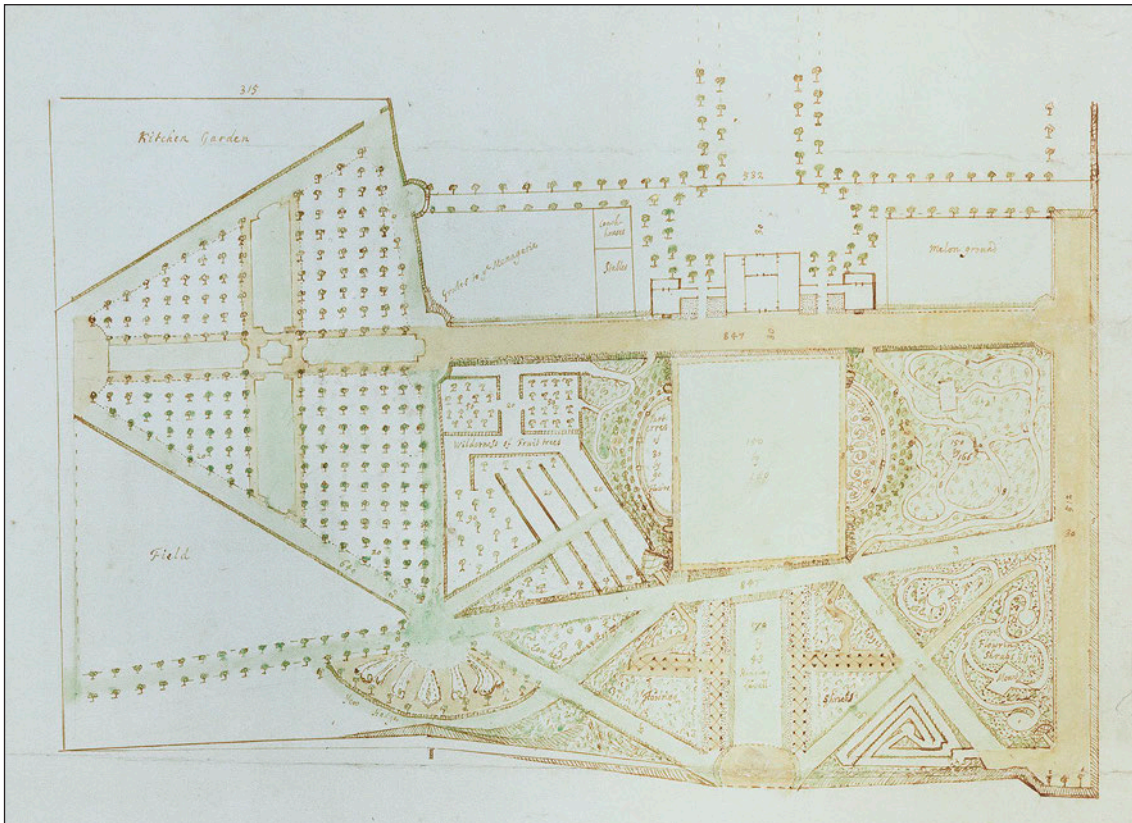


Figure 14 – Detail from the undated design for the gardens at Marble Hill attributed to Pope thought to date to about 1724 (reproduced with the kind permission of the Norfolk Record Office NRO MC184/10/3 rights reserved)

- The width given for the cross walk (30 feet) on the 1724 plan is exactly that suggested as the probable maximum width based on the earthwork evidence above (9.0m or 29.5 feet);
- At the eastern end of the cross walk the semi-circular scallop to the north may be visible in the earthworks as the lower part of [21] and the deviation of [52] to the west at its north end may be a degraded version of that to the south;
- Some of the sinuous paths within the area to the east of the lawn shown on the 1724 plan seem to match paths shown on the 1752 plans;
- The focal point and westward path return at the south end of the east walk would also appear to be reflected on the 1724 plan;
- A small clearing is shown on the 1724 map where the building just west of the western pergolas appears on the 1752 maps;
- Some of the rather awkward and unexplained scarps to the west of the main slope down from the terrace [57] may relate to former walks here that appear on the 1724 plan. The 1752 map also shows some 'V' shaped shading just to the south of the ninepin alley - elsewhere used to indicate scarps, which may be picking up the edges of former walks in this area.

In addition, the September 1724 accounts mention a mount and yew hedge; neither is definitely depicted on the 1752 maps but both are specifically labelled on the 1724 plan, the former in the south of the south-east quarter, the latter to the south-west of the Ninepin Alley. Admittedly, this is rather circumstantial and the bowling green mentioned in these accounts does not appear on the 1724 plan.

Perhaps the most significant discrepancy between the two plans is the westward extension of the garden; even here there are hints that the 1724 plan may have been at least partially implemented. It is clear that the walk to the south of the house was intended to extend some way to the west of the 1752 limit and it appears to have ended in a semi-circular area, the focus of several walks in this area, which could be expected to house some sort of 'eye-catcher'. The 1752 maps show a feature in this area (above) that may also be shown on the 1746 Rocque map (a black dot in approximately the correct position appears similar to other depictions of individual trees). Though the 1752 plan shows this a little to the south of the line from the cross avenue, this may be a mapping error; the AP/lidar mapping, earthwork survey [124] and geophysics results [gpr31] all show the feature to have been directly in line with the avenue. This could therefore be a remnant of this layout; it is difficult to see why it would have been sited here otherwise - a position on the edge of the park where the ground rises would make the most of the available land and be more prominent.

There is therefore some evidence that Pope's design may have been begun in the summer of 1724. When the land to the south was acquired, that part of Dolemead purchased in September 1724, allowing development of the whole sweep of ground to the Thames, the plans may have been reconsidered. Perhaps it was this that prompted Pope and Bridgeman to visit at this time rather than it being the start of their planning.

The later 18th century

The only maps from this period are the rather small scale Rocque maps of 1754 and 1762 that tell us very little about the estate apart from the completion of the way along the river.

The gothic folly of the 'Priory of St Hubert' was built in 1758 and functioned as a barn for the Marble Hill farm. It was demolished sometime after Lady Suffolk's death in 1767 so may well have only stood for ten years. No convincing evidence for this structure was seen and as an appurtenance to the farm it probably lay in the area of the other service buildings, perhaps under the current car park.

The 1786/7 Sauthier map (Figure 15), although small scale, is rather clearer than the earlier Rocque maps and shows several developments, notably the Sweet Walk and the eastern extension of the Pleasure Ground.

The Pleasure Ground

The depiction of the house, adjacent quarters and approach was rather broad brush on the Sauthier map, perhaps unsurprising at this scale. In the north-west quarter



Figure 15 - Detail from 'A map of the Manor of Isleworth-Sion in the County of Middlesex belonging to his Grace the Duke of Northumberland' by C.J. Sauthier 1786-7 (© Collection of the Duke of Northumberland, reproduced with permission)

the icehouse is clear and the formal arrangement of trees in the rest of this quarter appears to remain. In the north-east quarter the service buildings and Green House also remain but the rest of the area is blank, though this is more likely due to the scale than any clearance of this area.

The cross avenue south of the house is not shown; a gap suggests it was present but it may have been neglected and grassed over. The quarters south of the cross avenue appear rather different with dense trees adjacent to the upper lawn but the areas behind these open. This seems unlikely but possible as the small scale 1819 Greenwood map (Figure 16) appears to show parallel NNW to SSE walks to either side of the house set closer together than the former walks/avenues that could be an evolution of the layout depicted in the 1780s. They also appear rather more symmetrical than it is likely they ever were. To the south-east the grotto was not shown and no other possible grotto is depicted, so it is tempting to suggest that they may have been filled in and/or demolished, but mention of a grotto in 1816 suggests at least one survived (see Appendix 1).

The western boundary of the Pleasure Grounds apparently remained much as shown in 1752 with the avenue running south from the icehouse intact and the boundary beyond on the previous line. A small, rectangular building not seen before is shown between the avenue and the outer boundary towards its south end. What was thought to be the site of this building was identified during the earthwork survey about 25m north of the southern park boundary [99]. This was a slightly irregular mound up to 13m across immediately outside the ditch thought to be the boundary

of the pleasure ground, apparently overlying its outer bank. Stratigraphically this makes sense but it would appear to be in the wrong place relative to the boundary shown in 1786/7, though not the avenue. This is probably a mapping error in the location of the building; the Sauthier map is not the most accurate. Work on the summer house was taking place in the 1770s (Appendx 1) but this appears to have been maintenance so perhaps it had been in place for some years by this time.

The eastern boundary of the Pleasure Grounds shown on the 1786 map was rather different from that of 1752. The eastern avenue running south from the Green House, the seat to the south and the ha-ha further south again all appear to have been removed to be replaced by a dense belt of trees running south from the cross avenue (perhaps part of the avenue was allowed grow out), which then curved out to the east before turning back west with a further eastward curve at the far southern end. This tree belt had returns to the west to both the north (perhaps running along the south side of the cross avenue and connecting with the belt around the upper lawn) and south. It may be that there were developments beyond the park in this direction that required the planting of what would appear to be a substantial screen. Perhaps new properties on the opposite bank of the river or on Richmond Hill were felt to be intrusive. A ditch that marked the eastern edge of this wooded belt was recorded during the AP/lidar mapping and the earthwork survey when it was traced as far as a point opposite the end of the cross avenue ([68] and [76]). At its southern end ditch [76] may have run beneath the later ramp up to the park exit onto the embanked towpath but some irregular depressions to the east of this probably mark the damaged continuation of its line. No evidence for either south-western return was seen. The date of this extension is uncertain but its character is similar to that of the Sweet Walk (below) and has the appearance of some maturity so perhaps this work also took place before Henrietta's death in 1767.

The track along the east side of the Pleasure Grounds appears to have been replaced by a track running diagonally across East Meadow. This was seen during the AP/lidar mapping and as a geophysical anomaly but only uncertain hints of it were identified as earthworks.

Sweet Walk

The sinuous Sweet Walk ran within a band of trees around the south-west and north-east sides of Great Lawn which had by the time of the Sauthier map been opened up to form a single field. In a document specifying works to be done for Henritta on the estate, there is mention of a 'sweet walk nursery' suggesting that it originated before Henrietta's death in 1767 (Appendix 1).

The 'crossing from the Ice House to the Sweet Walk' was mentioned in 1784 and the 1876/6 map shows that the boundary with Marble Hold had been moved to the west on a more oblique line to allow direct access from the icehouse to the start of the sweet walk which lay in the vicinity of the current stable block. Hints of a slightly raised ridge that could have marked this 'crossing' were identified during the earthwork survey [133] running from approximately the icehouse to the arch in the later stable block. A short, rather awkwardly angled avenue was depicted running

out from the start of Sweet Walk into Great Lawn. This would not provide any real link to the house and it seems likely that it was either an error and should have been shown running parallel to the oblique field boundary to the south, or was slightly confused and was actually a remnant of the earlier boundary between Mr Ashe's land and Plumbush.

The location of the sweet walk within the still wooded margins of the park meant that in general it was not accessible to AP/lidar mapping or geophysical survey but a curving gully half way along its western arm was mapped for about 60m from AP/lidar data and a very high resistance curving linear anomaly [r10] was identified during the geophysical survey that was probably the north end of the same feature. Most of this area was accessible to earthwork survey which identified this same gully and its continuation curving back towards the north-east for at least a further 35m [139] and beyond as a single fainter scarp behind the current tennis courts [144]. It re-emerged as a gully to the ENE and could be surveyed intermittently along most of the north side of the park [148]. It is likely this gully represents the boundary of the woodland and it appears on 1860s 1st edition 25 inch OS maps.

The Sweet Walk itself probably started in the area of the yard behind the stables and then ran into the heavily wooded area to the north where no survey was possible but some earthworks were noted. The walk then probably followed the line of the road to White Lodge from the slight deviation to the west for about 80m [138] where it probably turned back west into the area of dense vegetation before curving around to run slightly sinuously along the north side of the park. Several ridges and scarps ran on approximately the right line (such as [149], [151] and [163]) but these were all rather straight. A fragment of ridge surviving beneath tree mounds [153] was more convincing as a remnant of the walk.

Approximately in the centre of the north side of the park was a large mound about 30m in diameter and at least 1m high [150]. This was on the line of the boundary with Mr Ashe's land as shown on the 1752 map so it seems likely that this post-dated its removal. The ditch thought to be the boundary of the enclosing woodland (above) ran over it, though curving to respect it, suggesting that it pre-dated the Sweet Walk. It seems most likely that this mound was created as a viewing point looking back towards the house, possibly constructed at the same time as the Sweet Walk.

Other changes

In West Meadow the division between Marble Hold and Dole Mead appears to have remained though the internal division of the latter had gone by this date. The line of trees planted along the western boundary of the park also appears to have survived although the quarter circular feature to the south and return east to the north both appear to have been lost. Although the octagonal feature within West Meadow was omitted this is probably due to simplification as it is known to have survived until the 1940s.

In East Meadow the 1752 'Planting south of the coachhouse' appears to have been opened out and a new path ran from the stables to a point east of the Green House, parallel to the lane. From here it curved east and ran ESE across the open area to the

river, the divisions between the Charity Lands and the area to the north having been removed. What would appear to be a track crossing East Meadow on approximately the line of the southern part of this track was seen on aerial photographs as a fragmented cropmark in the grass and may have been picked up in places during the earthwork survey (probably [199.a] and possibly [224]). The geophysical survey also picked this track up [gpr36] but suggested that it extended across the Great Lawn towards the gate in the north-west corner of the park. In East Meadow it appears as two parallel high amplitude reflectors (perhaps edging) but to the west as a single low amplitude reflector, and the two features did not quite align so two different features seem to have been conflated. Elsewhere in East Meadow the east/west dog-legged boundary had been replaced by a north/south boundary no evidence for which was seen.

There appears to have been considerable development along the eastern margin of the park that probably extended beyond the current park boundary into what is now Meadowside. To the south the enclosures appear similar to those shown in 1752 (though as noted above there are some uncertainties due to damage and geo-referencing difficulties with the earlier maps) but the buildings appear to have been lost. A narrower strip of enclosures ran north of this with a hedged western boundary. Some otherwise unexplained scarps might be related to this boundary ([202]/[212]) and it is possible that some others (such as [247]) might be remnants of the internal divisions. To the north of this was a group of buildings with what appear to be formal gardens to the north and east. This was rough ground at the time of survey and changed considerably during the 19th century. It was difficult to identify any of these features on the ground with any certainty though some of the earthworks surveyed may well be related. This area was omitted from the geophysical survey and nothing was recorded here during the AP/lidar mapping.

The 19th century

Henrietta Hotham, Henrietta Howard's great niece, inherited the estate in 1793 and appears to have lived at Little Marble Hill letting out the main house. She died in 1816 and the 5th Earl of Buckinghamshire inherited, however he and his brother broke the legal entail set up by Henrietta Howard and sold the estate (apart from East Meadow and Little Marble Hill) to Jonathan Peel, the younger brother of Sir Robert Peel, in 1825. He held it for most of the century and made many changes and also bought Little Marble Hill in 1876, reuniting the estate. He died in 1879, but his widow continued to live at Marble Hill until her death in 1887. She was the last resident of Marble Hill and the house remained empty for the rest of the century.

Early 19th century

The 1819 Greenwood map (Figure 16) shows a track running across East Meadow more directly to Little Marble Hill (or Marble Hill Cottage) than the track it replaced. This track survived as a very low earthwork on a curving line from the Little Marble Hill area across East Meadow and then straighter and even fainter on towards the south-west corner of the car park mapped from AP/lidar data and identified during the earthwork survey ([195]/[199]). This track is likely to have been very recent in origin; the 1819 tithe map shows a narrow break between two fields on the line of

the track shown on the Sauthier map (above) suggesting it must have been removed recently enough for the boundaries to remain even if redundant. Other than this, and some detail on the layout of Little Marble Hill, it is too small scale and inaccurate to be informative.

The larger scale tithe map, also of 1819, adds a considerable amount of detail on the field boundaries though gives very little other information (see Appendix 2). This is the first source to clearly show that the semi-circular court on front of the house had been extended to the north, perhaps to create a full turning circle. The 1786/7 map hints at this but is too inaccurate to be reliable. A ditch on this line was recorded during AP/lidar mapping and the earthwork survey [1] but only around the north-east quarter, probably due to later features (see 'After 1887' below). The geophysical survey showed a low amplitude reflector [gpr18] indicative of a ditch continuing further to the west.

The tithe map also shows a semi-circular projection in the eastern boundary of the pleasure ground, at a point opposite the end of the cross avenue. This feature was recorded during the AP/lidar mapping and the earthwork survey showed that it comprised a platform with a curving outer scarp, ditch and bank [71]. An irregular feature in the centre suggested that it probably once had a central feature of some sort. This boundary is shown to be straight on the Greenwood map which did show a similar feature on the boundary of the grounds of Little Marble Hill to the east so it must have been recently laid out.

To the south, the tithe map showed a series of enclosures running along the riverward side of the park considerably reducing the Pleasure Grounds around the house. This suggests an expansion of agriculture and perhaps a desire to increase the income from the estate associated with the acquisition of the estate by the Earl of Buckinghamshire and his brother in 1816 (not unlikely given their later sale of most of the estate). That this development must have been recent is indicated by the Greenwood map, which clearly shows three interconnected cross walks south of the house which would have carried the Pleasure Grounds into the now enclosed area.

The northern boundary of these new enclosures seems to be on an almost identical line to that of earlier enclosures shown on various maps from 1635 onwards. Apart



Figure 16 - Detail from the south-west sheet of 'Map of the county of Middlesex: 1818-19, published in 1819' by C Greenwood (National Records for Scotland Reference- RHP20636/3)

from the division of West Meadow the others had all probably been removed at various times; those within the Pleasure Grounds certainly by Mason's view of 1749 and probably during the 1720s, and those to the east possibly by the 1780s (the scale of the Sauthier map makes this rather uncertain though the line shown in 1819 appears to run to the south of the earlier line). This suggests that several boundaries had been reinstated on approximately the same line as earlier ones and that features on this line identified during this research, and ascribed to the twelve foot way (above), might have a more complex history. The AP/lidar mapping identified parallel ditches running across West Meadow and the lower lawn where there was a bank between them, as well as a scarp on a parallel line to the north. The ditches may have both continued across East Meadow though their alignments diverged slightly which is perhaps suggestive of different phases. Earthwork survey identified parallel scarps within West Meadow on the same line as the AP/lidar mapping [100], as well as several slight scarps running across the lower lawn ([84], [87], [88] and possibly [80] and [83] to the east) and some similar scarps in the south of East Meadow that may also align (such as [215] and [218]) though again they appeared to diverge. Geophysical survey also identified high amplitude reflectors crossing West Meadow and lower lawn [gpr30] and another to the north of this within lower lawn [gpr27], plus some intermittent high amplitude traces to the east that were continued/paralleled by low amplitude linear features, [gpr30] again, also rather more widely separated than features to the west. It therefore seems likely that these features may be of more than one phase, some being associated with the twelve foot way or the earlier field boundary, some with these new boundaries. These 19th century enclosures were subdivided and it seems that a ditch recorded during the AP/lidar mapping and earthwork survey [73] marks one of these internal divisions though it could be a remnant of an earlier boundary. The Pleasure Grounds had been reduced further with a curvilinear boundary that probably ran along the top of the slope down from the terrace to the lower lawn. The narrow strip south of this probably contained an agricultural track which is indicated crossing West Meadow though not shown continuing to the west. It is possible that some intermittent [unnumbered] linear anomalies recorded during the geophysical surveys relate to this boundary or to the suggested path.

Little Marble Hill lay to the east of the main house. The Greenwood map shows the track that crossed East Meadow diagonally towards a building in the south-east corner of the estate as turning north and running along the narrow strip of ground. The boundary of this area was shown as straight with a large semi-circular projection west about half way along. This is very probably an exaggeration of [230.a] and suggests that the rest of [230] dates to this period. The tithe map shows a slightly curving boundary without a projection so may be earlier, the 1863/4 OS maps show a boundary of the same form, but since the intermediate 1846 Warren map (below) differs this is probably a simplification or error. Within this enclosure the Greenwood map shows an 'L' shaped building to the south, presumably Little Marble Hill, with the approach track curving around close to it to run along the enclosure northwards passing several apparently smaller buildings. This is probably a simplification as all the later map evidence and the earthwork survey suggests that this was a garden path without a direct connection to the drive. Nevertheless the Warren map shows a blank strip through the centre of this area passing what may have been several small

buildings apparently constructed against the boundary with Meadowside which does not appear to have existed in 1819, so the earlier map probably contains elements of the true layout.

1825 to 1887: General and Lady Peel

The 1846 Warren map

The 1846 Warren map (Figure 17) is large scale, appears to be generally accurate and depicts the park following many of the developments initiated by General Jonathan Peel MP who occupied the house for much of the 19th century.

The house itself was largely unchanged though the area in front of the house appears to be quite overgrown and the semi-circular projection northwards wooded so, it is possible that it was never intended to create a turning circle as suggested above but may have just been a deep bed or shrubbery, grown out. In 1850, it was recorded that the front of the house was adorned with Portugal Laurels (Appendix 1). The use of evergreens seems to be a consistent characteristic of the quarters, with extant yew, box, butcher's broom, holly, laurel and holm oaks recorded variously. The north-east quarter was fairly densely wooded and contained a small new building to the ENE



Figure 17 – Detail from 'Plan of the Parish of Twickenham, Middlesex ... by ... W.T. Warren', published Isleworth, 1846, original scale approximately 1:4790 (© British Library Board (Maps 4190.(1), with permission)

of the 'Chinese' cottage with a small courtyard between. This may explain an ENE facing scarp [20] recorded during the earthwork survey. The western quarters appear to have largely been cleared apart from irregularly wooded margins though there are indications that the avenue along the western side of the Pleasure Grounds survived, despite the creation of the new enclosures described above. This may be pushing the accuracy of this map too far however as the evidence suggests that these areas have been woodland in the widest sense since the gardens were first laid out. The south-east quarter also appears to have been largely cleared, again with the exception of a belt of trees along the eastern side, though again this may be pushing the mapping too far. The Italian lords and ladies plant found here seems to concur with the former existence of woodland along this margin. To the south the curving southern boundary of the grounds had been replaced with a straighter boundary more closely parallel to the south front of the house and on a more northern line. This probably ran along the bottom of the slope between the north lawn and the terrace ([33]) where it would have been slightly hidden, somewhat like a ha-ha. To the east of this was a small enclosure and building and it is possible that traces of these survived as earthworks ([83]) or unnumbered features in the GPR data. Access from this enclosure into East Meadow might explain the break in [76] mentioned in [77]. To the south the enclosures appear much as on the 1819 tithe map.

Within West Meadow the long established boundary between Dole Mead and Marble Hole appears to have gone, perhaps lost rather than removed as some trees on its line remain, particularly to the west. Several hollows associated with these were surveyed (see [100]). To the north an isolated tree may relate to the feature shown on the 1752 map; although it would appear to be to the west of this this is probably due to mapping inaccuracy as a tree was seen on wartime aerial photography to the east of this as were earthworks [124] and geophysical responses [gpr31] with nothing here.

To the north of this was the new (extant) stable block, completed in 1827. This lay on the opposite side of the park to the earlier stables that it replaced, approximately at the point where the sweet walk had formerly started. The southern part of the woodland enclosing the Sweet Walk had been remodelled to create a semi-formal entrance or to shield them from the house. From the point where the woodland was shown to be at its deepest on the 1786/7 and 1819 mapped a new boundary that ran more to the south-east before curving in to the arched entrance to the stables, thereby creating a deep, sub-rectangular block of woodland rather than a narrow curvilinear strip. It is noteworthy that the ditch identified during the AP/lidar mapping and earthwork survey [139] as forming part of the earlier woodland boundary peters out as it approaches this area, suggesting it may have been filled. To the south was a sub-circular block of woodland framing the southern side of the entrance to the stables. No evidence for this was seen, probably obscured by the tarmac tracks.

The western arm of Sweet Walk appears to have been abandoned by the time of the Warren map. White Lodge in the north-west corner of the park is depicted, but it is completely enclosed by woodland with no obvious access, which suggests that there were paths through the woodland that were not shown. There is a hint of a curvilinear feature running along the western half of the north side of the park

probably a trace of the walk itself. This ran to the edge of the woodland strip along this side of the park which appeared to have been cut back to a straighter edge, perhaps picked up by scarps [151]/[163], though these may be too far to the north and tree boles [152] are more likely to represent the wood edge at this time.

To the east, the approach to the house appeared to remain much as it had since at least 1819 and possibly as far back as the 1780s. This ran quite straight from the north gate to a point close to the south-west corner of the car park where the route to Little Marble Hill diverged and the route to the house became slightly curved. The line of the straighter northern section may have been picked up by the earthwork survey [171] and the more curved southern section appears to be reflected in the line of the current tarmac track. To the east of this was a boundary that may have been surveyed as scarp [182].

The Warren map shows that the old stable block, on the lane to the house front had been demolished (in 1827) and the former stable yard appears to have been replaced with a strip of scrubby planting. Other buildings are shown in this area but apart from two of these the walled garden is blank suggesting it was not in use. These all lay under the current car park however and are completely obscured.

South of this the track to Little Marble Hill is shown sweeping across East Meadow. Little Marble Hill itself is shown as a rectangular building with a narrow block running off to the NNW, at the south end of a narrow strip of land separated from the rest of East Meadow. The site of the house was identified during the earthwork survey ([242]) with earthworks suggestive of the narrow block to the north ([243]). The western boundary of Little Marble Hill appears to be incorrect as it does not reflect the 1819 maps or the later 1863/4 OS maps, which are identical, so it is likely that the boundary shown on the earlier maps persisted throughout the 19th century.

The 1863/4 Ordnance Survey maps

The 1st edition 25 inch OS maps of the later 1860s were based on surveys of 1863-4. They are considerably more detailed than earlier surveys and show both features that were omitted from these maps and new features. The estate was still owned by the Peels at this time.

The lane to the house ran on the established line turning north of the Green House to run across the front of the house, but then carried on to the stables to link up with a track on a very similar line to the modern one from the stables to the gate on Richmond Road at White Lodge creating a complete circuit around the edge of Great Lawn. The front court appears to have been simplified with a small circular area in front of the house similar to that of today and the area curving out to the north appears reduced and less densely vegetated. The area around the stable block had been formalised with more rectilinear boundaries close to those of today and a straight route ran from this area across the north end of West Meadow to Orleans Road on the line of the modern path here. It appears that the whole of the Great Lawn was fenced around the margins which may explain some of the relatively slight scarps picked up during the earthwork survey. There was also a scarp around

the south-west and north-east sides of the Great Lawn that probably marks the former extent of the woodland enclosing the Sweet Walk, probably confirming the discussion above (see ‘The later 18th century’).

Surprisingly, the 1st edition 25 inch OS maps are the first to show the quarters around the house in any detail since 1752. To the west of the house a path ran directly from the end of that wing wall to the icehouse which appears to be at the north end of an open area running SSE as far as cross avenue, perhaps preserving the avenue shown in 1752. To the ENE a path ran through the quarter immediately adjacent to the service buildings, across cross avenue and on past a small building within the corner of the south-east quarter. No clear evidence for this building was seen in the earthworks but an irregular spur could be related to the path, and this area was rather confused, perhaps disturbed by its removal. The upper lawn was asymmetric by this date with the western walk/extension surviving in a rather degraded form without any other paths shown in this quarter and the eastern extension much reduced and irregular. This fits with the recorded earthworks (see [36] and [44] respectively). A path ran diagonally through the southern part of the south-east quarter where it met the south end of the reduced walk from the surviving Green House. This appeared to be a much reduced version of the diagonal walk of 1752 and scarp [50] seemed to align with its south side. The quarters were defined to the south by a straight boundary the central and eastern sections of which matched those of 1846. To the west, the boundary ran on a more northerly line very close to the quarter’s current extent.

A rectangular enclosure lay immediately to the south of this boundary, on the terrace directly below the upper lawn. Cropmarks in the grass in this area indicate the subsurface remains of a formal garden layout. The picture is fragmentary and different elements of the design have been seen on different photographs taken from the 1940s onwards (see Figure 18 and Figure 19), but these have been plotted and together they show three ovals set within a subdivided rectangular area about 35m by 14m (Figure 20) closely reflecting the enclosure surveyed in 1863-4. Parchmarks approximately 1m wide probably indicate gravel paths (Figure 18), dark cropmarks visible on the northern side may represent the remains of flower beds, although these are not visible within other parts of the scheme (Figure 19). The same layout was seen during the geophysical surveys ([r14] Figure 62, [gpr23] Figure 63), with a similar pattern of preservation, but was not picked up in any coherent form during the analytical earthwork survey, other than two scarps possibly marking its western extent and the division between the western and central features [53]. This garden area was not shown in detail on any known maps. The 1st edition 1869 Middlesex 6 inch OS map shows the rectangular enclosure mentioned above filled with a scatter of small trees or shrubs (Figure 21), whereas the Surrey 6 inch OS map of 1871 depicts four rows of shrubs. The 1890 sales particulars (below) refer to ‘A fine expanse of Lawn with Italian garden’ (the enclosure for which is visible on Figure 22). This does not necessarily indicate that the flower beds were still maintained by that date (particularly given estate agents’ tendency towards hyperbole), or may instead have been referring to other features. By the time of the 1894 OS maps the area is depicted as being free of plants.



Figure 18 - Part of the design of the garden can be seen as parhmarks, probably paths, in this photograph taken in August 1957 (RAF 58/2252 10 23-AUG-1957 Historic England RAF Photography)



Figure 19 - In this photograph the darker corners of the scheme, probably flowerbeds, are most noticeable (earth.google.com 19-JUL-2013 ACCESSED 29-APR-2016)



Figure 20 - The paths and flowerbeds, here highlighted in orange, were seen as cropmarks in the grass on the lower terrace on the south side of the house (mapping © Historic England; photograph RAF 58/2252 10 23-AUG-1957 Historic England RAF Photography)

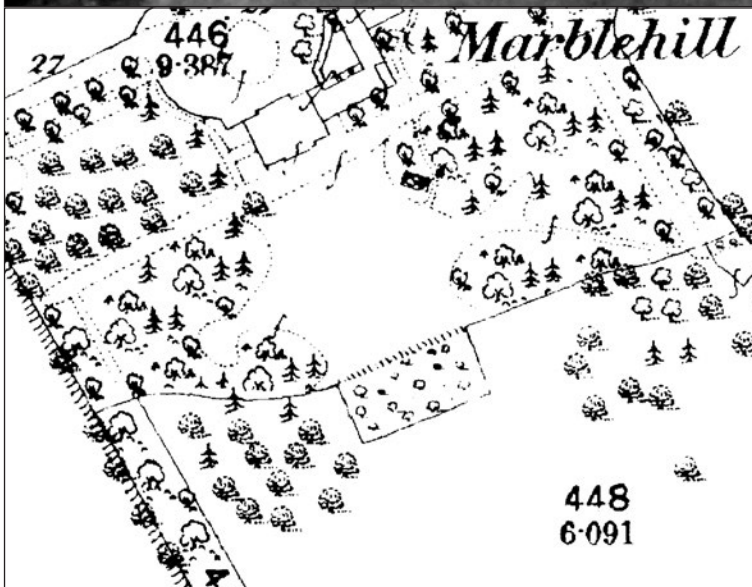


Figure 21 - Historic OS maps between 1869 and 1913 all show the outline of the area where the flower beds were located; this extract is from the 6 inch 1880 Middlesex map (Historic Ordnance Survey mapping: © and database right Crown Copyright and Landmark Information Group Ltd (All rights reserved 2017) Licence numbers 000394 and TP0024)

Layouts such as these are synonymous with the Victorian Italianate style, popular from the 1840s to the 1860s, but were part of a larger suite of elements that included terraces, balustrades, statues, vases and fountains (Ikin 2012, 77, 83). One such element that may have been associated with this garden was a short flight of steps leading down from the upper terrace and which probably connected with the network of paths. These steps were centrally placed along the southern edge of the upper terrace and can be seen in a photograph taken in 1900 (reproduced in Bryant 2002, 40). The OS depiction suggests a previously more formal arrangement had grown out by the late 1860s but the garden does not appear in 1846 which suggests that it was a feature of about 1850. The terracing was created in the 18th century but these additions illustrate how existing features were incorporated into a new design.

In the north of East Meadow the 1860s 1st edition 25 inch OS maps show that the boundary with the kitchen gardens had been straightened and the enclosures to the north of Little Marble Hill had also been made more regular. Two new routes apparently allowing direct access to buildings to the north of Little Marble Hill had also been laid out, perhaps suggesting these were in separate ownership though the boundaries are not clear. Evidence for one of these routes was seen in the geophysical data; two parallel, linear, high amplitude reflectors suggesting edging to the track [gpr38]. Both tracks appear to have led to the south of two new, small buildings on the boundary between the park and the buildings to the north of Little Marble Hill, suggesting that this may have been a gate or small lodge. This may also have been seen in the geophysics data [r3] though here it was also suggested that the rectangular anomaly identified may have been the remains of a temporary stand erected for a sporting event or planting beds associated with the kitchen gardens.

After 1887

After the death of Lady Peel in 1887 the contents of the house were sold and the estate put up for auction in 1888, though initially failed to sell. Sales particulars for a second attempt to sell the estate in 1890 indicate that the most likely purchaser was thought to be a developer; the front page mentions 'exceptional facilities for building development' and although the estate was being sold free of any building restrictions also included a plan of the estate with a suggested network of roads across the park in red (Figure 22). This attempt was again unsuccessful and the house and grounds were not sold until 1898, bought by the Cunard family (Draper 1970, 52).

Following the sale of the estate in 1898, building work began in 1901 with the construction of roads and sewers. This was soon halted, after a payment to the Cunards of £3,500 deposit, while the sale of the site to the London County Council (LCC) was arranged (below). Once in public ownership, work was undertaken to remove all traces of these works (Anon 1903c, 10, see also below).

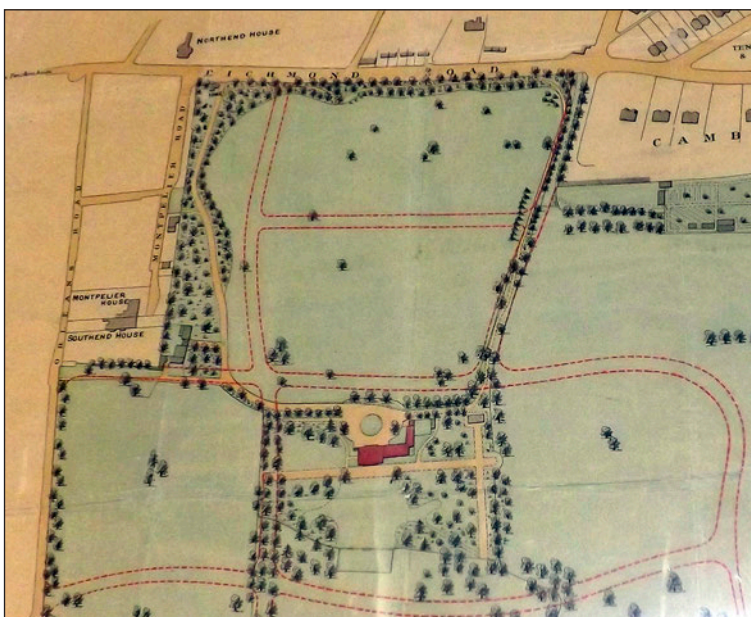


Figure 22 - Detail of suggested (and unexecuted) road layout for the development of Marble Hill Park 1890 (RLS LM 2672 Sales Catalogue)



Figure 23 - The broad cropmark of a possible early 20th century road running between the road and Marble Hill House (earth.google.com 19/07/2013, accessed 09/01/2016)



Figure 24 - Mapping of the road and turning circle. The road was seen as a cropmark, the turning circle largely as a very slight earthwork on lidar (© Historic England)

The largest cropmark recorded within the Great Field during the AP/lidar mapping, and in the geophysical data [m2]/[gpr15], was probably caused by the subsurface remains of a road laid out as part of this short-lived development (Figure 23). This road was 11m wide and would have linked Marble Hill House with Richmond Road. Although the road is aligned on Marble Hill house, it is not at a right-angle to it and runs slightly to the NNW from the house, nor is it at a right angle to Richmond Road. This deviation may reflect the shape and size of the Great Field and a road on this alignment provides a more equal division of the area. The cropmark ends a little to the north of the house and suggests that the creation of the road led to the

infilling of the semi-circular ditch of an extension of the court in front of the house noted above. The eastern edge of the cropmark aligned with a gully and scarps noted during the earthwork survey [156] and thought to mark the line of a service pipe; several service hatches were visible along its line. This may indicate that the works also included the insertion of services, at least one of which was retained, suggesting that this was also intended as a central conduit for services, perhaps explaining its width; a point first noted in the geophysics report (Linford et al 2016).

This pattern, of a sinuous road system replaced by a straighter broader spine road, can also be seen in the nearby Cambridge Park estate to the north-east of Marble Hill. Here the spine road is a similar width (c13m) and both were aligned on a grand building: Marble Hill House and, in Cambridge Park, Richmond House (later renamed Buccleuch House) on the opposite bank of the Thames (Figure 25 & Figure 26). The suggested road development for Marble Hill published in the 1890 sales particulars contains no loops but is reminiscent of the narrow and curving nature of the replaced road in Cambridge Park (Figure 22).

The 20th century

Saved for the nation, secured for the people

Negotiations for the purchase of Marble Hill began in 1901 after building work had started across the park (above). Those involved included Andrew Torrance (chair of

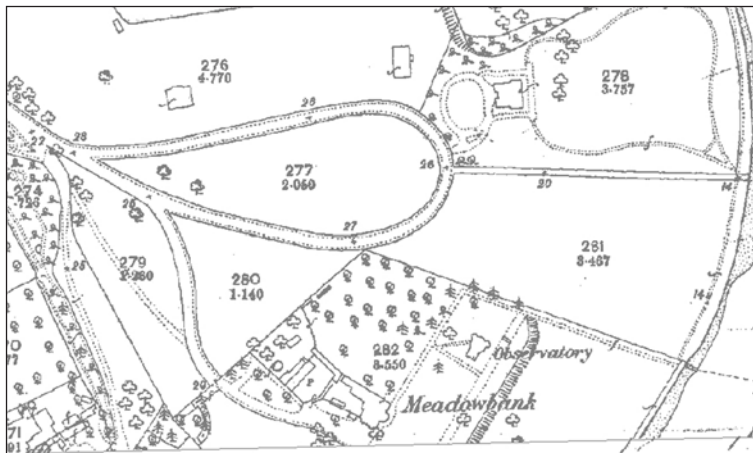


Figure 25 – The original road layout of Cambridge Park as surveyed in the 1860s, Marble Hill lies to the immediate south-west of Meadowbank (OS Surrey 1879)

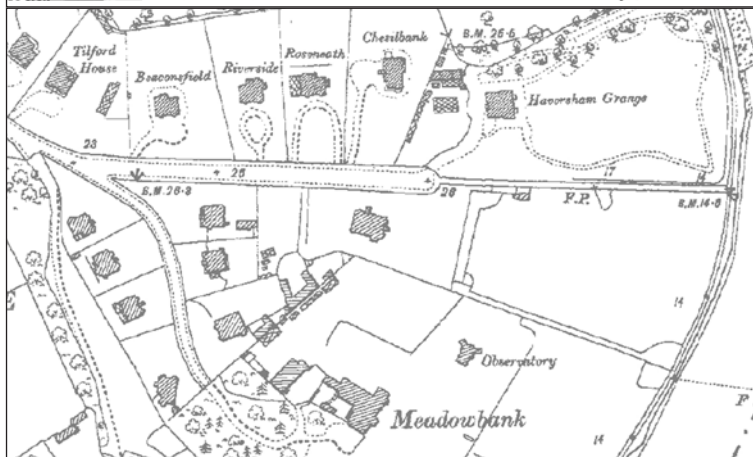


Figure 26 - The same area as Figure 25 showing the revised road layout surveyed in the 1890s, Richmond House has been renamed Buccleuch House (OS London 1896)

the LCC 1901-2), Lord Monkswell (chair of the LCC 1903-4) and Sir Edward Poynter who was president of the Royal Academy. The estate was 'saved for the nation' by an Act of Parliament (Royal Assent 18 Nov 1902) following a public campaign to rescue 'the heart of the view from Richmond Hill' from suburban expansion' (Bryant 2002). The house and park were purchased in July 1902 for £72,000. The cost was split between private benefactors and local authorities but the largest contribution was made by London County Council who paid half the total despite Marble Hill being beyond the council's boundary at that date (Inglis 2014, 25). After the purchase of the park LCC spent £1000 to remove gravel, hard core, gullies and obliterate the intended roads. They also removed dilapidated fencing along the public highway and repaired other boundaries (Anon 1903c, 10). Beyond the removal of any trace of the aborted redevelopment of the Marble Hill estate there was, in the words of Andrew Torrance, 'no attempt to beautify nature' (Anon 1903c, 10).

The members of LCC involved in the negotiations and present at the opening were members of the Liberal party-backed Progressive Party. The purchase of Marble Hill and the large sum spent by LCC can be seen in the context of the aims of the party, which introduced legislation improving council workers conditions including a fair-wages clause in council contracts and had a number of aims including the municipalisation of land, water, gas and trams (Bevir 2011, 203; Haggard 2001, 128). Lord Monkswell envisioned the day when 'Electric cars' - presumably trams - would bring thousands to that beautiful spot and he hoped before long there would be ample facilities for Londoners to journey thither along the waters of the Thames (plans for a landing stage were also in hand). What would now be seen as the ecological advantage of the park is reflected in one 1903 newspaper account which refers to Marble Hill as a 'river-side lung' (Anon 1903d, 12 col B), while a 1915 report refers to the park as a 'breathing space for the Metropolis' (Anon 1915, 5 col B).

This emphasis on the benefit for the people is also seen in one of the reports concerning the dispute over ferry rights to Marble Hill in the early years of the public park's existence. Public access to Marble Hill created demand for a more convenient river crossing, made possible by the opening of a footpath on the Surrey side of the river in 1902. Hammerton & Co were authorised to open a ferry linking Marble Hill to the Surrey bank in 1909. The new ferry was seen as a threat by Lord Dysart, the owner of the nearby ferry at Eel Pie Island and legal action was taken in 1913. Lord Dysart was successful on appeal in stopping Hammerton's ferry, but there was considerable public support for Hammerton and the costs of his appeal to the House of Lords, which he won in July 1915, were underwritten by subscription. The account of this published in the Middlesex Chronicle ended: 'We will still regard the ancient Patrician ferry at Eel Pie Island with all the veneration with which we have looked upon it hitherto ... But for all this it must tolerate, even if it be at a chill distance, the new ferry of the democracy' (Anon 1915, 5 col C).

When the park was opened, the intention to build a landing stage was mentioned (Anon 1903c, 10 Col C). Historic maps show a stage and boathouse first depicted on 1913 and 1914 6 inch OS maps close to the south-west corner of West Meadow, near the southern end of Orleans Road. These are not shown on 1934 and later OS maps, but they were clearly still in place on air photos taken in 1945 and survive to this day.

They are associated with Hammerton's ferry, although no ferry crossing has ever been marked here or elsewhere along the Marble Hill river frontage. The ferry may have run from either the point marked 'Sloping masonry' on the opposite bank to the south-west or the Landing Stage further west.

Once Marble Hill and with it a significant element of the view from Richmond Hill were saved, various newspaper accounts highlight the benefit that the people of London would derive from the public ownership of the park, which was opened on 1 June 1903. The opening ceremony, delayed an hour by a thunderstorm, included speeches from those involved in the negotiations to buy Marble Hill - which was then 'secure from the ruthless builder' (Anon 1903c, 10 Col C). An emphasis was placed on the transfer of this land from private to public hands - Marble Hill had been 'secured for the people' and Lord Monkswell said that he took charge of the park 'in the people's name' (Anon 1903c, 10 Col C). Mr Gomme (Clerk to the Council, founder member of the Folklore Society, founder of the Victoria County Histories and instigator of the blue plaque commemorative scheme) stated that the 'history of this new annex to London has in the past dealt with the Court and its entourage; in the future will deal with the people'. Other speakers included George Shaw-Lefevre, member of LCC and co-founder of the Commons Preservation Society.

North of the crossing to the Sweet Walk (above) was a feature of uncertain date but possibly from this period; an angular raised area seen on AP/lidar (Figure 27) and recorded during the earthwork survey ([134]). It was well defined to the north and east but to the south it seemed to relate coherently to the topography beyond the tarmac track suggesting that it was a negative feature, the result of levelling to north and east. A large mound and depression ([135]) at its northern end was thought to be a tree throw and a tree can be seen there in an aerial photograph taken in 1946, perhaps also one of a group of trees shown on the Warren map in this area, and

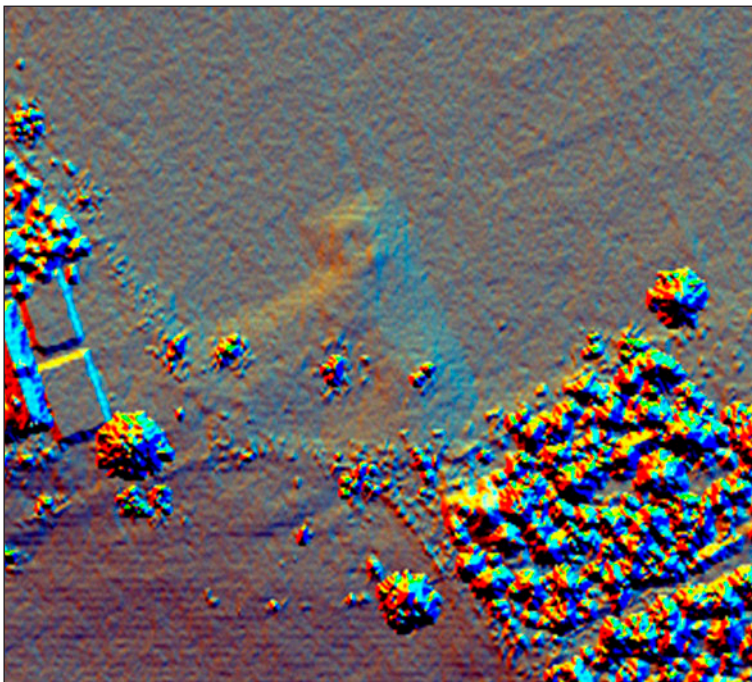


Figure 27 - Lidar showing the raised area to the north-west of the house (Environment Agency 2007)

possibly even associated with an avenue of trees depicted on the 1786/7 Sauthier map. The earthwork could be the result of ploughing and levelling following the removal of early works associated with the development plans for the park in the early 1900s (above) or perhaps the reinstatement of the park as a leisure amenity in the post-war period; the presence of the tree restricting operations (below). It could however be considerably earlier, the result of differing agricultural activities within fields which probably survived until the creation of the Sweet Walk in the 1780s. Mr Ashe's land to the north and Plumbush to the east may have remained under arable longer than Marble Hole to the south. On balance a later date seems more likely.

'The vanished hand' and other tales: newspaper reports of Marble Hill

Marble Hill was mentioned in a number of newspaper articles and many of these are included in the references. Some were specifically about Marble Hill, particularly those dealing with the sale and subsequent opening of the park to the public in the early years of the 20th century. In others though, mention of Marble Hill was incidental. There were a number of such newspaper reports that are not directly relevant to this project but which offer insights into early 20th century Marble Hill.

'The vanished hand' is the title of a June 1902 report of a failed attempt to steal a valuable scarf pin from the wearer without him noticing. The theft was attempted while the victim, Frederick Blake, was watching a tug-of-war at Marble Hill and this account provides one of the earliest references to sporting activity taking place in the park. Not all of the articles that mention Marble Hill were published in London newspapers and some appear to have only been published in regional newspapers; the 'The vanished hand' was published in the Gloucestershire Echo.

In 1926, a Mr Otto Cowell was flying over Twickenham when his engine failed. He hoped to bring the aircraft safely down at Marble Hill but a number of children were playing there and despite the additional risk to himself he turned his aircraft into the trees (*Northern Daily Mail* page 5 col B, 31 March 1926).

In 1927, the Marble Hill park keeper was convicted of stealing suitcases; one from a Southern Railway barrow from which a porter was delivering luggage to a house on Richmond Road, another from the rear platform of a bus. According to the police during the summer of 1927 up to twenty suitcases had been stolen from buses on the Richmond – Hampton Court route which passed Marble Hill (*Gloucester Journal* page 5 col C, 20 August 1927).

Most intriguing of all is the *River Mystery*. In 1910 the Marble Hill park keeper found in a moored punt a number of items including a fur boa, handbag, umbrella and a bus ticket from the City to Chiswick. A Thames police patrol later found a woman's hat in the Thames, so the river was dragged but nothing found. The article reporting this ends: 'The only clue – and it is very faint – with which the police were provided was to be found in the small heel-marks of a lady's boot on the gangway leading to the punt. There were no returning footmarks in the direction of the river bank' (*The Nottingham Evening News* page 3 col D, 5 February 1910).

Farming in the park

Some early newspaper reports emphasised the rural at Marble Hill. In 1909, the LCC let the right to graze sheep on Marble Hill for a term of three years at £7 per annum (Anon 1909a, 5 col G). A photograph of the flock taken in about 1907 is reproduced in Cherry *et al* (1998, 27). A sheepfold close to what is now the southern edge of the car park was first depicted by the Ordnance Survey on maps revised 1910-1912 and published in 1920. Marble Hill was covered by Middlesex, Surrey and London map sheets and depictions of the sheepfold are not consistent; for example it was not shown on the Middlesex sheet revised 1938 but still depicted on the Surrey sheet of the same date. Although the area was partly obscured by trees, aerial photographs taken in the 1940s (for example Figure 29) show no trace of it.

As well as grazing, Marble Hill was one of five LCC parks where fruit was grown. In December 1911 the *Shoreditch Observer* reported that fruit grown in these parks was sold for £23 5s, and some given to hospitals (Anon 1911, 7 col A). Perhaps some idea of the value of this sum can be gained by comparison with the average weekly cash wages paid to ordinary agriculture labours in 1910 which was 15 s 4d (<http://www.wirksworth.org.uk/A04value.htm#1850>). We do not know what type of fruit was grown at Marble Hill or what proportion of the total it contributed and it may have been a short-lived use of the park. There was an Orangery in the Greenhouse to the east of the house, a photograph of which is reproduced in *Country Life* (1900) but this had been demolished by 1902 when the house was in public ownership (Marble Hill Park Management Plan 2006, figure 4.1).

Wartime allotments

The campaign to encourage the keeping of allotments commenced during the first weeks of the Second World War under the famous 'Dig for Victory' slogan (Couch & Ward 1997, 75). At the same time the Cultivation of Lands (Allotments) Order gave councils power to take possession of land for this purpose (Anon 1939a, 5 col E). The Minister of Agriculture and Fisheries urged local authorities to encourage both more allotment sites and individuals to turn their lawns into vegetable patches. The call was heeded and by the end of the war there were about 1,500,000 allotment gardens (Crouch & Ward 1997, 75, 76). These were a mixture of established allotments, supplemented by temporary wartime emergency allotments on either private or public land. Allotments were also created by local authorities on public parks and playing fields and the aerial photographs taken during and in the 1940s after the war show the impact the Dig for Victory campaign had on Marble Hill.

Locally, land was certainly being turned over to allotments by 1941; in March of that year three acres of school playing fields at Twickenham were set aside for allotments (Anon 1941a, 1 col D). Some public space elsewhere in London was brought into cultivation earlier in the war; some playing fields in Beckenham had been converted by May 1940 (Anon 1940 9 col E). There were bureaucratic problems associated with increased food production and in 1941 it was reported that Twickenham Borough Food Control Committee refused to allow unlicensed market gardeners, allotment holders and nurserymen to sell their produce by retail. As a result it was said that

'tons of unmarketable fruit and vegetables are said to be rotting on the ground'. The Ministry of Food had promised to look into the matter (Anon 1941b, 1 col F).

The earliest available air photographs of Marble Hill taken in November 1940 are dark and of a small scale making interpretation difficult. It is possible that there were no allotments by this date but the aerial photographs suggest they had been established in time for the 1942 growing season; as by September 1942 allotments at Marble Hill are clearly visible (Figure 28). This is similar to the timeframe for the creation of some of the allotments in Worthing, West Sussex where some of the allotments in public parks were not in place in 1941 but present by March 1942 (Carpenter 2009, 50). The delay between the 1939 Allotments Order and the cultivation of sites such as Marble Hill and the Worthing parks suggests that initial demand for allotments was met at other locations. This may have included the cultivation of existing allotments that had fallen out of use as there had been a gradual decline in the number of allotments kept during the 1920s and 1930s. The estimated 815,000 allotments in 1939 had grown to about 1,500,000 in 1945, and in 1944 the government estimated that food grown on allotments, private gardens and land cultivated by service personnel amounted to 10% of all food produced in Britain (Crouch & Ward 1997, 73, 76)

In 1942 Marble Hill had two main groups of allotments. The largest group took-up practically the entire West Meadow and can be seen in some detail in an aerial photograph taken in October 1945. A second group occupied approximately the southern third of East Meadow. A third and much smaller group of allotments was located at what was the north-eastern corner of the park, a location now occupied by buildings marked 'Depot' on the modern Ordnance Survey map. The 1939 Ordnance Survey Middlesex map sheet (revised 1934-5) shows that this area was fenced off by that date and possibly no longer part of the park. It was never marked as an Allotment by the Ordnance Survey and regardless of who owned it, is likely to have been a wartime creation. The presence of these two groups of allotments within Marble Hill Park at their maximum extent in 1942 suggests that they were laid-out in a single phase rather than a gradual increase to meet a growing demand. Diagonal

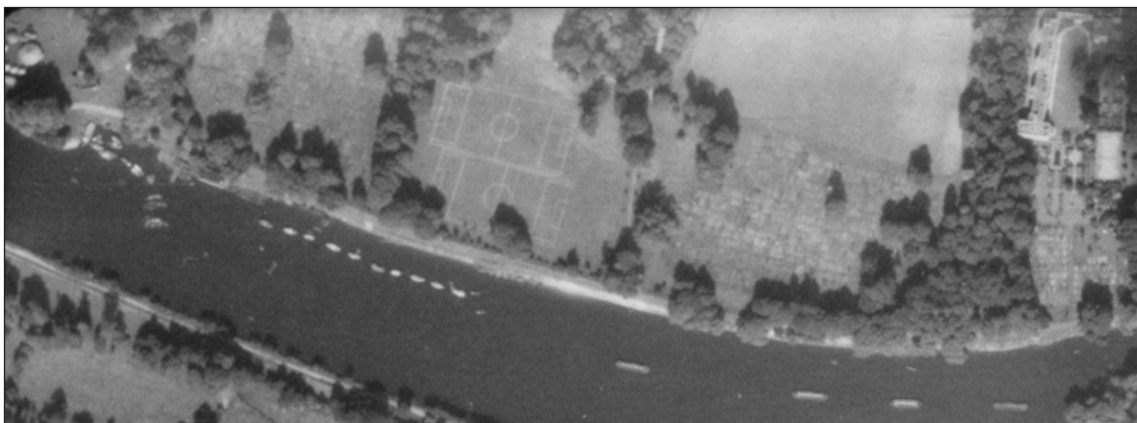


Figure 28 - The south of the park is just visible in this 1942 photograph which shows the arrangement of football pitches with allotments either side (detail of RAF HLA/633 233 6-SEP-1942 Historic England RAF Photography)

paths worn into the grass of the Great Field and seen on 1944 air photographs indicate the routes taken by Twickenham residents to their plots (Figure 29). Hammerton's ferry service to Marble Hill Park also raises the possibility that some allotment owners may have lived on the Surrey side of the river.

In addition to Marble Hill, a review of the aerial photographs covering the area around it show allotments of varying sizes laid out across a variety of locations including the grounds of Meadowside to the east, Orleans Park to the west (the site of the present Orleans Park school), to the north-west Moormead and Bandy Recreation Ground and the area off the London Road now occupied by the houses of Lime Grove and Blyth Close.



Figure 29 -The earliest aerial photograph clearly showing the wartime arrangement of Marble Hill Park: the Great Field (top centre) is crossed by two paths presumably worn by local residents heading to their allotments (detail of USAF LOC304/14 023 22-APR-1944 Historic England USAF Photography)

The wartime aerial photographs show that Marble Hill's contribution to agricultural production was not restricted to allotments. Although only a small proportion of East Meadow was devoted to allotments, the remainder appears in these photographs to have been under some form of cultivation. None of the photographs seen suggest that the land was ever ploughed so, true to its name, it may have been a hay meadow.

Post-Second World War

The arrangement of allotments at Marble Hill remained unaltered during the post-war months of 1945 and into 1946. Their continued use reflected the allotment holders' desire to carry on working their plots and the government's desire to keep food production high. Security of tenure for allotment holders and the need for a sufficient period of notice to quit allowing crops to be harvested was an early wartime concern. It was one of the points concerning allotments presented to the Minister of Agriculture and Fisheries early in the war in November 1939 (Anon 1939b, 3 col G).

By October 1945 the LCC Parks Committee proposed that 50% of allotments should be surrendered by the end of 1946, the remainder by the end of 1947. The LCC's initial desire to see a quick reduction in food production mirrored the government's desire towards the end of the war (1944) to see the amount of farmland under plough reduced by 450,000 acres per year 1946-1948 (Anon 1946, 4 col F). In both instances this was revised when the scale of post-war food shortages became apparent. As the Minister of Agriculture and Fisheries told London allotment holders 'Please carry on...We are having to ask the farming community to carry on with its prodigious efforts. I would ask every domestic food producer to do the same' (Anon 1945c, 8 col E).

Despite encouragement from the Minister of Agriculture and Fisheries and the post-war slogan 'Dig For Plenty', the number of allotments fell after the war (Crouch & Ward 1997, 76). This can be seen in aerial photographs of Marble Hill taken in May 1947 (Figure 30) which appear to show over half of the allotments on the south side of East Meadow had been abandoned. The grass paths between plots and the plots themselves appear particularly overgrown when compared with the other allotments in the park. This apparent abandonment is confirmed in aerial photographs taken in May 1948 which show the southern area of allotments returned to grass. The reason for their abandonment is unclear, but as it was the plots on sloping ground they may have been awkward to cultivate and as demand fell people moved to more favourable areas. Some were also on low lying ground close to the river and flooding may have been an issue. The River Thames did flood in places in March 1947 although it is not known if Marble Hill was affected on this occasion. The raised walkway along the riverbank was presumably put in place to protect against flooding but it was not always successful. Flooding did still occur and from the 1890s OS maps note that the south-western corner of West Meadow was 'Liable to Floods'. Flooding at Marble Hill and the presence of seagulls on the flood waters was newsworthy enough to have been reported at least twice in the newspapers in 1909 and again - albeit in a frivolous collection of stories under the heading "This Morning's Gossip" - in 1916, where it is erroneously reported that 'never before have the inhabitants of Marble Hill had a visit from the seagulls' (Anon 1909b, 4 col F; Anon 1916, 10 col C).



Figure 30 - Marble Hill Park in 1947: the southern side of the allotments in East Meadow (to the right of the photograph) appear to be abandoned by this date (detail of RAF CPE/UK/2112 5228 29-MAY-1947 Historic England RAF Photography)

The remaining allotments and the meadow continued in use until at least May 1951 (see for example Figure 31) but by July 1954 all had gone, the only survivor the small group of allotments to the north-east (visible in Figure 32), which may have continued in use into the 1960s. They were possibly still in use in 1961 but it is not certain if the variation in growth determined by the straight boundary lines is of crops or weeds. The site certainly appears overgrown in 1962 and was possibly cleared in 1965, certainly by 1966. The 1971 air photos suggest by this date that this area had been reincorporated into the park. The site had been partly built upon by 1992 and is now the works yard.

Sport and leisure

Many people use Marble Hill for sport and the park has facilities for a wide variety including football, rugby, cricket and tennis (see Marble Hill Plan 2006, chapter 7 for a summary). Sporting associations extend back to Henrietta Howard who wrote in August 1735 from Bath 'I have learnt all the theory of cricket, and have some thoughts of practising this afternoon' (Bryant 2002, 25). General Jonathan Peel who moved into Marble Hill in 1825 and lived there until his death in 1879 had a sporting interest in horse racing, represented by the stable block he built 1825-1827.



*Figure 31 - Allotments in West Meadow
(detail of RAF 541/334 0042 5-JUL-1949
Historic England RAF Photography)*



Figure 32 - This 1957 photograph shows the park after the removal of the allotments in East and West Meadow (RAF 58/2252 10 23-AUG-1957 Historic England RAF Photography)

Although presumably this was not purely for sport; racehorses were kept there and a two year old he had for sale in 1853 could be viewed there (Anon 1853, 1 col B).

Following the death of General Peel's wife Lady Alice in 1887 the house and grounds remained empty until purchased by LCC in August 1902. In June, a little over month before it was purchased, a newspaper report described an attempted theft

of a tie pin from one of the spectators of a tug-of-war match at Marble Hill (Anon 1902). No explanation of this match or the circumstances of it being held at Marble Hill were given, nor is it clear if the use of the park in this way was common or indeed authorised. It does hint at the amenity the park could be for the inhabitants of Twickenham and beyond and the growing popularity of the park after 1902 is seen in various newspaper reports. Other early 20th century newspaper reports hint that the grounds were being used for sport by describing the keeper at Marble Hill not as a park keeper but the 'keeper of the Recreation Ground' (Anon 1910, 3 col D). Incidental information such as this should be treated with caution; an advertisement in the Middlesex Chronicle for the sale of Yelverton Lodge describes this property as being opposite 'the beautiful Marble Hill Estate', while a second advertisement on the same page for the sale of the contents of the lodge refers to 'Marble Hill Recreation Ground' (Anon 1917, 4 col A & B).

From 1914 there is better evidence that organized sport was being played at Marble Hill and it is mentioned in both fixture lists and match reports (Anon 1914a, b & c). Various sports reports can be read throughout the years leading up to the Second World War. Games played include football, rugby, hockey and tennis. Tennis was the only sport with a sufficient physical footprint to be depicted by the Ordnance Survey and the 1939 map shows two clay tennis courts at the north-western corner of the Great Field, slightly to the west of the current courts and picked up by the earthwork survey as scarp [144].

Despite the popularity of Marble Hill and the gradual establishment of sport in the park the site has consistently been referred to as Marble Hill Park on all editions of Ordnance Survey maps. This can be contrasted with Orleans Park immediately to the west where the grounds were also used for sport including tennis and bowling but here this is reflected on the Ordnance Survey mapping from 1940 which names the site as 'Orleans Park (Sports Ground)'.

The River

Public access to the park also provided a new point from which the River Thames could be accessed. In 1906 swimming clubs in the Thames Valley wanted the LCC to arrange for a proper bathing place at Marble Hill (Anon 1906). Although nothing came of it, this appeal and the new public access to the river at this point suggests that the river was increasingly being enjoyed from the grounds of Marble Hill. In 1915 Eileen Lee swam from Tower Bridge as far as Marble Hill. From there the 19 year old waited for the tide to turn by Hammerton's Ferry before continuing on the return leg of her swim. Reported under the headline 'Lady's Record Swim' she covered a total distance of 21 miles (Anon 1915).

in September 1916 a regatta was held to commemorate the resolution of the legal wrangling over the rights to operate a ferry at Marble Hill the year before (see above). The event was open to licensed Thames watermen, lightermen and apprentices who competed for challenge cups for sculling, punting and swimming. All three were won by one man, Bert Lee of Twickenham (Anon 1916). It is not known if Eileen and Bert were related, but their shared surname and impressive sporting prowess suggests so.

The Second World War and after

With the exception of the tennis courts, it is not clear from the Ordnance Survey maps or aerial photographs where any of the pre-Second World War sports fields were located. The earliest aerial photographs of the site from which any detail can be discerned were taken in 1942 and only show the south edge of the park. Located on the lower part of the Pleasure Grounds were two closely spaced football pitches aligned east-west (see Figure 28 above). The positioning of football pitches at this location between the house and the river does give the impression that they were laid-out to compensate for the loss of pitches to allotments elsewhere in the park.

The earliest photographs showing the whole park were taken in 1944. By this date East and West Meadow were given over to allotments (see above). In addition to the football pitches south of the house, the Great Field to the north was also used for sport. Only the upper terrace of the Pleasure Grounds remained solely as lawn.

The seasonal nature of sport means that different photographs may only show evidence of summer or winter sports. The September 1942 photos clearly show the two football pitches south of the house while the August 1944 photos show what are thought to be four cricket squares arranged across the Great Field. The clay tennis courts are also visible as are four grass courts arranged in pairs to the south. Because of the continued use of the East and West Meadow for allotments until the 1950s we may speculate that the layout of sports grounds during the late 1940s and early 1950s reflects the wartime arrangement and additional pitches to those seen on the wartime photos have been identified. In March 1946 a hockey pitch is clearly marked out in the north-west corner of the Great Field immediately to the east of the tennis courts (Figure 33). The most complete picture is derived from photographs taken in May 1947. This shows two football pitches on the Pleasure Ground and three hockey pitches on the Great Field. Interspersed with these, but not overlapping, are six cricket squares, and to the west were the clay and grass tennis courts.

By 1954 the allotments and meadow had been abandoned and four football pitches had been laid out in East Meadow. These and the arrangement of hockey pitches to the north can be seen on all of the air photographs taken during the winter (i.e. the football and hockey seasons) until the 1970s and with minor changes continues today. The arrangement was remarkably static with some pitches being marked up year after year. Aerial photographs taken in 2010 and 2013 reveal cropmarks in the grass of the hockey pitches one of which, if not abandoned before, had fallen out of use by the mid-1990s as between 1992 and 1997 the hard tennis courts were rebuilt slightly to the east of their original position and cut across the north-western hockey pitch. The aerial photographs taken during the summer months show five or six cricket squares interspersed with the hockey fields.

Although rugby was played at Marble Hill before the Second World War no rugby pitches are seen on the photos until 1980 when two can be seen in West Meadow, where they remain today. Prior to 1980 little appears in West Meadow. There are two exceptions in 1954 (Figure 34) and 1958, when an oval mark reminiscent of a running track can be seen. The 1958 example was not in exactly the same place and the mark was of a single line rather than a series of lanes. During the earthwork



Figure 33 - Sporting arrangements in 1946: two football pitches are south of the house by the river and a hockey pitch can be seen to the north of it, in the top left of the park (detail RAF 106G/UK 1271 5274 23-MAR-1946 Historic England RAF Photography)

survey this area was seen to be used for a local primary school's sports day and this area was set out as an oval running track using cones so the practice appears to survive to this day.

The increase in the number of football pitches (and possibly hockey pitches) after the removal of the allotments in the 1950s suggests that demand for sporting facilities at Marble Hill was greater than could be met during the war years. Contemporary accounts highlight the tension between the need to grow food and the importance of sport. One of the earliest is a report of a speech given by Field-Marshal Lord Cavan at the annual meeting of the National Playing Fields Association. In his speech he outlined the vital importance of sports fields in maintaining public health and morale, and his concern that they were being broken-up for allotments by local authorities under pressure to find land for food production (Anon 1940, 3 Col d). The issue was discussed in a July meeting of the National Playing Fields Association where it was stated that 'every inch of land available for recreation before the war would be needed for that purpose as soon as it could be got ready' (Anon 1945d, 7C). By October 1945 the LCC Parks Committee proposed that 50% of allotments should be surrendered by the end of 1946, the remainder by the end of 1947 'So that men and women demobilised from the Forces can get recreation' (Anon 1945e, 4 Col F).



Figure 34 - A pale oval mark seen in West Meadow in July 1954; a similar mark was seen in July 1958 (detail RAF 540/1365 14 20-JUL-1954 Historic England RAF Photography)

When Twickenham resident RAF Sergeant 'Jacko' Jackson was awarded the Victoria Cross in 1945 his wife was interviewed by the Daily Mirror. They had first met at Twickenham Town Hall as teenagers but she remembered first seeing him playing football at Marble Hill (Anon 1945, 5 Col C). This recollection illustrates the significant role Marble Hill played in the lives of many of the residents of Twickenham. Not just for those that played sport, but also for the large number of spectators that attended games, something that, based on observations elsewhere in England, declined as television became more popular through the 1950s (Potter 1962, 110-111). The park was used for a wide variety of events. During the First World War it was the site of the official enrolment of the 2nd Battalion Middlesex Volunteer Regiment (Anon 1916c, 6 Col E) as well as battalion parades (Anon 1918, 3 Col B). The end of the First World War was celebrated with a tea for more than 5,000 children at Marble Hill with sports and daylight fireworks (Anon 1919, 6 Col B). Other newspaper accounts hint at the popularity of Marble Hill for people's leisure time (Anon 1913, 3 Col A) and its use for a regatta (Anon 1916, 7 Col F).

The Second World War arrangement of Marble Hill park shows that a balance was maintained between recreation and food production; that relatively equal importance was given to people's love of playing sport and the benefits of keeping fit as well as the pressing need to increase domestic food production and the enthusiasm with which millions took up the call to Dig for Victory. It was intertwined with the Twickenham residents that kept allotments and for about ten years regularly visited to prepare the ground, sow and harvest their plots.

The analysis of the aerial photography highlights how extensive were the areas that were dug, hoed, mowed, rolled and levelled and so helps us to better understand Marble Hill Park's modern appearance.

An unidentified Second World War Installation

A feature of uncertain function has been identified on some wartime aerial photographs which had been removed by 1949. Its short lifespan and relatively quick removal after the war suggests it was associated with the conflict. It appears

to consist of a metalled surface, perhaps concrete, and measured 33m by 25m. The detail of the internal features is difficult to interpret but included four small probably square structures evenly spaced along the northern side, a small structure towards the south-west corner and another towards the south-east corner. These are not clear and are primarily identified by the shadows they cast. At the centre was another structure aligned north-south which measure 6m by 2m. There are lighter patches within the centre which although largely irregular in shape have some pattern suggesting a narrow central section aligned north-south with two narrow arms extending from each end forming a V shape. This patterning is reminiscent of drainage lines. Although some of these elements may suggest a wartime emergency water supply (EWS) built to provide a reservoir of water for fighting fires caused by air raids, there do not appear to be any retaining walls and no water has been seen at this location on the wartime photographs. Other possible interpretations such as a communal air raid shelter are equally unconvincing.



Figure 35 – Details from 1946 (left) and 1947 (right) aerial photographs showing the unidentified feature (RAF 106G/UK 1271 5274 23-MAR-1946 (left) and RAF CPE/UK/2112 5228 29-MAY-1947 (right) Historic England RAF Photography)

RESEARCH ELEMENTS

Aerial photographic and lidar survey and analysis

Edward Carpenter

Methodology

Vertical aerial photographs

The vertical photographs used in this project consist of prints and digital images. The earliest vertical aerial photographs in the Historic England collection were taken on 22 November 1940 (Figure 36). Marble Hill was photographed in other sorties flown by the RAF and the USAAF during the Second World War, and the RAF continued flying sorties across this area until 1962. After that date vertical photographs were taken by private aerial survey companies and the Ordnance Survey. Aerial surveys undertaken by private companies were for planning purposes and sorties during the 1960s have a variety of clients such as: 'Greater London Council', 'London Boroughs' and 'L.A.P. Heathrow'. The Ordnance Survey photographs were taken for map revisions and the most recent vertical prints held by Historic England were taken by the Ordnance Survey in 1997.

The digital vertical aerial photographs are taken by a variety of companies and images are supplied by Next Perspectives Aerial photography for Great Britain (APGB) or accessed online via providers such as Google Earth.

As they were principally taken for other purposes, these different vertical photographs were not necessarily taken at the best time for the identification of archaeological features. However, they recorded archaeological cropmarks and earthworks, old landscape features, and provided a view of the Second World War and post-war landscape.



Figure 36 - Detail of the earliest vertical photograph of Marble Hill held by Historic England. The image quality is poor and on the original print this detail is approximately 1.5cm across (RAF HLA/087 48 22-NOV-1940 © Historic England RAF Photography)

Vertical pictures are taken from cameras mounted in the aircraft facing straight down. Although, they appear similar to maps they are not accurately to scale across the entire frame. Before features can be transcribed from these images vertical photographs are rectified (see below).

Oblique aerial photographs

The Historic England archive also has a large collection of oblique aerial photographs. Oblique photographs are usually taken with a hand held camera from the side of the aircraft to show the landscape at an angle. Some obliques were taken by the RAF and these 'military obliques' were taken by fixed cameras mounted in the side of the aircraft. There are five of these for Marble Hill taken by an aircraft following the River Thames (Figure 37).

Most of Historic England's oblique aerial photographs were taken for archaeological purposes from a light aircraft with a handheld camera. Unfortunately Marble Hill is beneath the final approach to Heathrow Airport and air traffic restrictions mean there are no specialist oblique photographs of the area. An early commercial aerial photography company, Aerofilms, was operating when there were fewer flying restrictions but they do not appear to have photographed Marble Hill although they did cover other parts of London.

Lidar

Airborne laser scanning, more commonly known as lidar (light detection and ranging), is a relatively new tool for archaeological survey (Crutchley 2010). Lidar usually involves an aircraft-mounted pulsed laser beam, which scans the ground from side to side. The laser pulses bounce off the ground, and the features on it, and



Figure 37 - Military oblique of Marble Hill taken in 1949 (RAF 541/334 43 5-JUL-1949 © Historic England RAF Photography)

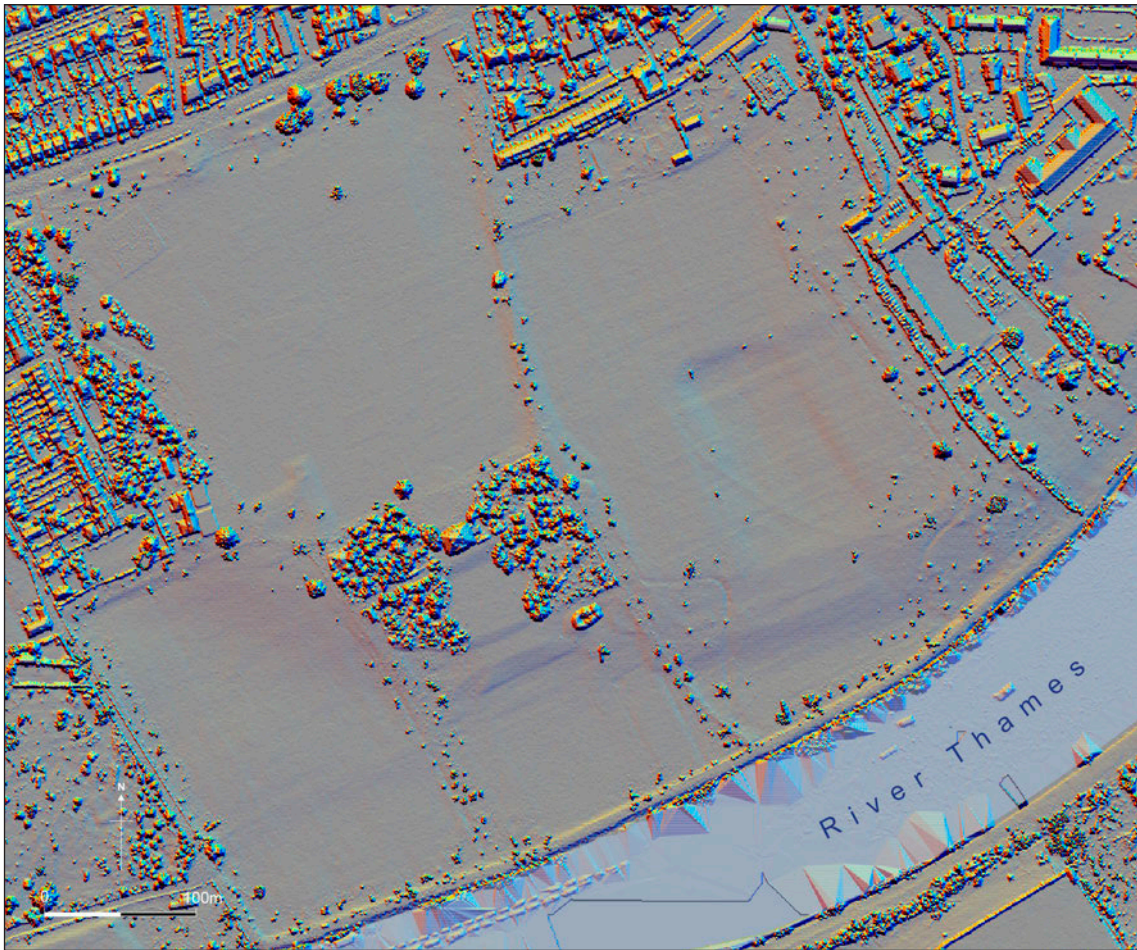


Figure 38 - Lidar image of Marble Hill; this visualisation has been 'lit' from multiple angles to maximise the detail that can be seen (LIDAR TQ 1773 Environment Agency LAST RETURN 2007 © Historic England).

the speed and intensity of the return signal is measured. 'First return' is the term used to describe the first beams to bounce back, whether they hit the ground, a rooftop or the tree canopy. Other beams will follow a path between the leaves and branches bouncing back from the ground within woodland (known as 'last return'). This information is processed to create a precise Digital Elevation Model (DEM) of the ground and the features on it.

The lidar imagery used for this project was supplied by the Environment Agency whose requirements differ from that of archaeological survey. The resulting Digital Elevation Models produced with the surface vegetation removed do not have the fine detail required to identify archaeological earthworks under trees. However, the lidar has been useful when looking at then extensive open areas of Marble Hill Park (Figure 38).

Analysing the images

All images were viewed and archaeological features identified. A stereoscope was used when viewing the vertical photographs to bring out three dimensional features. The project scope included the recording of all archaeological features visible on

aerial photographs and lidar, ranging in date from the Neolithic to the 20th century. These sites may be visible as cropmarks, earthworks or structures.

Rectifying images

Photographic prints showing archaeological features are digitised. They are then rectified and geo-referenced to the base map using the University of Bradford's AERIAL5 programme to an accuracy of 2m or less. Control information was taken from digital 1:2,500 Ordnance Survey Mastermap data. This gives an overall accuracy of plotted features to true ground position dependent on the accuracy of the Ordnance Survey map. A digital terrain model was used to compensate for undulating terrain. Lidar and the aerial photographs supplied by Landmark (APGB) were provided as geo-referenced images.

Mapping

Archaeological features were traced from rectified and geo-referenced photographs using AutoCAD Map. The mapped archaeological features were depicted on different layers based on the original form of the feature (bank, ditch, structure). Basic indexing information was attached to all drawn features and individual sites were delimited by a monument polygon. A unique number was attached to each site corresponding to the monument record in the Historic England National Record of the Historic Environment (NRHE).

Recording

Monument records were created or amended in the NRHE. Each record consists of a textual description of the feature linked to its indexed location, period, type of feature and the form of evidence. Where applicable the record will also include a cross reference to other monuments and datasets - such as the HER (Historic Environment Record). The record will also list the main aerial photographs or lidar and other sources for each feature.

Accessing the data

All data and documentation is archived in the Historic England archive and available on request from the Historic England Archive Services <https://historicengland.org.uk/images-books/archive/archive-services/>. The monument records created in the NRHE are also available via Pastscape www.pastscape.org.uk.

Results

The main output of the aerial photography and lidar work was the mapping of archaeological features and the addition and updating of NRHE records.

All mapped features had object data attached; this comprises the monument number, period, type, form, and photo/lidar reference.

The mapping resulted in the creation of 20 new and one updated NRHE records. The latter was the existing Marble Hill entry (NRHE 1142371) which was the best place to mention features thought to be associated with the original garden design (mainly ditches defining the Pleasure Ground), and to make reference to less significant features such as sports fields that did not warrant their own monument record. The new records were created as 'children' of the original Marble Hill record. A basic Event record was also created (NRHE 1604009) which encompassed all aspects of the fieldwork.



Figure 39 - Features recorded during the aerial photography and lidar mapping; red = positive features such as banks, green = negative features such as ditches, grey = cropmarks alone, blue = large features (outline or T-hachure), orange = other features (© Historic England, Modern Ordnance Survey background mapping: © Crown Copyright and database right 2017. All rights reserved. Ordnance Survey Licence number 100024900)

Analytical earthwork survey

Magnus Alexander

Methodology

The marginal and wooded areas of the park were surveyed using a Trimble 5600 Total Station Theodolite (TST) by taking radiating readings from each station. The core area surrounding the house was surveyed from a series of stations in sequence to form a closed loop or traverse with link traverses where necessary to fill in detail not visible from the main traverse stations. The traverse was based upon control established by GNSS (Global Navigation Satellite System, see below) and surveyed directly to Ordnance Survey National Grid based upon the National Grid Transformation OSTN02, adjusted for errors using proprietary software. Overall accuracy is comparable to GPS (below) at about +/- 0.02m horizontally and twice this vertically, though unlike GPS, decreases with length of traverse and distance between surveyor and station. The eastern part of the park was also surveyed as a traverse between points fixed by GPS rather than as a closed loop. The remainder was surveyed from pairs of GPS points with one acting as the station, the other as the back-sight and vice versa.

Across open areas detail was surveyed directly using Trimble R8 survey grade GNSS receivers working in Real Time Kinematic mode with differential data supplied by another R8 receiver configured as an on-site base station. The position of the base station had previously been adjusted to the National Grid Transformation OSTN02 via the Trimble VRS Now Network RTK delivery service. This uses the Ordnance Survey's GNSS correction network (OSNet) and gives a stated horizontal accuracy of 0.01-0.015m per point, vertical accuracy being about half as precise. On occasions a single receiver was used for lone survey but based upon the same data and with the same accuracy.

The survey data was downloaded into proprietary software to process the field codes and the data transferred into AutoCAD software for editing and plotting out for checking in the field. Corrections and some small areas of additional survey were undertaken by measuring in from known features using tapes. These were edited or added in AutoCAD.

Two main areas were not surveyed (shown as red on accompanying plans): i) that to the north-east principally comprised the main car park, adventure playground and the rangers' yard, as well as minor areas along the approach road and east of this, and ii) that to the north-west was the densely wooded area west of the approach road and the service areas around the stable block, including the raised areas to the east.

Land use

Across the site land use varied and this had an impact on survey, particularly affecting methods used (above) and visibility of features.

In general, buildings and surfaced areas (shown as grey on plans) such as roads, paths, and car parks were ignored, as were small areas isolated by them, such as the lawned circle in front of the main house. The mapping of these features has been based on the topographic survey undertaken for English Heritage (Greenhatch Group 2015). Occasionally though an underlying feature could be seen to run beneath a path or track or a prominent fall seemed significant and these were recorded.

The majority of the rest of the park was under short mown grass (plain on plans), much laid out as sports pitches including a cricket pitch, some rugby pitches and several football pitches including smaller five-a-side layouts. Although the short grass made it easy to see very slight features, the mowing created stripes in the grass that tended to 'take the eye' and in some places actually created features where repeated vehicle traverses on the same line had led to compression. In addition, these areas had clearly been levelled on many occasions so little could be made out and what could be seen frequently proved to be the result of the continuous repainting of the lines of former pitches; weekly repainting, particularly in the past with lime wash, builds up visible ridges. For these reasons it was difficult to be confident of many features in these areas and although some such features were recorded, only discrete features, or those clearly not related to sports pitches are shown.

Marginal areas of the park were typically rough grass (green on plans) and often wooded (tree trunks shown as brown dots). In these areas visibility was poorer than the open mowed areas, but preservation was usually better as there appeared to have been little or no levelling. Generally where the trees were denser or better established the ground cover was shorter and visibility was improved, though root heave sometimes made it difficult to identify or follow features. Again, the representation of these areas is largely based upon the topographic survey (Greenhatch Group 2015), but with additional survey of some paths that had been omitted.

Earthwork description

The park areas are described clockwise from the Pleasure Grounds around the house, followed by West Meadow, Sweet Walk and the majority of Great Lawn, Worple Way, the remainder of Great Lawn and the north of East Meadow, and finally Little Marble Hill and the south of East Meadow (see Figure 40). The following paragraphs are numbered to allow cross-referencing with the relevant plans; Figure 41 to Figure 45.

The Pleasure Ground

This area will be the focus of the redevelopment plans for the historic gardens within the park. At the time of the 1752 map it contained all the formal Pleasure Grounds directly associated with the house, apparently extended to the ENE by the time of the 1786 map. It has been assumed that the garden shown in about 1752 closely reflects that designed by Bridgeman in late 1724, The key elements of the layout in 1752 all lie within the northern half of the core area, the land purchased in early 1724 for the house, so this is probably reasonable, although there is no certain evidence for the layout of the garden prior to 1752.



Figure 40 – Reference plan and key to Figure 41 to Figure 45 on page 117 to page 125

As surveyed, this area ran from the surfaced track to the north of the house (with a few related features being picked up later) SSE to the park boundary along the towpath, and from an avenue of trees to the west to the track to the east of the house, with some survey beyond this; an approximately rectangular area almost 250m NNW-SSE by 190m WSW-ENE, though the survey of the core area extended up to a further 40m to the ENE to incorporate the extended areas shown on the 1786 map. The house sits centrally in the north of this area with woodland to the east and west divided centrally by: a turning circle to the north of the house (framed by wing-walls), the house itself, and a lawn to the SSE. A track running ENE to WSW along the south front of the house further divides these wooded areas north from south into four blocks. These blocks were densely wooded with much undergrowth and although considerable clearance work was undertaken by the grounds staff to facilitate survey, conditions were still difficult. Elsewhere, the ground was generally under short grass and even where there were trees earthwork visibility was still good. The main exception to this was the fenced off area around the black walnut (*Juglans nigra*) tree in the south-east of the survey area where there was rough grass. It was surveyed over two weeks in December 2015. During the survey the weather was generally overcast and low light levels were often problematic.

The substantial natural slope from the higher ground in the north down to the floodplain in the south (above) ran obliquely through this area on a slightly curving east to west alignment. It ran in from a little to the west of the north-west corner of the core area curving around from the north-west to run through and to the south of the south-west block of woodland and then west on a line to the south of the grotto and on to the north of the black walnut tree. Many of the most prominent features to the SSE of the house were clearly designed to formalise this fall creating stepped lawns and terraces down towards the river and managing their orientation so that the fall appeared to be perpendicular to the house. The SSW woodland block was directly affected by this fall; it was smaller and more irregularly shaped than the other blocks (which were relatively level) and the features within it clearly had to accommodate the fall.

North of the house:

1. (See Figure 42) The area immediately north of the house is largely under tarmac with curving wing walls embracing a semi-circular turning area around a featureless grass circle. This is approached by a track from the ENE, from Worple Way, and another from the WSW, from the stable block, though this runs on a line slightly to the NNW an alignment perhaps going back to the 1752 plan. Few features to the north of these could be surveyed. The only significant feature seen was the remains of the northern half of a fuller turning circle. This survived as a clear gully around most of the northern quadrant and as a curving, generally north-west facing scarp around much of the remainder of the arc, probably defining the outside of the circle. This feature was probably not original, it is not shown on the 1752 plan, and may have been added in the 19th century. A curving boundary is shown on the 1819 tithe map and on the 1846 Warren map but by the 1st edition 25 inch OS maps of the 1860s it appears reduced, by the 2nd editions of the 1890s it had gone and the area was close to its current form.

2. A gully about 3m wide and about 30m long ran parallel to the track approaching the house from the north-east. This appeared to be truncated by [1] so may have been an earlier feature such as a field boundary.

The north-west quarter:

Other than described below, most of this block was fairly level and although surface features survived they were faint and obscured by roots, tree boles and leaf litter so little could be made of them.

3. Within this quarter lay the icehouse which had apparently been built by 1727 when it was mentioned in Jonathan Swift's *Dialogue* (see Appendix 1). Externally this comprised a roughly circular mound up to 14.20m in diameter and 2.75m high (on its eastern side), with an entrance to the NNW approached by a fairly level path. The mound was slightly asymmetric being fuller and taller to the east than the west where it appeared to sit upon another feature [5], and to have been truncated [6]. The mound is heavily eroded at the summit, and to either side and over the entrance, no doubt by visitors climbing on it.
4. The icehouse mound appeared to have been built over a broad flat topped ridge that ran to the south-east decreasing in height from about 0.75m, petering out before it reached the fence. This comprised a low spur that sat upon an elevated area defined by a north-east facing scarp to the east. It is possible that this was the remains of a spoil heap from the construction of the icehouse, which would have been excavated to some depth. It could have been an earlier feature though; the east-facing scarp of the spur or ridge closely aligns with a scarp seen some way to the south [96] and both seem to run parallel to a ditch [96] to the west so it is possible that these are parts of the same linear feature, possibly related to the field boundary between Marble Hole Shot and Marble Hill Shot (LUC 2006, Figure 4.1). They could however be separate features, the underlying area pre-dating the smaller spur.
5. To the south-west of the icehouse mound there were also hints of an underlying raised area, perhaps part of the same elevated area defined by the underlying scarp to the east ([4] above).
6. The icehouse mound, ridge, and platform were all truncated to the south-west, probably by the construction of the tarmac track here, sometime in the 20th century, most probably in the post-war era as prior to this the track ran further to the west (see the 1940s OSs based on a survey of 1938).
7. In the same area a slight but well defined ridge ran parallel to the fence around the wooded block set back about 1.60m from it. This ran south from the area of truncation to the west of the icehouse mound and curved around reflecting the corner, petering out a few metres later. It seems most likely that this was a previous boundary to the wooded block and a boundary here is first shown on the OS maps of the mid-1930s.

8. Within the north of the quarter was what appeared to be a broad shallow WSW to ENE gully but there was a broad fall away to the north of the tarmac track running along the northern side of the wooded block so it is possible that the track had been constructed on a slight bank rising to the west and that the NNW facing scarp forming the south side of the apparent gully was in fact a separate feature. A faint scarp visible on open ground to the west (see [131] on Figure 43) suggests though that the former is perhaps more likely and that this feature originally extended further in this direction. The path to the icehouse appeared to have been laid over these features. The boundary between Marble Hill Shot and Plumbush Close ran through this area so it is possible that these features were related to this field boundary which probably dates back to the enclosures of the mid-17th century.
9. To the east was a west facing scarp south of the 'gully' and north of the path to the modern brick building that probably related to a service. There were hints that this continued to the south of the path but this was obscured by vegetation.
10. There was a slight north facing scarp in the south-east corner of the quarter that little sense could be made of.
11. To the south-west of this was a low, sub-rectangular mound with a ridge running off to the NNW clearly related to modern services.

The north-east quarter:

In contrast to the block of woodland north-west of the house, this block was lower and more uneven with denser vegetation so features were rather difficult to interpret. This was also the site of various service buildings, and their demolition and re-building over the years no doubt contributed to the rather fragmentary and disturbed nature of the remains here.

12. There was a general fall away from the house but this was irregular, obscured by vegetation and no coherent scarps could be identified. This was probably related to the demolition of service buildings here.
13. Similarly there was a broad mound immediately to the east of the north end of the eastern wing wall but again this was irregular and obscured and no clearly defined scarps could be surveyed. This may also have been related to demolition.
14. The general fall and mound were to some extent truncated by an open hollow area, not quite forming a coherent gully, which might have been the conflation of two features, separate scarps to east and west relating to broad spreads of demolition debris. The east facing western scarp was higher and extended further to the north where it met a north-east facing scarp running in from the south-east. These seemed to continue to the north of the fence where there was a fall to the east visible on the tarmac track.
15. The central area of the block was relatively level apart from a large rather irregular hollow, probably too large to be a tree bole.

16. A fall away from the track to the east was much clearer than the fall from the house to the west. In its central section this consisted of a well-defined WSW facing fall almost 0.50m high and 2.75m broad. This appeared to line up with a similar scarp in the block to the south-east [52]. It was presumably the result of levelling up for the track to the east to create an even fall.
17. To the north was a broad platform with a fairly straight west facing scarp that curved around to the south and east to face south. The relationship with [16] was uncertain; the platform could have been built up against the scarp or vice versa. This would appear to be the site of a building shown on the 1752 map and if so the latter seems more likely.
18. There was a pronounced fall away to the west visible on the track to the north of this but due to the modern surfacing it was not possible to determine if this was picking up the alignment of [17] or if the alignment of [16] further south was re-emerging.
19. A slight south facing scarp ran away from the base of this feature and to the north of this, where the ground was slightly higher, was a similar west facing scarp approximately at right angles to this though with only short lengths visible alignments are uncertain.
20. To the south there was another longer SSE facing scarp that ran towards hollow [15], with an ENE facing scarp at approximate right angles to the WNW. It is possible that all these scarps were related, probably demolition debris.
21. In the eastern corner of this block was a small oval mound sitting upon a fall of material that formed a fan shape within the right angled junction between scarps [16] and [29]. The mound and fan appeared to overlie the adjacent features and would appear to be secondary, perhaps a garden feature such as a base for a statue or a bench.

The cross avenue south of house:

22. A level tarmac track ran ENE to WSW along the south front of the house, and although clearly modern this had apparently been laid upon earlier features. A slight south facing scarp south of the track, the fall away from the modern surface, could be seen in the open area south of the house and obviously sat upon the terrace defined here by the much more substantial scarp down to the lawns below [23].
23. The SSE facing scarp down to the lawn was generally uniform, about 0.50m high (though the total height differential from the tarmac track surface to the lawn was nearer a metre) and ran parallel to the house front and track, except to east and west where there were breaks in its fall and signs of erosion from traffic following the wooded blocks, particularly to the ENE which was more open and accessible for the grounds staff's vehicles. It is possibly significant that the top of this scarp was almost 3m south of edge of the tarmac suggesting that the track was originally wider. This seems to be borne out by the 1752 plan.

24. The SSE facing scarp down from the tarmac track continued to the west within the wooded block, though here it appeared as two scarps with a break between, perhaps continuing the break mentioned above. The total fall decreased to the west presumably as the ground level rose there was less building up required to create a level track, and the break also increased in size. The top of these scarps was also about 3m south of the fence, continuing the line to the east.
25. To the north, there was a NNW facing scarp to the north of the track but this was slight, presumably because the ground level to the north was close to that of the track so only a small amount of makeup was needed. This started about 2m north of the track (see [23] above) suggesting that the track was also once wider on this side.
26. The SSE fall away from the tarmac track also continued to the east, within the wooded block, though here it was rather more complex and irregular in form and obscured by vegetation. There was a moderate, fairly straight lower scarp with a stronger scarp above that curved slightly to run on a line to the north of the scarps to the west for about 25m before curving southwards onto a line to the south and perhaps overlying the lower scarp.
27. At the far eastern end was a short section of more uniform scarp, possibly on an alignment with the scarps to the west ([23] and [24]), suggesting that the intervening, less regular scarps [26] may have been modified at some point. The relationship between this scarp and that falling away from the track to the east [52] was unclear due to dense vegetation but the northern end of [52] was rather irregular and may have been modified at some point, perhaps reflecting [21] to the north.
28. A fall in the tarmac track to the east suggests that the north-east-south-west track [22] was more significant than the track running to the south from this point.
29. To the north, in the woodland block north-east of the house, was a similar size fall NNW away from the track with breaks in some places and some minor irregularities, apparently caused by vegetation or animals, though the large scale variations seen to the south were not repeated here. The top of these scarps ran a few metres back from the fence, perhaps reflecting [25] to the west. To the west a substantial area of animal disturbance extended into this scarp disturbing it.

The upper lawn:

30. The upper lawn was level at 7.50mOD along its NNW edge falling evenly to 7.00mOD along its SSE edge. Given the general topography it seems likely that this levelling was achieved by cutting into the natural ground level and although the reduction in height would not have been great, across a large area must have generated a considerable amount of spoil, no doubt used elsewhere where the ground needed to be levelled up. The lawn was largely featureless apart from a fairly large hollow, probably a tree bole, and a few other smaller hollows, also

probably related to vegetation part from a few hollows, former tree boles and a slight ridge.

31. A slight ridge was surveyed on the upper lawn running SSE just to the east of the centreline of the house that continued to the south of [32] and aligned with a similarly slight gully further south again. This was probably a service.
32. Although not immediately apparent, the level area extended a few metres into the adjacent woodland, beyond the enclosing fences. Although there were scarps breaking the level lawn, these were clearly associated with the fencing. The former extent of the upper lawn was defined by a set of four banks/spurs:
 - a. That to the west was perhaps in the best condition and comprised a spur that ran SSW from [23] for over 20m, surviving to a maximum height of about 0.50m.
 - b. To the SSE of this was a bank also about 20m long orientated at a slightly obtuse angle to [a] and reflecting it about a line drawn centrally across the upper lawn parallel to track [22]. This was about 0.30m high along its north-east side but to the south-west the ground fell away, largely due to the natural topography, and the height here was nearer to 1.00m.
 - c. On the opposite side of the upper lawn what was originally probably another spur ran ESE away from [23] for over 20m. The south-west side measured about 0.40m high but the north-east side was very slight as the underlying ground level rose. This feature was irregular and considerably degraded compared to [a] with a break between it and [23]. A slight spur to the WNW may be related.
 - d. To the SSE of [c] and orientated at a slightly obtuse angle to it, was another bank approximately reflecting [c] and [b]. It was only about 12m long and narrower than the other banks and although at its maximum it was somewhat higher than [c] it was generally quite low. This was clearly the most degraded and appeared to have been damaged by both vegetation and animals, and had perhaps been deliberately reduced at some time. A clear east facing scarp ran south from the south end of the bank and may mark its former line.
33. To the south-east, the upper lawn was defined by a SSE facing slope that comprised a gentle scarp, likely to be from the erosion of a formerly sharper transition, above a steeper scarp, probably largely the original. At each end it curved slightly to the north, though this may have been due to erosion where foot and vehicle traffic followed the edges of the wooded blocks. It was a little over 0.50m high at the west end and a slightly lower to the east where the underlying topography rose. It would have mainly been created by cutting into the natural fall to the floodplain, apart from to the WSW where it must have been built up. It was not quite square to the house being orientated slightly more east to west than the house front but it was not clear if this was original and presumably due to the

effort of cutting back the ground, or the result of the subsequent changes. Given that the scarp to the south [55] was also slightly skewed in the same way, the former is more likely.

34. To the ENE a slight scarp ran parallel to the fence, apparently picking up the line of the bottom of [33] though this could simply have been due to traffic along the fence as it seemed to skirt some benches placed here.
35. Just within the south corner of the woodland block to the north-east of the upper lawn, at the end of [33], was a steep scarp that followed the fence line and which curved around a substantial holm oak (*Quercus ilex*) tree on a mound apparently of its own making. This was probably largely related to erosion by traffic around the block, though a similar but less prominent mound was seen within the woodland at the opposite end of [33] which was thought to be related to [32.b] so it is possible that this in part preserves a remnant of [32.d].

The south-west quarter

This quarter contained scarps [24] falling away from track [22] and the spur [32.a] and bank [32.b] defining the extent of the upper lawn already described above. The ground fell away noticeably to the south, largely the natural slope to the floodplain, affecting the overall shape of the block and many of the features described below.

36. Between spur [32.a] and bank [32.b] was a gap about 8m wide. A spur of relatively level ground extended about 22m south-west from this gap gradually narrowing from about 15m wide where it met the bank and spur, to a bluntly rounded tip about 5m across where there was a small oval mound with another smaller mound a little to the north-east (the latter was clearly a secondary feature related to vegetation). The spur was defined to the north-west by a single moderate scarp about 0.5m high and to the south by several shorter but steeper scarps totalling about 0.75m in height, the greater height on this side due to the natural fall of the ground. This was shown on the 1752 map as an extension of the upper lawn, probably a short walk.
37. To the south-west, beyond the end of the spur, was an oval mound about 10m across. The mound may have been situated on a platform or broad spur projecting beyond the natural slope and truncated to the south/south-west by traffic around the corner of the block, but it was unclear due to dense vegetation. The spur and the mound were separated by a narrow gully, the base of which fell away to north and south. It was unclear if the two features may originally have been joined, the gully perhaps excavated to allow the area to the north to drain or for a later path to run through. The 1752 plan suggests that this may have been the case. If so then the mound at the end of [36] may be related to this mound, perhaps a remnant of a larger raised area.
38. A few features were visible to the south of the spur and mound but they were not easy to trace due to fallen trees, tree boles and ground cover, apart from a fall to the fence that increased in size to the west where the natural slope steepened and it may have truncated a feature below mound [37].

39. To the north of spur [36] was a slightly sinuous south-east facing scarp that curved around to the south at its western end and ran into mound [37]. This appeared to define a gully north of the spur but it is perhaps more likely that the two features were unrelated, or at least only tangentially related, this scarp actually having more to do with the area to its north.
40. A second slighter, but more uniform scarp ran to the north of [39] but it was unclear what if any the role of either was as they could not be related to any mapped features. This latter scarp may have been early as it seemed to run beneath [32.a] to the east and possibly [41] to the west.
41. Running parallel to the south-west fence line, and about 4m from it, was a slight north-east facing scarp with hints of a second similar scarp immediately to its west. The scarp to the north [24] appeared to run into these scarps and may have been contemporary perhaps related to the edge of a cross path shown here on the 1752 plan.

The south-east quarter:

This quarter contained scarps [26] and [27] falling away from track [22] and degraded banks defining the extent of the upper lawn [32.c] and [32.d] described above.

42. Most of the northern half of this block, south of [25] and east of [32.c], was a rather chaotic jumble of irregular scarps, mounds and hollows and an extensive area of animal disturbance within an open area without large trees. This initially appeared to have some coherence and was thought to be the result of demolition (spreads of loose bricks could be seen in several places) perhaps with coherent features beneath, but discussions with site staff suggests that this was probably where waste was dumped and burnt, within living memory though not recently. The two options are not mutually exclusive however.
43. A small irregular mound to the south of scarp [44] seemed to be composed of similar material and was probably also a dump of waste of some sort.
44. To the south of area [42] a south facing scarp ran WSW-ENE. This was rather slight at its western end but steadily increased in size towards the east where it curved around slightly to the north before petering out. It ran on a slightly irregular line, probably the result of modern tree growth and the activity associated with [42] and [43], and may have originally been rather better defined and straighter. It is possible that this was the southern edge of the extension to the lawn shown on the 1752 plan, the equivalent of [36] to the west; there was a similar sized gap between the spur/bank to that seen on the other side of the lawn (about 8m) and this scarp broadly aligned with the north end of [32.d].
45. To the west of this, a WSW facing scarp ran SSE from the south end of [32.c] on a line a little to the east of the north end of [32.d], continuing for a few metres south of the line of [43]. Cutting across the line of any extension to the lawn here and having no obvious relationship to bank [32.d] it seems likely that this feature was later.

46. At the west end of [43] there was an east facing return to the south, perhaps exaggerated by an animal or vegetation hollow. It was unclear if this related to [45], perhaps forming a slight ridge, just possibly a small remnant of a path line.
47. Scarp [45], and perhaps [46], ended at a south facing scarp that seemed to cut across them suggesting it was later, though a tree growing here made this uncertain. Fallen trees obscured the continuation of this scarp to the east but a short was visible 3.50m to the west, and it probably continued beneath mound [43] and but perhaps not ridge [48] as no continuation was seen beyond it.
48. A low flat-topped ridge ran south-east from approximately the centre of [43] almost as far as the fence. This looked like a former path and may have originally led towards the entrance to the grotto. What appears to be a grassed walk is shown on the 1752 map in this location though this may have been rather broader and not on quite the same line so was perhaps a precursor to this later path.
49. At the east end of [48] the ground fell away somewhat and a SSE facing scarp ran away to the ENE.
50. To the west, a slighter scarp curved away northwards to face south, which appeared to pick up the line of scarp [49] to the east, though this was uncertain.
51. South of [50] a stronger scarp ran away to the WSW from a little to the north of the south end of [48]. It is possible that this was the actual continuation of [49] rather than [50] to the north. It is also possible that a slight fall away SSE from the fence to the WSW [34] was a continuation of this feature. If these features were all related it is just possible they mark the line of a ride shown on the 1724 design plan, not thought to have been implemented.
52. A south-west facing fall away from the track to the east ran along the north-east side of the block, increasing steadily in height from south-east to north-west. This appeared to align with [60] to the south-east and possibly [15]. It seems likely that this was related to the track which had presumably been built up to create an even fall. At its northern end however the line of this scarp deviated somewhat to the west and had possibly been modified, perhaps reflecting [21] to the north. Its relationship with [27] was unclear due to vegetation.

The terrace and west:

The terrace below the upper lawn extended to ENE and WSW to the south of the woodland blocks, though in these areas, out of sight of the house, it was sloping and less 'engineered', particularly to the west where the natural fall dominated.

53. The terrace to the south of [32] was largely featureless. In addition to the slight ridge of [31], a short, slight scarp was seen a little to the west of the centreline, perhaps related to the Italianate garden recorded here on 19th century maps. A rather longer, better defined scarp to the west again may also have been related but this was perhaps rather irregular.

54. The area to the south-west was also largely featureless with a general fall to the south, predominantly natural. Three slight scarps were visible here:
- a. To the north, running alongside the eroded track way and then curving slightly northwards to cross it, was a slight open scarp. Although not prominent it is possible that this marks the edge of a block of woodland shown on the 1752 plan.
 - b. West of this, a north-east facing scarp ran south-east aligned with fence on the south-west side of the wooded block to the north. It appeared to align with the east scarp of the spur projecting south-east from the ice house [4] some way to the north but it is unclear if they were related. It also ran parallel to boundary ditch [96]
 - c. South of [a] was a similar, though somewhat straighter scarp, running WSW-ENE on a similar alignment to the bottom of [32]. This appears to mark the northern side of the 'Ninepin Alley' shown on the 1752 plan. No other evidence for this, such as a levelled area, was seen.
55. The SSE facing scarp down to the lower lawn was a complex feature, apparently disturbed or remodelled to the west. A short well defined scarp ran along the top of the fall. To the east this curved slightly south running a little downslope. To the west it was unclear if it ran into [53] or continued south-west on a slightly different line. Below this upper scarp the ground fell more gently to two short, straight scarps separated by a short slightly more level step. To the east these lower scarps ran slightly uphill before they merged with the upper scarp to form a single fall. To the west they ran into a confused area though the lowest scarp continued straight for 5-10m before curving slightly northwards at a point approximately symmetrical with the merging seen at the other end.
56. At the south-western end of [55] was a rather confused area that these scarps ran into. There was no clear reflection of the fairly 'tidy' eastern end of [55]. This area contained a group of substantial tree hollows three or four of which had probably affected the earthworks here making any symmetry with the other end of the slope impossible to pick out.
57. To the south-west again was group of scarps possibly forming a sub-rectangular terrace cut into the natural slope though this was also somewhat disturbed. A south-east facing scarp ran away south-west from the south of this area.

The grotto area:

The grotto was filled in during the 18th century and only rediscovered and re-excavated in the 1980s. As such, earthworks in this area should be treated with caution as they may relate to this period rather than the original landscaping.

58. To the east was the grotto. Most of this could not be easily surveyed as it was obscured by vegetation. It had also been re-excavated in 1984 (GLHER

MLO19054) and remodelled so there was little benefit in a detailed survey, and it is unlikely that the relationships between the grotto and other surveyed features will be reliable, the hard detail had also been picked up during the topographic survey (Greenhatch Group 2015). Nevertheless a very broad low mound (about 20m diameter) was surveyed around it, no doubt of earth thrown up over the subterranean construction, though this could have been contemporary with the 1984 re-excavation.

59. To the north, short sections of scarps facing WSW and east appeared to define a low ridge that mound [58] lay upon. These ran into the woodland block and were lost after only a few metres so this is uncertain. The relationship with scarp [51] and possibly [34] was also uncertain although they appeared to overlie the ridge.
60. A large tree lay to the south-east of the grotto, on rising ground just above the lower lawn, which was surrounded by several curving scarps. Although it was possible that these related to the tree's growth they seemed rather far from it and not consistently aligned. It seems more likely that the tree had grown or been planted on an existing slightly raised platform though what this was for is uncertain. It is possible that this was the site of the second grotto thought to be situated somewhere in the park, what may be an above ground niche or arch that may fit the bill is shown in roughly this area on the 1752 plan.
61. To the south of the grotto, two straight scarps ran off to the south-east on a line well to the east of [59]. To the south they appeared to be overlain by one of the curving scarps [60] possibly pre-dating it.
62. To the east of [61] a south-west facing scarp ran parallel to it for a way curving around to the east at its southern end where it was lost in a tree hollow. It petered out to the north probably the result of erosion by traffic to the grotto entrance. A short counterscarp seemed to define a slight bank in its centre section.
63. A fairly uniform south-west facing slope fell away from the track to the east. This appeared to continue the line of [52] within the woodland to the north-west. It had no obvious relationships to other scarps in this area and was probably related to the track. A slight westward bulge was probably the result of traffic around the corner of the woodland block.
64. A south facing scarp to the west may also have been related to traffic between the woodland block and the grotto, or perhaps the result of erosion by traffic to the grotto entrance.
65. To the north of this was a broad fall to the west. This may have been related to path [48], continuing its line to the grotto entrance, or one of the sinuous paths shown in this area on the 1752 plan. It is also possible that with the east facing scarp of [59] and scarp [51] to the north it could have formed a large shallow hollow. It is even possible that it aligned with scarp [62] to the south and been part of a much larger feature.

The eastern boundary and extension of the pleasure ground:

The eastern boundary of the Pleasure Grounds were considerably more complex than the western. Even before the construction of the house it was significant with Worple Way running south from Richmond Road to the twelve foot way running parallel to the River Thames and about 100m north of it forming two locally important routes, with meadowland on the floodplain south of the twelve foot way. The northern part of the boundary was rather different in nature to the southern. This was probably due to the southern part being a later extension of the grounds, first shown on the 1786 Sauthier map as a belt of woodland running down the eastern boundary and dog-legging out to the east.

66. The existing tarmac track running along the east side of the wooded blocks and on to the gate leading onto the towpath did not appear to be related to any earthworks apart from a few very minor scarps in places. At its southern end, towards the bottom of the natural fall, there was a larger fall to the north-east allowing it to maintain a slightly elevated and level surface. South of this its alignment deviated to the east and the final 35m or so ran on a rising ramp with steadily increasing scarps on both sides. This was clearly modern and overlay several other features notably ditch [76].
67. To the east of the woodland blocks was a broad, relatively featureless linear area up to 17m wide. To the west this was defined by scarps within the woodland blocks already described ([16] and [52]), which steadily increased in height from south to north. The only features seen here were a scatter of vegetation hollows, some large enough to be tree boles, some rather smaller.
68. The southern part of [66] (about two-thirds of it) was defined on its east side by a shallow ditch about 3m wide. Although interrupted at one point this was probably the result of tree growth rather than being archeologically significant. It had a large number of vegetation hollows along its south-west edge; these were thought to suggest that a hedge might have been planted here.
69. North-east of this was a faint scarp roughly parallel to [68] creating a low bank. (Note that the slight scarp to the east of this was almost certainly related to the football pitch.)
70. At the north end of [69] was a small but definite height increase and the scarp (and bank) became rather better defined, hinting at a secondary feature apparently overlying [69] (which appeared to re-emerge to the north as [74]). At its southern end there was the slightest of suggestions that the alignment of [68] had been changed by [70], possibly pushed a little more north-west/south-east. At the northern end was a short westward return that appeared to run beneath the outer bank of [71] suggesting an earlier date.
71. Directly opposite the end of the cross walk [22] was a semi-circular platform that projected north-east of the line of [68] (and [72]) with a fairly steep outwards facing scarp with an encircling ditch and a slighter counterscarp creating a low

bank. There was also a rather irregular circular feature about 5m across centrally on the platform. The location of this feature suggests that it was a garden feature of some sort and its elevation would have allowed views across the slight valley to the east and Little Marble Hill beyond where there was a similar semi-circular feature, though this was not aligned on any obvious features. Ditch [68] had a slightly awkward relationship with this feature and the return scarp of [70] appeared to run under its outer bank so it is likely that this feature is later than both.

72. North of [71] a north-east facing scarp ran away to the north-west ending at a pair of large vegetation hollows and merging with more open scarps more clearly related to the track north towards the car park. At the southern end there was a slight hint of an inward facing scarp creating a shallow ditch similar to [68] to the south of [71], but overall this scarp seemed more clearly related to the latter and ran on a slightly different line to the former so may have been contemporary with [71]. The slight trace of a ditch though, and at the southern end where the lines would have been close, suggests that ditch [68] originally continued beneath [71], even if [72] was recut.
73. To the east of [72] was a fairly level area from which the ground fell away north-east in a broad, slightly irregular scarp with a clear break about halfway up. To the north-west the two scarps merged to form one, apparently rather eroded by vehicle traffic from the track across the front of the house out onto the sports pitches to the north-east. To the south the scarp turned to the SSE and appeared to reflect the alignment of features further to the south-east. The scarp may actually have been two separate features as to the south the upper part of the scarp appeared to curve away from the lower part suggesting a built up area (perhaps reflecting [70]).
74. The southern part of the lower scarp of [73] seemed to continue the line and scale of [69]. A section of bank to the north-east [?] also appeared to be on this line, perhaps hinting at an earlier feature.
75. On the level area between [72] and [73] was a short section of a broad gully apparently truncated by tree growth.
76. At its southern end ditch [68] appeared to turn to run due east for 50m before curving around to run due south, although where it ran down the steepest part of the natural slope only the western scarp was visible, the ditch once more becoming clearly visible on the level ground below (where it ran through the enclosure around the black walnut tree). This feature clearly reflected the dog legged extension to the grounds first seen on the 1786 map. Although this appeared to be a continuation of [68] it was generally slightly wider (4.0m), deeper and better defined. Given the history of the area it was felt that this was probably a later extension to [68] and not contemporary with it, though both were in use together for many years (a boundary on this line appears as late as the 1st edition OS maps of the 1860s).

- a. Note that the black walnut tree itself was located just on the inside of this ditch. It seems possible that it was originally deliberately planted on this boundary, perhaps as part of a hedge intended to produce nuts and only later taking on an ornamental role.
77. Along the northern east-west arm of [76] was an intermittent south facing counterscarp creating a slight bank. This petered out to the east, was broken by a tree hollow in the centre and had a gap in it to the west. This latter gap was apparently related to a slightly shallower section of ditch and suggested that a track had been pushed through the boundary here at some time.
 78. About half way along the same section of [76] the ditch was interrupted with only the southern side being visible and even this being lost completely for a time. The counterscarp [77] also ran away from the ditch slightly at this point. This appeared to be due to tree growth, but the 1st edition 25 inch OS maps of the 1860s show a rectangular building in this area and it is possible that this had been built partially over the ditch. No other evidence for this structure was seen so it may have been quite a light building such as a summer house or shed.
 79. To the west and south of the point at which ditch [76] curved away from ditch [68], was a rather irregular set of scarps all on similar alignments. From west to east these comprised: a very slight and intermittent north-east facing scarp that may have curved around at its northern end and steepened to run into; a clear south-west facing scarp about 35m long; a slight gully 25m long, extending about as far south as the scarp to the west; and a spur or bank extending about 15m south of the north end of the gully. It is unclear what these were, or if they were directly related to each other but it may be significant that the gully roughly lined up with the southern part of [68], before its alignment may have been displaced by [70]. These features may therefore be remnants of the eastern boundary of the Pleasure Grounds that pre-dated the east extension. It is possibly significant that they appear to be on the same alignment as [91] to the south, rather than, for example, [67] to the north, suggesting that the earlier landscape alignment was slightly different to that imposed by the Pleasure Ground, though this may be pushing the evidence too far.
 80. A SSE facing scarp to the south-east may have been the continuation of the twelve foot way seen as scarp [84] to the west. There was a short scarp suggesting that it had continued beyond [76] but this ended at a large tree bole. Geophysical survey suggests that its line beyond this was picked up by [218], despite the latter's apparent deviation to the south.
 81. The larger of features [78] above ended rather abruptly at roughly the same point which seemed to match some slight scarps on the other side of the modern tarmac path. This seemed to lie a few metres north of the line of the twelve foot way suggesting that they may have been associated with Worple Way, which ended at the twelve foot way, and pre-dated the house and Pleasure Ground.

82. To the south of this, on the western side of the tarmac path, was a prominent bulge defined by a scarp curving around from the west to the south before running into the natural slope (though possibly being lost beneath a tree and the path itself). This appeared to overlie ditch [91] so probably post-dated it. The upper (north-western) part of this featured seemed to be related to the site of what may have been a bench shown on the 1752 plan and the scarps visible today could be the remains of earthworks supporting a levelled area for this feature.
83. South of the corner of [76] was a broad, gentle scarp roughly parallel to [80]. This also seemed to continue to the east of [76], but as two scarps ([207]/[215]) so it is possible that these scarps had been eroded to appear as one. The building mentioned in [78] above had an enclosure curving around within the corner of [76] so it is possible that it was activity within this that affected this scarp.

The lower lawn:

84. Two faint WSW to ENE scarps crossed the north of the lower lawn on slightly different alignments, the northern one closer to south-west to north-east. To the south-west they merged then faded out but both seemed to align with a gap in the ditch that probably formed the boundary of the Pleasure Grounds [96]. This suggests that they may have marked route-ways, perhaps of different dates. The southern scarp aligned with a stronger scarp surveyed crossing the west meadow beyond the ditch apparently confirming this. It also seems to be shown on the 1752 plan. To the east both scarps rose onto the lower part of the natural slope, south of the grotto. The northern scarp seemed to run beneath scarps [60], possibly remerging beyond. The southern scarp seemed to peter out but could have merged with other features seen here.
85. To the south of the east end of [84] were several slight south facing scarps. The northernmost ran on a line parallel with [84] but several metres to the south of it and could have been related. This may have been interrupted about halfway along by a curving scarp defining a slight bulge though this could have been a deviation in its line. South of the south end of this scarp was another linear scarp that also ran into a slight bulge or deviated, in about the same place so the two may have been related.
86. To the east again was a rather better defined gully with a large sub-circular depression at its WSW end. This had no obvious relationships with surrounding features though it did run parallel to [87].
87. To the south of the central part of [84] was a slight gully running parallel to it. This may have continued intermittently to the west but disappeared to the east as [84] rose up the slope from the floodplain. This suggests it was topographically determined, and was perhaps for drainage or agricultural activity.
88. Some faint south facing scarps to the south of [87] may also have been related to agricultural activity.

89. At the east end of these scarps was a slight platform. It was very faint and the relationships with [88] to the west and [90] to the east were uncertain. It is possible though that the faint scarp thought to be a continuation of [90] was actually the east side of this platform.
90. On the east of the lower lawn was a broad shallow gully which could be traced 45m NNW to SSE. There were suggestions it continued to the south as far as the boundary of the park but only the north-east side could be traced this far. There were also hints that it continued north for 15m or more, but here only the south-west side could be traced and as noted above this may have been related to [89].
91. To the north-east of [90] was another parallel gully though this was broader and deeper. This certainly ran from the boundary of the park in the south, almost 70m to rising ground to the north. This was approximately on the same line as several features to the north but on a slightly different alignment. It seems likely that this was a field boundary within the enclosures on the floodplain of the Thames and that it probably pre-dated the laying out of the Pleasure Grounds.
92. In the centre south of the lower lawns was a series of irregular gullies and hollows. These were very wet and appeared to be related to drainage and possibly other services.
93. In the south-west corner of the lower lawn was a rectangular platform apparently aligned with the park boundary.
94. To the south-west was a north facing scarp running roughly parallel to the park boundary though turning slightly north at its eastern end.
95. North of this a short rather irregular gully also ran approximately parallel to the park boundary.

The western boundary of the pleasure ground

This was relatively straightforward on the lower ground and comprised a ditch with a counterscarp defining an outer bank with numerous tree hollows in between the standing trees suggesting avenues. A few of the features to the west of this may have been related to the boundary but not necessarily and will be described in The West Meadow below.

96. A long straight ditch, with a counterscarp creating a slight bank on the south-west side, ran NNW to SSE for over 150m along the south-west side of the Pleasure Ground. At its northern end it extended some way up the oblique natural slope from the floodplain, where the ditch became shallower and the counter scarp more prominent before running into other, probably later, features. At its southern end the ditch was better defined and extended as far as the park boundary. The counterscarp however, ran into [99] and to the south of this was less clear and consistent. The ditch was interrupted about halfway along, where there was also a slight weakening in the counterscarp possibly where a track passed through the boundary (see [84] and [100]).

97. To the north the scarp overlying [96] curved around from south-east facing to south-west facing and then ran straight north-west for about 25m, slightly uphill, before petering out. It was rather vague and did not seem to relate to any other features.
98. North of this ran a better defined scarp with a straight south-east facing side and another to the south-west. To the north this picked up the line of the tarmac track edge and possibly deviated slightly to the west, but to the south it may have been a rather older feature.
99. About 25 m north of the park boundary, on the outer side of [96] was an irregular platform up to 10m across. This may have been the site of a small rectangular building shown on the 1786 Sauthier map.

West Meadow

100. (See Figure 43) The SSE third of West Meadow was divided from the area to the north by two parallel SSE facing scarps running WSW to ENE across this area as far east as the boundary with the Pleasure Grounds (see [96] on Figure 42). The upper scarp could be traced about 10m further west than the lower and also had a slight counterscarp at its eastern end. It is highly likely that the 'twelve foot way' ran on approximately the line of these features as did field boundaries shown on maps of 1711 and 1786 and perhaps 1752. It is unclear exactly how the two scarps and the field boundary are related though the AP/lidar mapping and geophysics suggests that the track ran along the level area between the two with the scarps marking the line of field boundaries, perhaps the result of material accumulating against the upper boundary and being drawn away from the lower. Although the boundary would appear to have been removed by the time of the 1846 Warren map several trees are still shown growing on this line as late as the second edition OS maps of the 1890s.
 - a. A tree on this boundary is still shown on modern mapping, though it has clearly now gone. At the time of survey, this was marked by a substantial mound with a hollow in its centre. This was probably secondary growth, possibly self-seeded.
 - b. Other hollows to the west would appear to be from trees lost by the early 20th century so are perhaps more likely to be related to the earlier boundary. These suggests that this was on the line of the northern scarp, which as noted above also extended further west than the lower, and had a slight counterscarp at its eastern end.
101. South of [100], to the east, was a slight, ENE facing scarp that ran from the southern park boundary to about 7m south of [100], and about 7m from the boundary of the pleasure ground, though it ran at a slight angle to it being a little closer to the north. At its north end was a WSW facing scarp forming a shallow gully for a little way though this extended further to the north, as far as [100], and possibly beyond. It is difficult to be sure if this was directly related or a

coincidental alignment as the second scarp seemed to run at a slight angle across the first, perhaps truncating it, but only a short stretch was visible. The origin of the main scarp is uncertain; it appears not to be related to the sports pitches as it extends too far to the south, similarly with the allotments which seem to have also extended further to the east and nothing appears on the AP/lidar mapping or the geophysics. It was parallel to [106], so may be agricultural and of a similar date.

102. To the north of [100], a second WSW facing scarp appeared to pick up its general alignment but it was separated from it by almost 20m and there were several intervening features so this is uncertain. This scarp curved around to the west at its north end, picking up the natural fall of the slope above.

103. North of this a rather stronger south facing slope also ran along the natural fall, paralleling the north end of [102], petering out to the west as the larger fall dominated. To the east it appeared to run beneath the boundary of the Pleasure Grounds ([96] on Figure 42), but any evidence for it beyond this had been removed.

104. To the south, between [100] and [102], was a slightly oblique south-west facing scarp that did not appear to be related; its origin is unknown. A second west facing scarp lay to the west that perhaps aligned with the northern scarp mentioned in [101]. This curved around until it appeared to be a counter scarp to [100] but only short section followed this line. The origin of this scarp is also uncertain.

The ground to the south of [100] was about 0.5m lower than that to the north and on many editions of the OS maps marked as 'liable to flooding'. Only modern features were recorded on the AP/lidar mapping and nothing was noted by the geophysics survey, probably due to wet ground and silting from regular flooding. Several earthwork features were noted.

105. Most of the linear features recorded ran at approximate right angles to [100]. Two however did not, a WNW-ESE gully and a NNE facing scarp, and these appeared to run on similar alignments suggesting a distinct phase of activity, though they were only traced for short distances. This lack of visibility suggests that they may have been earlier than the other features recorded; they had perhaps been obscured by silting.

106. Between these two features a north-east facing scarp was recorded running across most of the lower area from the park boundary to 12m from [100]. To the east of this was a broad, shallow gully that petered out to the north and was obscured by the footpath to the south. Both were slightly sinuous (the former only at the southern end) and this also appeared to run parallel suggesting the two features were related. These features were slightly stronger than [105] perhaps suggesting a more recent origin. They also appeared to be on the same alignment as [101] and may be related.

107. To the west, roughly in the centre of the lower area, was a broad but low mound around a hollow, all that remained of another tree which survived as late as [a] above. Given underlying scarp [108] it could have originated on a field boundary, either as a hedge remnant or self-seeded, but may have just been a random survival.
108. This overlay two south-west facing scarps that ran roughly parallel to scarp [106] and may have been one feature, disturbed by [107]. To the north there was a hint of a slight counterscarp forming a very low bank.
109. To the SSE [108] probably continued as far as the park boundary but was slightly misaligned and separated by a low spread of material to the south of which it formed a shallow gully so may have been a separate feature.
110. To the west was a north-east facing scarp on a similar alignment to scarps such as [108]/[109] and [106].
111. Tree bole [107] appeared to overlie a SSE facing scarp but obscured its relationship with [108]. It seemed to abut [109] but only a short section was visible.
112. South-west of these features was what appeared to be a broad, curving gully on a slightly different alignment extending from the park boundary in the south, where the fall from the raised towpath apparently overlay it, to [100] in the north, though no clear relationship between the two could be identified. At its northern end the eastern scarp petered out before the western, which continued on a slightly different alignment so it is possible that the feature was more complex.
113. To the south, a south-west facing scarp ran between these two features and it was unclear if it related to [113] defining a gully or [113] defining a ridge, though it seemed more closely aligned on the latter. The question may be rather academic as the differences are subtle and these probably represent cultivation features subsequently eroded.
114. Along most of the south side of the park was a fall away from the fence into the park to the north. In most places this was clearly the bottom of the fall from the tow path beyond the park but in a few instances it appeared to have been the result of leaf build up against the fence extending this underlying scarp. This scarp overlay those within the park that extended this far south ([105], [109], [109], [112], [113]) and its line was picked up to the east as [94].
115. To the south-west of [112] was an east facing scarp on a similar alignment to it, though perhaps running slightly more north/south. Although it could have been a part of the general alignment of linear features across the southern part of West Meadow it may have been related to an earlier path around the edge of the park.

To the north of [100], the ground level rose along the south-west edge of the park. It was not clear if this was natural, though the limited information available does not

suggest that the land to the west of Orleans Road was as low as the area of the rugby pitches to the east, and the slope down to the floodplain to the north-east curved around to the north, which with this slope could have created a small tributary valley to the River Thames, now obscured by development. It may have been made ground levelled up to accommodate Orleans Road or its precursors (a track on this line is shown on the 1711 'scatch' and may have been earlier, allowing access to the twelve foot way and the river following enclosure of the open field in the mid-17th century) though in some places it was clear that the roadway overlay other features. The reality is probably a combination of the two plus a certain amount of cutting away at the base to level the area to the east for playing fields. The following features both defined and sat upon this overall rise.

116. At the south-west end of [100] was a fair sized mound that appeared to overlie it, though it was obscured by a substantial holly tree and was higher than the roadway outside the park which rose to the west, obliquely relative to the line of the road, apparently reflecting the underlying topography. It reflects the end of what appears to be a walk along the edge of the park shown on the 1752 maps which perhaps therefore ended with a light elevation, perhaps enhancing views of the river.

117. To the south of this were some slight scarps that appeared to be related to modern paths and erosion. However a quarter-circular enclosure with regular planting within is shown here on the 1752 maps so some may relate to this.

118. A long, narrow ridge ran away to the north-west of mound [116], just within the modern park boundary. It was much more prominent to the south where it approached [116] and the underlying ground appears to be lower (above) but appeared to continue along most of this side of the park to the north. To the south, the relationship with [116] was uncertain due to tree growth but the mound may have overlain the ridge suggesting an earlier date for the latter. In places the park boundary appeared to have truncated on the west steepening this scarp. This fall towards the boundary petered out about 30m from the pedestrian gate in the north-west corner of the park, as the ground within the park rose relative to the road level. The east facing scarp also curved in somewhat suggesting this ridge may have pre-dated the modern boundary. A lane here appears to be of some antiquity (above) so it is possible that this ridge marks a field boundary of similar age but it may not have been as old as this, it could simply pre-date the modern park boundary and road.

- a. In its central area the ridge was rather broken up by other features such as vegetation hollows and tree boles for about 15m and the fall to the boundary could not be traced for about 30m.

119. To the south a broad but moderate ENE facing scarp ran away NNW from mound [116] to the east of [118] and on a more northerly alignment for perhaps 50m though to the south it was rather disturbed by the modern footpath along this side of the park and various tree hollows and to the north became very slight and petered out, perhaps due to levelling for sports pitches or allotments. This

may represent the woodland margin shown on the 1863-4 first edition OS maps and less clearly on the 1846 Warren map.

120. From about halfway along [119] a scarp ran off on a more north-westerly alignment that was clearly related to the modern path along this side of the park. This ran intermittently along the north-east side of this path for almost 100m varying in part as the underlying ground level rose and as other features cut across it. These included:
- a. A bulge to the south where an eroded, modern path diverged from the main path;
 - b. In the north, two broad scarps where the underlying ground rose in irregular steps. The southern of these may have been related to the disturbance noted in [118.a].
121. To the north-east of [120] was another broad, north-east facing scarp running quite straight NNW/SSE for about 65m. This increased slightly in height from south to north where it broadened before running into [122]. It did not appear to relate to any mapped features or any known from the geophysical or AP/lidar surveys (such as the wartime allotments) and had probably been created by post-war levelling operations to the east.
122. To the north, scarps [120] and [121] ran into a curving scarp that defined a broad and rather ill-defined projection north-east from the more general rise up to the road along this side of the park. It seems likely that this was a large, underlying feature as Orleans Road also rose noticeably in this area.
123. North, the modern eroded path dropped slightly after passing over [122] as it approached the pedestrian gate. Here there was a scarp to the west of the path falling towards it, where the path had cut into the broader fall from the road.
124. The northern part of West Meadow had clearly been levelled for sports pitches and prior to this by activity within the wartime allotments. As noted in several places above, this had affected earthworks around the edge of this area and within very few earthworks could be seen. In the centre though was an area of slight and irregular earthworks that could only be picked out in oblique light. A substantial tree survived here until well into the post-war period but the origins of these features may go back as far as the first gardens laid out in the 1720s; a feature is clearly shown here on the plans of about 1752 and the 1724 proposal plans also show several walks meeting in this area, clearly a focal point, though without an actual garden feature.
125. To the north, a tarmac path ran ENE from the pedestrian gate in the north-west corner of the West Meadow, parallel to the boundary with Southend House. A path on this line is first shown on the 1863-4 OS maps. Several scarps were clearly related to this path. A pronounced scarp fell away from its south side to the lower ground of West Meadow and to the west a second scarp fell towards

it from higher ground to the north; the path had clearly been terraced into what was predominantly a natural fall southwards. The path gradually lost elevation from the high ground to the east towards Orleans Road and the scarp south of the path terrace similarly lost height to the west. That to the north was generally more uniform. To the east as the ground rose the fall to the south became less pronounced and lost definition as the underlying ground level rose. It also became rather broken, partly because of tree growth and partly from erosion by foot and vehicle traffic cutting away from the path. Although a scarp could be traced along the south side of the path for some distance, it was clear that from south of the stable block this was related to the tarmac surfacing and camber of the path rather than anything structural.

126. To the immediate south of the fall from the path was a narrow, slight gully that ran parallel to it, petering out to east and west rather than having definite termini. This was thought to represent a service but actually runs along the edge of the Second World War allotments mapped by the AP/lidar survey.
127. A very similar gully to [126] was surveyed to the north-east, also running parallel to the tarmac path. This was thought to be part of the same service but turned out to be on a slightly different line. In this case though a service was revealed in the GPR data that picked up the line of this gully and continued south-west on a line a few metres to the south of [126].
- a. This service continued to the east where it was again picked up as a gully and by the geophysics.
128. Between the eastern half of this path and the stable block, on higher ground, two south-west facing scarps were visible with a probable third to the north-east that had been affected either by the construction of the stable block or the more recent creation of a terrace for the café. There were also hints of a fourth to the north-east again where the ground began to level out. Only 10-12m lengths of these were visible but they appeared to be quite regular in size and spacing, and defined terraces about 7m wide that ran along the natural slope down to the floodplain. At least one, the central, appeared to run beneath the footpath and there were hints that the other did too. It is possible that these were relatively early agricultural features as the two lower examples at least do not appear to respect the property boundaries relating to Montpellier Row, but this is uncertain. The third scarp may actually relate to a gate into the yard behind the stable though this fails to explain the two lower scarps.
129. South-east of the stables and south of [127] was an enclosed play area within which were several features (in addition to [127]) that may have been somewhat better preserved due to restricted traffic within the enclosure. The southern most of these as a moderate east facing scarp that had a tree growing in its centre that had pushed its alignment southwards here. To east and west were slight counterscarps creating shallow gullies and it seemed likely that originally this was a moderate and fairly straight gully. This appeared to align with the edge of the Second World War allotments and may be a direct equivalent to [126].

130. North of [129] was a parallel south facing scarp that may have been related, as a dark line visible on a 1946 AP (possibly a fence) seemed to run on this line.
131. To the east [130] deviated to the north a few metres short of the tree affecting [129], to run on an ENE/WSW alignment. Its WSW end had rather uncertain relationships with the surrounding scarps due to the tree noted above and the rest of this scarp was considerably slighter and appeared to align with the north side of the gully noted in the nearby woodland quarter, on the other side of the Ice House (see [8] on Figure 42), suggesting this may be an earlier feature truncated by the cross scarps, probably a field boundary pre-dating the house.
132. Beyond the tree was a second south facing scarp on a similar alignment to [130] though on a line slightly further north. The presence of the tree previously noted makes it difficult to determine the relationship between these scarps but it seems likely that [129], [130] and this all originated on the edge of the Second World War allotments.

The Sweet Walk and Great Lawn

Sweet Walk was laid out in the later 18th century by the Earl of Buckingham. It is first shown on Sauthier's 1786/7 map of 'The Manor of Isleworth-Sion' as a sinuous path within woodland running from the area of the current (later) stable yard around the west and north sides of Great Lawn. The vast majority of the earthworks recorded ran around the edges of the Great Lawn in the wooded areas and rough ground where they presumably survived because they had never been levelled for sports in contrast to the open area of the Great Lawn (below). It is also likely that there were always more features in these areas as to the south lay the Pleasure Grounds associated with the house, to the east the original approach to the house based on Worple Way and to the west and north the Sweet Walk, set out in the later 18th century.

133. (See Figure 44) The tarmac track crossing from the area of the Ice House towards the stables ran on a low causeway with slight scarps to north-east and south-west. These seemed to be stronger than might be expected from the surfacing and camber of the track alone, particularly to the south (compared to the section of tarmac path south of the café for example). There were also extremely faint hints of a continuation to the west, crossing the open grass area towards the stable block, though these were slight, vague and not surveyed. It is possible that a constructed route on this line might be relatively old; the 1786/7 map shows that the field boundaries here had been realigned, perhaps to allow direct access from the north-west corner of the Pleasure Grounds to the start of the Sweet Walk, located in the area of the later stable yard and it seems unlikely that the path did not extend across this area connecting it to the house and Pleasure Ground. A crossing from the Ice House to the Sweet Walk was mentioned in 1784 (Appendix 1), and a similar feature at Audley End, connecting the house with the 1780s Elysian Garden, was also surveyed but omitted from near contemporary maps (Alexander et al 2015, feature [24] on p78 and Figure 36).

134. Immediately to the north of [133], within the south-west corner of Great Lawn, was a large sub-rectangular area, significantly higher than the lawns but not raised relative to the largely natural ground level to the south of [133] (within the play area) suggesting that this was not a positive feature created by raising the ground level, but that the surrounding areas had been lowered, probably in the mid-19th century (see [135]). It appeared to be defined by:

- a. A moderate, well-defined, slightly curving scarp to the NNW with a hint of a slight counterscarp to the south;
- b. A slighter but also similarly well-defined, straight if slightly irregular scarp to the ENE. It is possible though that this scarp was significantly earlier and only the area to the NW had been levelled. There were signs that the southern part of [161] ran over this scarp and that hollow [137] might also be the result of erosion by traffic through this area. It is perhaps significant that the very faint northern part of [161], thought to be a field boundary, aligns with the bottom of this scarp.

135. At the NNE corner of [134] was a very substantial mound that projected well NNW of the line of [134.a] but only slightly ENE of [134.b]. It had a highly irregular top, apparently the result of the loss of a very large tree, and various gullies projecting from the central hollow suggested substantial roots heaved from the ground and/or rotted in situ. A tree in this location appears on the 1st edition 25 inch OS mapping of the 1860s but not the 2nd edition of the 1890s. If the supposition above is correct, that the surrounding area has been lowered leaving the high ground behind, then it is likely that the tree was an obstacle to the levelling operations which must have taken place at a time when it was a significant size, probably the mid-19th century if the tree was lost sometime between the 1860s and 1890s.

136. On the surface of raised area [134] was a broad gully running north-east/south-west defined by scarps to north-west and south-east, the latter being slightly stronger as the ground to the south-east was rather higher than to the north-west. This was suggestive of a track, or at least erosion by traffic and there were also hints that this may have continued over [134.b] suggesting that it may have post-dated that feature though it probably pre-dated the creation of the suggested track to Sweet Walk [133]. The most likely context is 18th century traffic between Plumbush to the north of the house and Marble Hold to the west, avoiding Mr Ashe's land to the north-west.

137. A scoop with a very faint counterscarp creating a slight encircling bank, at the north-east end of [136], is difficult to explain as did not seem to be related to it and may have been truncated by [134.b]. It is possible that it was also eroded by traffic, an earlier tree throw or a conflation of features.

Although the 1786/7 map may not be reliable in detail, it appears that much of the western arm of Sweet Walk lay in the area to the west of the road from the stable block to White Lodge gate. This was checked and a ridge in approximately the

expected location was seen but was not surveyed due to time constraints, density of vegetation and no plans to develop this area.

138. Part of the road probably followed the line of the Sweet Walk and this may explain some of its alignment;
- a. About 95 m NNW of the road into the stable yard the road curved slightly to the west. This may mark the point at which the Sweet Walk ran in from the south-west and the section to the south of this a new road created at the same time as the stable block was built in the mid-19th century.
 - b. The road probably then follows the line of the earlier walk for about 80m, which might explain its curve back to the north.
139. A little to the north-east of [138.a] was a curving west facing scarp which had clearly been affected by the modern path. As this curved westwards away from the path into rougher ground it formed a substantial gully traceable for at least 100m, though interrupted by the path to the tennis courts and a substantial tree bole. This gully (and scarp) almost certainly marked the edge of the woodland associated with the Sweet Walk which was still sufficiently well-defined to be recorded on 1st and 2nd edition OS maps. It is shown particularly clearly on the 1894 1:1056 London town plan.
140. South of the path to the tennis courts and between gully [139] and the road, the ground was somewhat raised and formed a low ridge. Although it is possible that this was simply the result of the gully and road to either side it was more prominent than elsewhere and as this was the area where the road may have followed the line of the walk it is possible that this was a genuine feature associated with the walk, perhaps a bank associated with the woodland boundary intended to enhance the division between the wooded walk and the open lawn.
141. To the east of this were several parallel scarps running NNW-SSE. To the west they appeared to form a low ridge, with the suggestion of a gully to the east but to the west seemed to form two distinct gullies. Given their limited extent it is difficult to be sure of their original form but it seems likely that they are agricultural in origin. This area was a separate field belonging to Mr Ash in 1752 so may well have remained in use as such for longer than other parts of the park. These features could not certainly be traced north of the path to the tennis courts but this may be because earlier courts had been positioned to the west of the current courts in the 1930s and '40s (OS maps and APs), and because the woodland boundary ([139] and [143]) ran north-east across this area.
142. The area north of the path to the tennis courts was dominated by a substantial gully running for about 30m roughly NNW-SSE on a very similar alignment to the scarps to the south [141] though not certainly aligning with any of them. To the south it became shallower as it approached the tennis court path and it is possible that may have continued beyond though the gully recorded here

was slighter and perhaps on a different line. To the north it broadened out and become less well defined. This gully is rather hard to explain but may have been originally rather more similar to the probable agricultural features to the south [141] perhaps both enlarged by traffic and overlain by the earlier tennis courts mentioned above.

143. To the north and west of this was a low, flat-topped ridge but this may be a conflation of two separate scarps. The eastern side aligned roughly with the east side of gully [142] but was perhaps not so well defined, though this could be because it was crossed obliquely by a modern path and there was a second slight north-east facing scarp to the east, possibly related as well as a faint trace of a south-west facing scarp east again suggestive of a continuation of [142]. The western side was truncated by a slope down to the roadway and ran under a low mound of material probably a later dump so could have been earlier; unfortunately the mound obscured its relationship with gully [139].
144. To the north-west of the tennis courts the line of [139], the woodland edge, was continued by a north-west facing scarp. Although this had a short southwards return at its south-west end this was related to a modern eroded path. It could also be traced in the base of [142]. The other side of the gully had largely been lost though there was a short section of slight scarp perhaps indicating its former line.
145. A west facing scarp ran to the west of this and may have been picking up the alignment of the south return of [144] suggesting an underlying feature, just possibly similar to [141]. To the north it turned to the east where it formed a slight gully with the fall away from the modern path [146] but this may be a conflation. Other than this, little could be said about it.
146. As mentioned there was a clear fall south from the modern tarmac path to the north of the tennis court. To the east this divided suggesting a former path line that perhaps went out of use when the cricket nets were set up. The relationships between [144], [145] and this featured were obscured by tree growth, which also seem to have affected the alignments of these features. A path on this line is first shown on the 1960 OS maps. There are other scarps associated with the modern tarmac path, notably:
- a. a ramp where it ran up onto mound [149];
 - b. a low ridge as it approached the road to the car park.
147. Overall the ground surface fell gently from the open Great Lawns towards White Lodge and the Richmond Road and this appeared to be natural. The area to the north of path [146] rose slightly toward the park boundary against this general fall creating a clear ridge, with a short steep fall to the north down to the park fence and pavement beyond though this height differential decreased to the east. In places this was interrupted by trees and tree boles and was sometimes rather disturbed by them. It seems possible that the ridge was the remnant of

a boundary created at the same time as the Sweet Walk to enhance its privacy with respect to Richmond Road, but it may be that levelling of the road for modern road traffic perhaps in the interwar years, or the tramway shown on the 3rd edition 25 inch OS maps of 1933, led to material being thrown up onto the margin of the park or the lowering of the pavement relative to the park perhaps exaggerating this feature.

148. North of the cricket nets and tarmac path was a faint gully, no doubt the continuation of [144] and [139]; the woodland margin. To the east this curved slightly to the south, ran beneath the tarmac path, curved around the SSE side of mound [149] and then seems to have run beneath the tarmac path itself though south facing scarps hint at its presence:

- a. immediately to the east of the path to the pedestrian entrance;
- b. about 25m further to the ENE where a short length was visible.

149. A slight, straight ridge ran to the north of gully [148] from about 20m east of the White Lodge entrance as far as mound [150] where it was lost, perhaps beneath the tarmac path. This was probably the line of a path shown on maps from the 1st edition 25 inch OS maps of the 1860s through to the late 1930s. This may have been the line of the original Sweet Walk but the 1786/7 map shows a rather more sinuous path.

150. Immediately to the south-west of the pedestrian entrance to the park roughly in the centre of the boundary with Richmond Road (which incidentally first appears on the 1912 OS maps) was a large circular mound over 30m in diameter and at least a metre high. It did not seem to have uniform scarps but appeared to be formed of a broad underlying mound with a smaller mound sitting upon this, slightly offset to the south-west, but this could be the result of later modifications and damage. The gully marking the edge of the Sweet Walk's enclosing wood belt ran over it indicating that the mound was earlier than the walk, though by how much is unknown. It does not appear on the 1752 plans which did show some other slopes as shaded areas and it is possible that the boundary with Mr Ash's land ran through the area of the mound suggesting that the mound post-dated these plans. If so then it is likely that the mound was created as part of the development of Sweet Walk and was intended to provide a viewing point from which to admire the house. The path in this area was very close to the edge of the tree belt and the house would have been visible through any trees.

151. To the west of the pedestrian entrance, a straight south-facing scarp ran on the rise towards the edge of the park and immediately below the associated ridge [147] on a line parallel to the park boundary. This appeared to be picking up the line of a scarp curving southwards to the west of the pedestrian entrance which in turn was probably picking up the line of the path immediately north of the gully marking the edge of the wood belt [148]. This would appear to be marking the northern, fenced, edge of a path shown on the 1860s 1st edition 25 inch OS maps, a continuation of [149] to the west but not appearing as a ridge

as here it was levelled into the slightly rising ground. It is unlikely this was the line of the original Sweet Walk which appears to have been rather more sinuous and probably ran to the south (see [153]) but it could have been the edge of the woodland depicted on the 1846 Warren map. A path on this line appears to have survived until at least 1938 (OS 4th edition).

152. The area to the south of this was dominated by a line of tree boles surrounded by spreads of material, apparently related. A slight bulge to the south of the current path suggested that the path may have been later so it is possible that the tree boles mark the edge of the wood belt associated with the Sweet Walk and that the later path was laid out to avoid what would have been mature trees.
153. The trees creating [152] appeared to have been planted over a low slightly curving ridge, which did not align with [151] or the path to the south, suggesting it was unrelated to either and may be a remnant of the original Sweet Walk.
154. To the south of the tarmac path and the road to the car park the ground fell away somewhat before rising again in two broad scarps to Great Lawn itself, creating a broad shallow gully, up to about 15m across, that ran from mound [150] in the west for 120m to the low area south-west of Beaufort Lodge where it lost definition (see [1162] on Figure 45). There were also hints that the gully may have extended beneath the mound and it seems likely that it pre-dated Sweet Walk. It is just possible that the low area east of White Lodge, between [143] and [145], could also be related. If so then it is likely that this is quite an early feature, possibly even pre-dating the enclosure of the open fields and could be the line of the medieval precursor to Richmond Road visible on the Glover map of 1635.
155. The floor of gully [154] was fairly level but contained several features none of which could be readily identified or dated.
 - a. A hollow area in the west, immediately opposite the pedestrian entrance, could be related to an eroded path visible here on wartime aerial photographs but could possibly be related to the access road laid out in the early 1900s in preparation for the abortive development plans for the park.
 - b. To the east of this was a low mound and spur but neither could be explained.
 - c. To the east again was a slight hollow. The 1894 OS town plan showed a pump in this area (possibly just to the north of the hollow) and it is possible that this was related, perhaps eroded by those using the pump.
 - d. East again were further unexplained scarps.
 - e. Much of the eastern half of gully [154] was taken up by a gully within the gully which also had a slight cross scarp and a low cross ridge within it. This may be a secondary feature as it seems to have truncated the lower

of the scarps defining the south side of gully [154]. Although in part the north side of the gully appeared to have been affected by the road to its north in general it was not closely aligned and probably pre-dated it. Other than this little can be said.

Note that a few further features relating to Sweet walk are described below.

The Great Lawn has been used for sports for many years. As such it has been levelled and subject to line painting which appears to create low ridges where repeated painting has built up material. Although there were faint but clear earthwork ridges in places, most were thought to relate to these earlier sports pitches rather than being archaeologically significant and so were not surveyed. Most were picked up by the AP/lidar mapping and geophysical surveys.

156. A shallow, straight gully ran SSE-NNW from a point almost directly in front of the house towards Richmond Road, ending about 75m south of the park boundary here. This was clearly a service as several access panels were visible. In the central section of this feature, where it ran closest to the artificial wicket, it was much more difficult to trace and only visible as a single scarp; it could have been levelled for the cricket pitch, or for an earlier sports pitch recorded in the AP/lidar mapping.

157. A WSW-ENE ridge to the immediate west of the south end of [156] was thought to relate to the line painting of sports pitches mentioned above and was only recorded as the most prominent example, which might require explanation at some point in the future. The geophysical data suggests that this was not the case though, and that it might be a trace of earlier agricultural activity.

158. A NNW-SSE ridge ran at right angles to [157] and into [156] at an oblique angle, though the relationship between the two was uncertain. To the north it appeared to align with a slight mound of material immediately to the north of the track to the stables and between the two the curving gully defining an extension to the turning circle in front of the house ([1]) was rather broken and perhaps truncated. It was not clear what this feature was but it may have been a service of some sort though nothing was recorded by the geophysics here.

159. To the north, a faint north-east facing scarp ran away from [156]. It is not known what this was and it does not relate to any known features.

160. To the NNE of this a slight scarp ran south towards the large tree here. It is not known what this was but it is possible that it related to a sports pitch to the west shown on aerial photographs.

161. To the west of these features was a very slight ENE facing scarp, with a short gap in its centre, though the two sections appeared to be on very slightly differing alignments. The southern section may have been a service; there were hints of its continuing southwards over the ENE side of [135]. The northern section would appear to align with the eastern boundary of Mr Ashe's land as shown on the

1752 plans so perhaps it preserves this field boundary. It also aligns with the base of [134.b] which may be preserving an earlier version of this boundary.

162. (See Figure 45) The continuation of Sweet Walk feature [147] above, though here there was no fall down to the park boundary as there was no difference in ground levels.
163. A scarp similar to [151] to the west that appeared to continue the line of this feature.
164. A line of trees similar to [152] also appears to have been planted immediately north of the road to the car park though these survive and were presumably planted later, although it is likely that they pre-date the road which has truncated the associated mounds and banks.
 - a. A short bank appeared to be related to [153] but was probably the result of root heave from two existing trees that happened to be aligned on it.
165. The trees of [164] appeared to overlie a low ridge and it is perhaps more likely that this marked the continuation of Sweet Walk ([153]).
 - a. It is possible that its line continued as a curving scarp (broken by an existing tree) running towards the gate at Beaufort Lodge though this is uncertain.
166. To the east was a moderate west facing scarp falling away from the path in front of Beaufort Lodge. Although it paralleled the modern path, to the south, it gradually decreased in height and curved slightly east so may have been related to an earlier version of it.
167. A low mound to the south appeared to have been truncated by the road and could have been a former flower bed or, perhaps more likely, a tree bole.
168. To the west a curving, south facing scarp may have been eroded by foot traffic around a low hanging tree though was more likely the result of root growth.
169. South of this a straight north-west facing scarp could be related to an unknown feature identified during the AP/lidar survey constructed during the Second World War and removed shortly afterwards, though the relationship was not close. It could also be a very eroded continuation of [154].

The house approach (Worple Way)

The earthworks to the east of Great Lawn were dominated by the original lane to the house which ran on the line of the earlier Worple Way, though both were overlaid by the modern road to the car park, and the path from the gate at Beaufort Lodge and track running south from this to the east of the house. South of the car park the ground level rose so that the track south from its south corner was running along a

pronounced ridge. This track meandered somewhat but the underlying scarps of the main ridge were much straighter.

A car park was first shown on the OS 25 inch maps of 1960 (surveyed in 1959) occupying approximately the western half of the current car park. At this time the access road ran on the existing line but did not turn westwards to the south of Beaufort lodge, instead running directly north to Richmond Road where there appears to have been a small yard or entrance area. The current road was probably laid out following the building of the lodge in the 1980s.

170. South, a scarp ran to the west of the path continuously for about 165m. This was related to the modern path, though its line deviated from it slightly to the north and near the south corner of the car park where it curved slightly away from it to accommodate a bench. About 17m south of this it ran onto what appeared to be an underlying scarp [172] and petered out about 20m later just before it reached a tree which may have obscured its continuation as [175].
171. Along the section where the modern tarmac path ran parallel to the road it appeared to overlie a low scarp which ran slightly obliquely to the path and seemed to reflect an earlier alignment. This was thought to relate to an earlier route here, perhaps even Worple Way itself though a road shown on 1950s/60s maps is probably more likely. The area in the north-east corner of the park was perhaps remodelled in the 1980s and prior to this the access road to the car park ran straight along the park boundary to the corner of the park.
172. At its southern end scarp [170] ran onto a broader, shallower scarp falling to the west that increased slightly in height as [170] petered out. To the south this ended rather abruptly at some modern trees. It is possible that this scarp aligned with [171] to the north though only a short section was visible, but if correct this suggests an earlier track, perhaps an incarnation of the lane to the house.
173. To the east another uniform scarp fell eastwards from the tarmac path. This extended for about 15m, slightly further south than [172], no doubt due to the lack of trees, but clearly reflecting it.
174. South of [172]/[173] scarps directly associated with the modern track fell away to east and west for 30m or so, that to the west apparently picking up the line of [170] to the north.
175. South of [174], to the west of the existing track, the ground fell away, initially with several breaks of slope though becoming more uniform further south. This fall appeared to run beneath the turning to the house and into the eastern edge of the woodland quarters (see [18], [16] and [52] on Figure 42), which clearly suggests that it pre-dated the house and gardens and so it probably represents the line of the earlier Worple Way rather than the later lane to the house.
176. The fall away to the east was less pronounced, less uniform and less closely aligned with the modern track than [175] to the west. Initially, the main element

was a moderate scarp that deviated from the eastern scarp of [174] running away from the slight scarp associated with the track, petering out after about 20m, at which point it was about 4.5m from it. In reality however it was probably continuing the line of [173] to the north and it was the modern track that was running away from this earlier straighter alignment. Taken together this and [173] (and perhaps [171]/[172]) seemed to represent the line of an earlier track that appeared to be broader (with a level top perhaps 4m wide) and straighter than the current tarmac track which meandered to avoid trees.

177. To the south of the south-west corner of the car park the general eastwards fall away from the track was interrupted by a low platform approximately 6m wide, the length was obscured by tree hollows. This was the site of shelter shown on 1960 OS maps, surveyed in 1959 and the platform was probably levelling for this structure.

178. To the north and west of the road to the car park, on the level part of Great Lawn, was a slight, north-east facing scarp. Although rather sinuous it was probably originally straighter (below). It is not known what this feature related to but it was probably agricultural.

179. To the north of [177] was a faint narrow gully, very likely a service. This would appear to have distorted [177] pushing part of its line to the east.

180. To the south of [177] was a similar but south-west facing scarp and it seems likely that this was also agricultural in origin. Although it is uncertain their slightly offset alignments suggests the possibility that this and [177] originally formed a gully. However, it is more likely that this scarp and other to the south mark the edge of agricultural activity within Plumbush or the edge of levelling operations following the abortive Cunard developments immediately prior to Marble Hill becoming a public park in the first years of the 20th century.

181. To the south was a further slight scarp that appeared to continue the line of [180], though separated from it by a tree, which probably originated in the same way.

- a. Further south again were other scarps on approximately the same line below the main fall away from the path but it is uncertain how these relate to the above.

182. To the east of the features associated with the path ([173], [174] and [177]) was a faint, east facing scarp that ran for 115m on a slightly curving line broadly parallel with them. It seemed similar to [181], though slighter, and was probably formed in the same way. To the south a slight ridge lay to the immediate east creating a gully between the two, perhaps suggesting it may have been a field boundary rather than agricultural. To the north it was lost beneath the probable levelling up for the car park [185], and to the south beneath [184] suggesting an earlier date.

183. To the south of this, in the area east of the turning to the house, the earthworks were rather confused and broken, apparently the result of vehicle traffic from the track to the west fanning out onto East Meadow further confused by vegetation hollows. Although scarps of [176] ran through this area they had clearly been damaged by vehicles.
184. To the east were a low mound and spur that could not be readily explained; they did not seem to be related to vehicle traffic. The former appeared to overlie [182] suggesting a later date, as perhaps did the spur though this was less clear.

East Meadow

185. The earthworks near the south-west corner of the car park (to the west of [185]) were rather confused with a low ridge, low mound and several breaks of slope. It was clear that both vehicle and foot traffic was heavy here and was no doubt at least partially responsible for this lack of clarity. Several tree hollows also suggest that vegetation growth may have been a factor.
186. Two south-east facing scarps ran along the south side of the car park and the south side of the path here. Both increased in height from east to west accommodating the slight rise of the ground to the north. It seems most likely that these scarps are the result of levelling up of the car park to accommodate the slight rise to Worple way but it is possible that they are earlier as they run on approximately the line of features associated with an enclosure associated with the former stables, as shown on the 1752 plans.
187. A tarmac path ran along the north edge of East Meadow, following the south side of the adventure playground, continuing the line of the path south of the car park ([185] above). This rose steadily from west to east and a scarp was recorded falling south from this path, increasing in height from west to east as the path rose, mirroring the rise seen to the south of the car park. In places, recent tree growth had distorted the line of this scarp, and to the east where it rose more markedly, it became more complex with breaks of slope and bulges suggestive of former trees. This scarp clearly related to the current path and appeared to accommodate a fall from something closer to the natural topography to the north (a broad shallow valley appears to have run centrally through this area towards the river) to the levelled meadow to the south, something most likely to date from the 20th century use of the park for civic amenity sports provision. It is possible though that some fall from north to south might be older; the boundary between the estate's productive gardens to the north and the open ground to the south lay on approximately this line (or perhaps a little to the south, see [189]). Work in the gardens, intensive manuring and so on, is likely to have raised the ground level or at least preserved it, whilst in the field it is more likely to have lowered it.
188. To the west, where the transition from the path to the meadow was absent or much reduced was a confused group of earthworks that did not form any coherent pattern. A low ridge ran to the south of the path for several metres and south of this was a broad, low mound apparently connected to the ridge. To the

west of this was a broad shallow hollow, apparently extending beneath the path, with a straight scarp to the south that may have originally defined a ridge around the hollow but did not obviously do so at survey. The overall impression was of disturbance (vehicle tracks were noted) with suggestions of vegetation hollows (there were numerous other examples along this side of East Meadow) and perhaps planting ridges/mounds but little sense could be made of this area.

189. South of [185], was a slight gully, the line of which appeared to be picked up as a low ridge to the east. During the survey the gully was thought to mark the line of a service and the ridge line painting of sports pitches but geophysical survey recorded a very slightly curving ditch feature [gpr7] running continuously through both, and possibly what at the time of survey appeared to be vehicle damage to the east. This feature was approximately on the line of the southern boundary of the kitchen garden and associated enclosures so may relate to this boundary. Nevertheless the ridge could still be pitch related as centre circles and penalty boxes to the south, also revealed by geophysics suggest a goal line in this area.
190. Running south from the west end of the ridge mentioned in [189] above was a small spur and scarp. This appeared to be closely aligned on a former sports pitch as revealed by geophysical survey.
191. Some similar short scarps to the east also seemed to relate to former pitches.
192. A stronger south-west facing scarp to the east ran on the same alignment for over 100m. This ran along the gap between two existing football pitches but may have related to an earlier pitch mapped during the AP/lidar survey or have been eroded by spectators.
193. Further east was a south-facing scarp that gradually petered out as it extended west into the modern football pitches suggesting that it may have been earlier than them. No hint of it was seen in the rough ground to the east. Little can be said of its origins or date.
194. Running along the east side of the northern part of East Meadow was a south-west facing scarp that clearly separated the levelled playing fields to the west from the much more uneven and somewhat higher ground to the east. Although variable and intermittent, it was clear that this feature primarily related to the levelling of the area to the west and that the lack of uniformity was the result of its relationship with other, earlier features.
195. Running from the area below [187] on the level ground of East Meadow was a low north-east facing scarp that ran on a curving line towards the ESE corner of the park. This was thought to relate to a track running from Worples Way, across East Meadow to Little Marble Hill by the earlier 19th century (below).
196. (See Figure 46) The central part of East Meadow was dominated by a substantial sub rectangular hollow measuring up to 147m NNW/SSE by perhaps

93m WSW/ENE. This was the focus of the coring which suggested that it was a former gravel pit. Stratigraphically it is likely that this was the oldest feature recorded in this area. It had a relatively level flat base that rose gently from about 5.5mOD in the north to 6.5m OD to the south. As the surrounding ground was falling from north to south the hollow was deepest in the north-west where the scarp fell a little over a metre and the maximum overall depth was just over 1.25m. The hollow was defined as follows:

- a. To the east was a single slightly irregular scarp with ill-defined transitions top and bottom. In the south this became more irregular and there were hints of a break in the slope here similar to [c] though much less clear due to rougher ground and overlying features. The relationship with [d] was also unclear.
- b. The northern side, together with the north-east and north-west corners was well-defined with a single steep uniform scarp though overlain by later features (below) that slightly obscured this.
- c. The western side was also quite well defined but this scarp had a distinct break about halfway up with the lower scarp being steeper than the upper. To the south these scarps appeared to curve away to the south-west and merge with the (semi?)-natural fall.
- d. The southern side of the feature was very slight as the floor rose very close to the level of the area to the south. The scarp along this side was broad but low, only rising approximately 0.25m over 5-6m. To east and west the relationships with the other defining scarps was unclear, in part because the scarps became longer and so less clear, but to the west it appeared that scarp [c] had been cut back from this, perhaps at a later date in order to open out this end of the hollow, and it is also possible that there had been some levelling of the area immediately to the south. The eastern end was less clear but there were hints of a similar relationship.

197. In the north-west corner of [196] there were hints of a ramp but this is a tentative suggestion as this impression may have been given by adjacent features ([200.c] below).

198. The area to the west of [196] had been levelled for a football pitch which, given the restricted space, is unlikely to have moved significantly since first set out. This levelling had clearly removed or diminished several features as they became visible or more prominent outside this area. It was defined by slight north-east facing scarps to:

- a. West (see Figure 41);
- b. and East.

199. To the east of [198.b] scarp [195] became visible as a low ridge that ran for

80m, crossing [196] on a north-west/south-east alignment before curving around to the north-east and ending in the rough ground in the south east of the park. As noted above this was almost certainly the line of the track that approached Little Marble Hill, first shown on early 19th century maps.

- a. A slight break and deviation in the south-west scarp might hint at the line of an earlier track otherwise lost to levelling activity but recorded by the AP/lidar mapping and geophysical surveys.

200. A group of three linear features crossed the north end of [196]. They were closer together and on a slightly different alignment to others further south and did not extend as far west possibly suggesting a different history. The only stratigraphic relationship was with [196] which they were clearly later than. They comprised:

- a. A slight scarp running along the top of [196.b], which extended east beyond it but to the west ran into the top of it and curved around with it. It was unclear if this should be regarded as a part of [196.b] extended to the east or related to the below, though the latter seems more likely.
- b. Perhaps 11m to the south, a similar scarp extended from the rough ground east of [196] (where a second similar scarp ran to the north of it for a short distance) and cut across its full width but did not extend west beyond it. This clearly did not conform to [196.b] at all but was parallel to [a] suggesting both were related. To the east it became rather broken and lost definition, possibly overlying a similar scarp on a slightly more northern line.
- c. About 10m to the south again a parallel gully ran from the rough ground to the east across the base of [196]. The southern scarp of the gully was the stronger and this extended up the west side of [196] where it curved slightly north. It is this scarp that suggested the ramp [197] above.

201. To the east scarp [200.b], or at least scarps associated with it, cut a large, spread, oval mound. Although clearly relatively early little can be said about this feature though it is possible it might be contemporary with [196].

- a. The mound was also overlain by scarps associated with the current eroded pathway along this side of the meadow.

202. To the east of the modern path mentioned above was a WSW facing scarp. This was similar to [194] to the north and may also have been the result of levelling to the west. It seemed to align with the western scarp of the ridge mentioned in [212] below which may suggest that this ridge was a conflation of two features.

203. To the south East Meadow was crossed by a sequence of quite regularly spaced (about every 25m), faint scarps that at times seemed to define shallow

gullies or low ridges. Single scarps were just as common, though they generally appeared as such in areas where it was more likely that levelling had taken place, such as to the east of, and within [196], so perhaps the gullies and/or ridges were more representative of their original form. They appeared to run WSW/ENE across most of the open area irrespective of other features. Some appeared to align with elements of pitch markings, particularly to the east of [198.b], but this may be coincidental as others clearly did not and most could be traced running across the slopes defining [196] where it is highly unlikely pitches had ever been marked out. These features ran on slightly different alignments to [200], were spaced further apart and extended further to the west so may have a different history. They clearly overlay [199], and were probably overlain by [198.b] suggesting a date sometime between the mid-19th and mid-20th centuries. From north to south:

- a. A SSE facing scarp ran from the worn track to the east into [196]. As it ran down [196.a] a counterscarp developed defining a very faint gully. The northern scarp petered out before reaching [196.c] but the southern continued right across the open area to the west as far as [198.a]. In this area it appeared to align with the centre line of the football pitch.
- b. A similar feature was recorded running parallel, about 30m to the south. This took the form of a gully from the track to the east running down into [196]. The northern scarp petered out about half way across it but the southern scarp again continued as far as [198.a], though it was visible as a gully again as it ran up [196.c]. The feature had no apparent relationship with the sports pitches.
- c. The southernmost of these features ran parallel to the above and perhaps 25m from it but was the most complex. It started as a SSE facing scarp running from the rough ground to the east but a counterscarp soon developed defining a slight gully. The northern scarp petered out as it ran down [196.a] but the southern scarp continued and again this continued almost as far as [198.a] where it appeared to be picking up the goal line of the football pitch here. From about half way across [196] a SSE facing counterscarp was traced that appeared to define a low, flat-topped ridge on a line immediately to the south of the gully to the east. This was rather irregular broadening where it ran over [199] and with a noticeable break at the top of [196.c] but also extended much of the way to [198.a]. It may not have been related to the scarp to the north as it was a bit different in character and possibly aligned differently (see [210] below) but this is uncertain.

204. (See Figure 41) The west end of [203.c] was apparently cut by a shallow NNW/SSE gully and adjacent ridge though their origin is not known.

- a. Another parallel scarp ran a few metres to the west, apparently truncating [203.c] and probably related to the above.

205. To the south, these features appeared to terminate at a NNW facing scarp that ran parallel to [203.c] and about 7m to its south. To the west, this petered out just before [69] and about the same distance from it as [198.a].
206. The east end of [205] was cut by a low, slightly sinuous, ENE facing scarp that extended as far south as [76], where it curved slightly westwards, and north to [203.c] but without any clear relationship with either.
207. (See Figure 45) About 15m to the east was another slightly stronger and more irregular scarp on a similar alignment that may have been related. To the north this appeared to have been affected by a large but shallow hollow, possibly a tree bole, and it was also disturbed by a more certain tree bole, a few metres south of this. To the south it appeared to run over [196.c] before curving west and running into [76], perhaps reflecting [206]. It is possible that this south-west return continued beyond [76] in a modified form as [83], possibly merging with [215].
208. East of [206] the line of [205] appeared to be picked up by a low, narrow ridge which although disturbed by [207] and the hollow mentioned, continued across [196.c] onto the floor of [196] almost as far as [199]. These features ([208] and [205]) appeared to align approximately with an area of meadow identified on APs from the 1940s.
209. To the south of the west part of [208] was a NNW facing scarp although as this was not quite parallel and appeared to be constrained by [206] and [207] it was probably related to these, not [208].
210. To the south of the east end of [203.c] was a SSE facing scarp that may have been picking up the line of its southernmost scarp to the east. This suggests that the scarp may not have been directly related to the gully and scarp to the north as it ran on a slightly different orientation, the apparent relationship perhaps being the result of distortion by levelling within [196].
211. To the immediate south of this was a low, narrow ridge similar to and approximately aligned on [208]. This also roughly matched the edge of the same 1940s meadow identified during the AP/lidar survey. It may though be more closely related to the nearby features outlined below.
212. To the north of the east end of [210]/[211] a low ridge ran away to the NNW. This may have been a conflation of two features however as the two scarps forming the ridge were not parallel and the western may align with [202] to the north and have been created by levelling to the west. To the east, in the narrow strip of land between the ridge and gully [230] were several slight ridges and/or gullies similar to those to the south ([213]), perhaps remnants of earlier horticultural activity associated with 18th century occupation on the site of Little Marble Hill.
213. There were also several gullies and scarps all running approximately parallel to one another and [210]/[211]. A substantial mound around an old hollow and

an existing tree obscured several relationships and they did not form a coherent picture. In places, particularly to the east of the tree mound they formed parallel ridges reminiscent of narrow rig and with other scarps formed a vaguely rectilinear pattern; they seemed to be horticultural. This area was within an enclosure associated with Little Marble Hill shown on the 1786/7 map (below) and these features may be from this date as other known maps show it to have been part of East Meadow. However, this enclosure did not appear to have been used as intensively as those to the east and south.

214. To the south of this a moderate scarp ran south-west/north-east (obliquely relative to the above) from the area south of the tree mound previously mentioned, where a counterscarp formed a short gully, as far as [199]. It appeared to truncate the corner of [196] slightly but may itself have been truncated by [199] suggesting that this also could be a relatively early feature though it was on a different alignment to the features described above.

The area to the immediate south of [196] and above the slope down to the flood plain was largely featureless and appeared to have been levelled as several features running into it from east and west rapidly petered out.

215. To the west, a straight south-east facing scarp ran from the top of [196.d] as far as [76]. As it approached this it ran close to, and parallel with [207] and it is possible that they both continued beyond [76] as [83], perhaps merged by later development. It is possible that this feature was continuing the line of [214].
216. A second shorter south-east facing scarp ran parallel to this about 10m to the south. This extended a similar distance to the north-east but stopped well short of [215] to the south-west though its line may have continued as a series of hollows, tree or shrub boles. However it did not certainly continue beyond [217] so it could have been related to the allotments.
217. In this area there was also a slight south-west facing scarp. This may have defined the western extent of [216] and appeared to align with the edge of 1940s allotments identified during the AP/lidar survey.
218. South of these features, and the apparently levelled area mentioned above, but generally above the point at which the fall to the floodplain steepened, was a broad but low SSE facing scarp that ran for over 100m from [76] into the area of earthworks associated with Little Marble Hill. Its south-west end was rather slighter than the rest and deviated somewhat to the south; this may be significant as the AP/lidar and geophysics results suggested underlying negative linear features ran along much of the base of this scarp, picking up the line of [80] beyond [76], apart from this anomalous section. It is possible that the scarp was distorted here by the 1940s allotments; this section ran parallel to the edge of a block identified during the AP/lidar survey. East of centre the scarp opened out noticeably for a way, probably due to erosion by traffic around the edge of rough ground to the east. Its line in the rough ground was rather unclear and may also have been pushed slightly north by erosion associated with a track here. It

possibly continued beyond [240.a] and appeared to merge with a scarp running above and parallel to [231], on a slightly more north-east line. Although rather distorted it seems likely that much of this scarp marks the north side of the former 12-foot way.

219. To the south, on the steeper ground, was a similar scarp that ran parallel with the central section of [218]. Its alignment took it steadily up the slope to the east and though fairly broad on the steep ground it reduced in height as the underlying gradient reduced. It ended at a scarp clearly associated with modern traffic along the edge of the rough ground and could not be traced beyond this, though the rough grass obscured slight features. It is likely that this marked the south side of the 12-foot way.
220. A break above the west end of [219] may be related to the secondary 're-enclosure' of this part of the park in the earlier 19th century.
221. South again was another rather more irregular, slightly curving scarp running approximately parallel to the above and so rising from west to east up the natural slope. It petered out to east and west and had no direct relationships with other features so little can be said of it other than that it was probably agricultural; it did not seem to be related to the allotments. A distortion in its line and break in its slope towards its east end could possibly be associated with [226] but this was uncertain.
222. South of this was another approximately parallel scarp that ran from a little short of the enclosure around the black walnut tree as far as [227]. This section was straighter and more regular than [221], apart from a short break where it crossed [226], and appeared to align with a division in the allotment plots shown on APs. As it crossed [227] it broadened out considerably, due to erosion, and could be traced continuing into the rough ground beyond. Here it once again narrowed and straightened but appeared to be on a line slightly to the south of that to the west, though the rough ground made this uncertain.
223. To the ENE of [221]/[222] was a scarp of a similar scale and alignment. It aligned with [221], perhaps a continuation of the same feature, but as the two were separated by over 60m, much of which was rough grass, this is speculative.
- a. The above might however be supported by a second scarp below this probably picking up the alignment of [222], though again this is speculative.
224. Scarp [223] appeared to be overlain by a slight south-west facing scarp running obliquely down the slope and out onto the level ground below where it appeared to form one side of a short, broad, flat bottomed gully, though there was a slight break between the two features. It seems likely that this marked the line of a track shown on the 1786/7 map though this is uncertain due to this map's scale, inaccuracy and rather broad-brush depiction of the landscape; the track's orientation is consistent but its line is shown some way to the east. That [223]

continued beneath [224] suggests that the former may well be an earlier feature associated with those to the west but [223.a] did not, indicating that this is more likely to relate to features to the east such as [235] or [236].

225. South of [222] were several scarps perhaps defining a WSW/ENE ridge with a gully to the south, though the southernmost scarp may not have been directly related to the ridge; it was slightly stronger and appeared to be a little more consistent. It is difficult to be sure as the features were slight, the ground rough and it had been disturbed by tree growth. These aligned with the southern edge of allotments identified during the AP/lidar survey and were probably related.
226. A low but clear ridge ran SSE/NNW across the low level area. At its SSE end it appeared to have been truncated by [225] and to the north it probably ran through [222], though this was less clear. It is also possible that it continued for a few metres northwards, though without being visible as a surface feature, as a break in [221] appeared to be aligned with it. The origin of this feature is unknown.
227. A track ran obliquely across this area. On the level ground this appeared to be defined by a slightly curving north-west facing scarp, perhaps the result of the ground being built up to counteract waterlogging. Where it ran up the natural slope from the floodplain was a fairly straight south-east facing scarp, clearly the result of erosion.

Little Marble Hill

The south-east corner of the park has been occupied by dwellings since before the construction of Marble Hill House. The 1711 'scatch' shows three buildings with associated enclosures, probably labelled as 'The hatters' (the text is difficult to read), occupying a rectangular area that did not extend very far to the north of the prominent kink in the park boundary 70m north-west of the river. The 1746 Rocque map shows three buildings in a similar arrangement plus another a little to the north-east with the whole group apparently labelled 'The Glass House' though later maps suggest that this only referred to the north-eastern building. Unfortunately both the draft and the final plans of about 1752 are damaged in this area and have few known points to allow accurate geo-referencing so it is difficult to be sure exactly what they show or to locate what can be made out. Again they appear to show several buildings in this area, some possibly the same as depicted on the earlier maps, with what may be a new enclosure to the west. This seems to have a building running along its north side and a grid of paths suggestive of a small productive garden.

The 1786/7 Sauthier map is the first to show extensive development along the whole north-east side of the park, from near the river to the kitchen garden. A broad strip of ground, covering an area either side of the current north-east park boundary, appears to have been divided up into sub-rectangular areas that are depicted rather differently to the meadow to the west suggesting more intensive use such as horticulture. There are no buildings in the eastern corner of the park at this time but

several are shown to the north, near the point at which the boundary turns north-east. This map also shows a track running obliquely across East Meadow from the north-east corner of the Pleasure Grounds to the towpath about 100m south-west of the corner of the park.

Although it is small scale and not particularly accurate in detail the 1819 Greenwood map shows a similar enclosed area to the earlier Sauthier map. It is the first to show a track crossing East Meadow from the area of the car park sweeping in towards a building approximately 50m WNW of the east corner of the park labelled as Marble Hill Cottage. It then shows the track turning to run parallel to the north-east park boundary passing several smaller buildings and ending at what are probably the buildings shown on the Sauthier map. Again, it is likely that the enclosure shown includes land both inside and outside the current park. The 1846 Warren map is larger and generally more accurate. It shows the park boundary on what looks to be the current line with buildings to the south (perhaps Marble Hill Cottage) and north as on the Sauthier map with hints of some small buildings against the new boundary. It also shows Meadowside immediately beyond the boundary though none of the buildings are named.

The first edition OS 25 inch map of 1863 gives a clearer picture of the later developments in this area. Overall it shows much the same picture as the Warren map with what looks like a substantial house to the south, with a bay overlooking the river and a long narrow projecting wing to the north-west (labelled as 'offices' on the 1873 deed plan). A path runs north-west through the narrow wooded strip with a double boundary to the park and ends at the building complex in the north. It shows that several of the buildings were glasshouses and the complex generally gives the appearance of being functional rather than domestic. The map also labels 'Meadowside' and is the first to name the southern building as 'Little Marblehill'. The 1873 deed plan shows the buildings of Little Marble Hill but labels them 'site of the house' suggesting demolition by this date but as the buildings are shown in some detail this must have occurred after the survey the deed plan is based upon. The 1893-4 2nd ?25 inch edition OS maps show the enclosure intact and wooded but without buildings. By the 1912 3rd edition OS maps the western boundary with the rest of the park had also been removed apart from a narrow strip running along the north-east side of the park boundary where it projects towards the north-east and the woodland appears rather more open.

228. (See Figure 45) The approach track has been described above ([195] and [199]). At the end of this, a scarp curved markedly north-east and the 1873 deed plan shows a small circular area here, presumably a turning area. The northern side of this was clearly visible as a curving north-west facing scarp.

229. To the south was a line of four tree hollows with a line of four standing trees continuing their alignment and it seems likely that these were planted to screen the gardens from the approach. A south-east facing scarp ran between these hollows/trees and continued to the west curving slightly to run almost parallel to [199]. It seems highly likely that this was also related to the approach.

230. A long, straight gully ran along of this side of the park for 175m and at the north end a south-west facing scarp continued its line for a further 25m. It is highly likely that this marked the boundary of Little Marble Hill's grounds.
- a. A little south of the midpoint of this feature it deviated to the south-west to form a semi-circular projection no doubt intended as a focal point and perhaps mirroring [71] on the opposite side of East Meadow. This appears in an exaggerated form on the 1819 Greenwood map suggesting an early 19th century origin.
 - b. Towards the north end this feature became broken and interrupted for some distance. Modern wheel ruts suggest that this was probably largely due to vehicle traffic crossing this feature here, perhaps over some length of time. There was though a substantial mound around an existing tree and a hollow suggestive of a tree bole complicating the pattern.
231. To the south, after a short break, the line of gully [230] was picked up for a short way by a very similar gully running directly north/south. As the terrain fell away it turned more to the SSW and ran obliquely down the slope for about 40m. Along this section it took the form of a terrace with a steep uphill (north-west) scarp that is shown on the 1860s 1st edition 25 inch OS maps. For a short distance a ridge ran along the south-east side of this feature, perhaps a trace of the boundary shown here on 19th century maps. At the time of survey a footpath ran along this feature but there is no evidence that this was the case in the past; it is likely to be simply making use of the earlier feature. From about half way along this feature a slight fall towards the main scarp creating a shallow gully could be traced but this was probably the result of relatively recent erosion.
232. A short, flat-topped ridge ran ENE from the break between [230] and [231] and may have overlain the gully if it had ever been continuous. This very probably marked the actual 19th century entrance to the grounds.
233. From the north-east end of [232] a similarly proportioned, low, flat-topped ridge ran north-west for about 160m. After about 100m though only a single south-west facing scarp carried on the previous alignment and then turned to run along the top of [230], though where it did so there was a slight misalignment perhaps caused by a tree. It continued as far as [230.b] where it ended, no doubt truncated by later activity but beyond this it could again be traced as a low but rather more irregular ridge with a stronger south-west facing scarp. This was clearly the path shown on the 1st edition 25 inch OS map which suggests:
- a. at a point about 100m along, a short ridge ran off slightly more to the NNW on an alignment possibly picked up by a short scarp 15m to the north. This may have been an earlier path line.
234. To the south of [231], soon after it turned to the west and the ground steepened, was an irregular, sub-rectangular platform with scarps falling away to south-west and south-east and suggestions of some terracing into the slope to the

north-east. This would appear to be the site of a circular building shown as 'S H' on the 1st edition 25-inch map, presumably a summer house (Oliver 2013, 296).

235. To the south a rather disturbed and irregular south-east facing scarp ran fairly straight for over 100m south-west from the east corner of the park. It would appear to align with [233.a] to the west, though interrupted by [237]. This would appear to be on the line of the southern boundary of the gardens associated with Little Marble Hill, the area to the south having been separate with a 'public footpath' running along it, according to the 1873 deed plan, on a line several metres to the south.
- a. About 1/3 of way along this scarp from the east park corner it was broken by the current track around the edge of the park crossing it diagonally.
 - b. Another 1/3 of the way along it were some complex mounds probably related to both extant and lost trees. These had probably grown out from planting along this boundary.
236. South-east of the south-west end of [235] was a second approximately parallel scarp that was rather confused in places. The boundaries shown on the 1st edition 25 inch OS maps and the 1873 deed plan were complicated in this area but it seems likely that this was related to one of these boundaries that together with [235] defined a narrow path from part of East Meadow to the west.
237. A square mound appeared to overlie the west end of [235] and perhaps [236]. This may have been created by cutting back the uphill slope as a rough scarp ran around this side of the mound but several tree or shrub boles and current growth make this rather uncertain, it could simply be related to vegetation growth and tree throws as [235.b], the apparent regularity being circumstantial. Nevertheless it was of a similar scale to [241] so could be related.
238. To the south-west of [236], on the other side of the worn path/track, was a broad rise towards the park boundary that ran beneath the shorter and more regular scarp that appeared to be directly related to the current boundary. This was somewhat irregular and on a slightly different alignment and probably related to an earlier version of the towpath. To the west the boundary dog-legged north and this scarp could be seen to continue on the same alignment beyond.
239. To the north-east of this was a short rather irregular north-west/south-east gully though with a short section visible in rough ground it was not possible to determine if this was a genuine negative feature or the conflation of surrounding positive features, though the scarps to north-east and south-west were rather different suggesting the latter.
240. To the west of these features was a WSW facing scarp. To north, it ran up the natural slope over [223.a] and into [223] where it formed a slight gully. To the south it had a faint counterscarp creating a slight ridge but this petered out to north and south. It may have run into [224] (the relationship was obscured by

the eroded track) which could explain the difference between this section of [224] and its slighter scarp to the north-west. This was similar in appearance to other scarps thought to define boundaries but was not supported by any map evidence and if scarp [223.a] was a continuation of [235] then [240] would appear to overlie them and so be relatively late.

- a. Two short gullies/hollows to the north might be vegetation hollows picking up the line of this possible boundary though this could be a circumstantial alignment.

241. To the north of [237] was a low, rectangular mound. This would appear to be associated with the furthest extent of Little Marble Hill's grounds in this direction but its form suggests it may have been a bed built up within the corner of the grounds rather than structural, the removal of containing boundaries and subsequent collapse perhaps the cause of its rather amorphous form. It was similar in shape and scale to [237] to the immediate south-east.
242. To the north-east was a relatively level rectangular area, both slightly terraced into the natural fall and built up from it, defined by surrounding scarps. Those to the north-west, north-east, and south-east were the clearest though generally appeared as part of surrounding features (such as [243] and [244]). The scarps to the south-west were less regular and slight scarps crossed part of the level area. The platform defined by these features measuring about 19m north-east/south-west and 12m north-west/south-east and was very probably the site of the house though this was not immediately obvious during survey. The irregularities that made this feature less obvious in the field were most probably related to the demolition of the house, or perhaps later activity.
243. To the north-west of this were two short clear gullies. It seems likely that these were robber trenches associated with wall foundations for a projecting extension to the house labelled as 'offices' on the 1873 deed plan.
244. To the north-east was a raised rectangular area. It seems likely that this was in part defined negatively by the lower house platform to the south-west, but to the south-east it projected beyond this line, apparently reflecting the line of a wall and the raised area may preserve a small yard north-east of the house. It is possible however that this is a remnant of an earlier feature; the 1786/7 map shows a rectangular feature here slightly differently to others in the vicinity suggesting a building or walled enclosure. It is possible that this feature continued beyond the current park boundary supporting this latter suggestion. Some minor scarps on this feature are probably associated with demolition or more recent activity.
245. South of these features was a low sub-rectangular area defined by a scarp falling away to the south-east with returns to the north-west at each end that appeared to have been slightly levelled up from the natural fall. An irregular line of slight features crossed the centre of this area on a north-east to south-west line perhaps continuing the line of this side of [242]. To the north-west of this was a

single very prominent circular mound and to the north of this were several much lower and more irregular mounds and other linear features. The proximity to the house suggests garden features such as a lawn with beds but there is little to be seen on 19th century maps and the encompassing sub-rectangular feature at least may correlate with features shown on the 1786/7 map. The single large mound is of uncertain origin but very different to surrounding features.

246. To the north of this were two straight scarps at approximately 45° to one another, one facing north-east the other south. The former would appear to align with a wall shown on 19th century maps. The latter does not align with earlier features and may mark a path line from the more public approach to a possible side gate. Less regular features between this and [245] may be garden, demolition or more recent features.

The grounds of little Marble Hill extended NNW in a narrow strip from the site of the house ([242]/[243]) defined by a gully along the western side [230] and the park boundary itself to the east. The only feature visible in most of this area was the low flat-topped ridge thought to mark a sinuous path or paths ([233]) suggesting that the primary use of this area was perhaps as a walk, perhaps in contrast to the grounds around the house itself.

247. Towards the north end of this narrow strip, approximately 150m NNW of the site of the 19th century house was what appeared to be a rectangular depression, aligned along the surrounding enclosure. This was defined by parallel scarps to south-west and north-east but both of these may have been associated with paths, the former probably a continuation of [233]. To the north was a low ridge with the suggestion of another rather more amorphous hollow to the north again and to the south there were hints of another ridge with to the south again a short gully running off to the SSE, perhaps a conflation of separate features as the western scarp aligned with [233.a] to the south so may be a path approaching this area. This was probably a formal garden area, possibly intended to provide a destination for perambulations from the house, though a greenhouse shown to the north-east on the 1873 deed plan suggests that it may have been productive.

248. About another 40m to the NNW was a south-west/north-east gully crossing the narrow strip of land associated with Little Marble Hill and aligning with the return to the north-east in the park boundary at this point. This almost certainly picked up the line of a boundary most clearly shown on the 1846 Warren map, though probably shown on the 1752 maps. On the former map it was shown with attached buildings to north and south and the fact that it was so clearly visible suggests both that it was a robber trench from a fairly substantial wall, and that the buildings to either side (which have left no clear signs) were less so. A part of the building to the south is shown on the 1873 deed plan as 'Conse' perhaps an abbreviation of 'conservatory' which would support this, though those to the north were labelled 'stables & coachhouse' so may have been more substantial.

The roughly square area to the north of this appears to have been a separate enclosure since at least the 1752 maps, though the SSW boundary is not shown on

the 1786/7 map and on a different line on the 1846 map so the history might be more complex. In any case this margin has been levelled by the relatively modern sports pitches so the earthworks can tell us little. The 1786/7 map shows buildings in the south and centre of the enclosure with what appear to be further subdivisions across the north-east half of the area, with the south-west half as open, part of East Meadow. By the 1846 map the buildings are confined to the south-east half of the area, the internal divisions have been rearranged and the south-west boundary reinstated. The first edition 6 inch OS map of 1869 and the 1973 deed plan show a similar arrangement but with only a single internal subdivision running south-west to north-east separating the south-east third containing the buildings from a larger enclosure to the north shown as a kitchen garden. The south-east area was labelled on the deed plan as a yard to the south-west (approached by a track across East Meadow to the south-west and presumably having a gate, though this was not shown) with stables to north and south and a coach house to the east.

249. (See inset to Figure 44) A substantial square topped mound occupied the eastern corner of this area but it was not possible to determine if this extended beyond the park boundary (as [244] may have done) or had been built up against it, though the latter seemed more likely. It had a break of slope about halfway up the north-west side though this did not appear to be significant. There was also a fairly large hollow to the immediate NNW that was probably too large to be a tree bole. The origin of these features is uncertain and no building is known to have occupied this area, perhaps it was a build-up of material from mucking out the stables here in the 19th century. However in the early 20th century the park boundary ran on a more north-east to south-west alignment on a line to the north of the current boundary and the mound may have originated in this period when this corner appears to have been a part of Meadowside, the adjacent property.
250. An irregular curving scarp to the west appeared to be defining a platform to the south. The 1846 map showed a building in this area and the scarp was probably related to this. A low mound about halfway along the scarp was probably demolition debris or some other dumped material.
251. To the west of this was a broad, low spread of material. This also appeared to mark the site of a building, the smaller of the stable buildings shown on the 1873 deed plan, and again it is likely that the mound was related to the building, perhaps a poorly levelled spread of demolition debris as it was rather amorphous.
252. To the south-west was a more substantial mound occupied by a large tree though the mound seemed too large to be simply the result of root heave. No building is known to have ever occupied this site but given the extent of demolition nearby it is possible that this is a dump of demolition debris from nearby work. To the south-west the ground fell away somewhat and here there was a low spur of material. It was unclear if this had built up against the larger mound and it was not certain if it overlay scarp [194], thought to relate to the levelling of the area to the west for sports pitches, or was truncated by it.

253. A WSW facing scarp running away north from this may be marking the line of the boundary shown from the 1846 map through to the 1873 deed plan. A second scarp to the west (below) this was very probably in part related to the levelling of the area to the west for sports pitches but had clearly been distorted where the two merged. A scarp to the east (above) could not be explained.
254. To the north-east of these was a rather confused area of short, slight and irregular scarps with some forming gullies, ridges and hollows. Some recent animal burrows (perhaps badgers) were also noted. Overall they were incoherent and although they may be related to the 19th century kitchen garden the 1786/7 map shows a building in roughly this area and these earthworks may be related to its demolition.
255. To the north-west of [253] was a series of more rectilinear scarps. That to the west could have been a continuation of [253] or [194] though the alignment with neither was exact. The scarp to the north may have been related to the modern path but could also have been a continuation of [187] to the west and been a potentially earlier feature. This may be supported by the scarp to the east which appeared to run beneath the modern path but over the south-east facing scarp to the west. Though no date could be ascribed to this feature it was probably stratigraphically later. The scarp to the south had no obvious relationships to other features and appeared to be a relatively modern service.

Figures (overleaf)



Figure 41 – Earthwork survey of the Pleasure Ground (1:1000@A3)

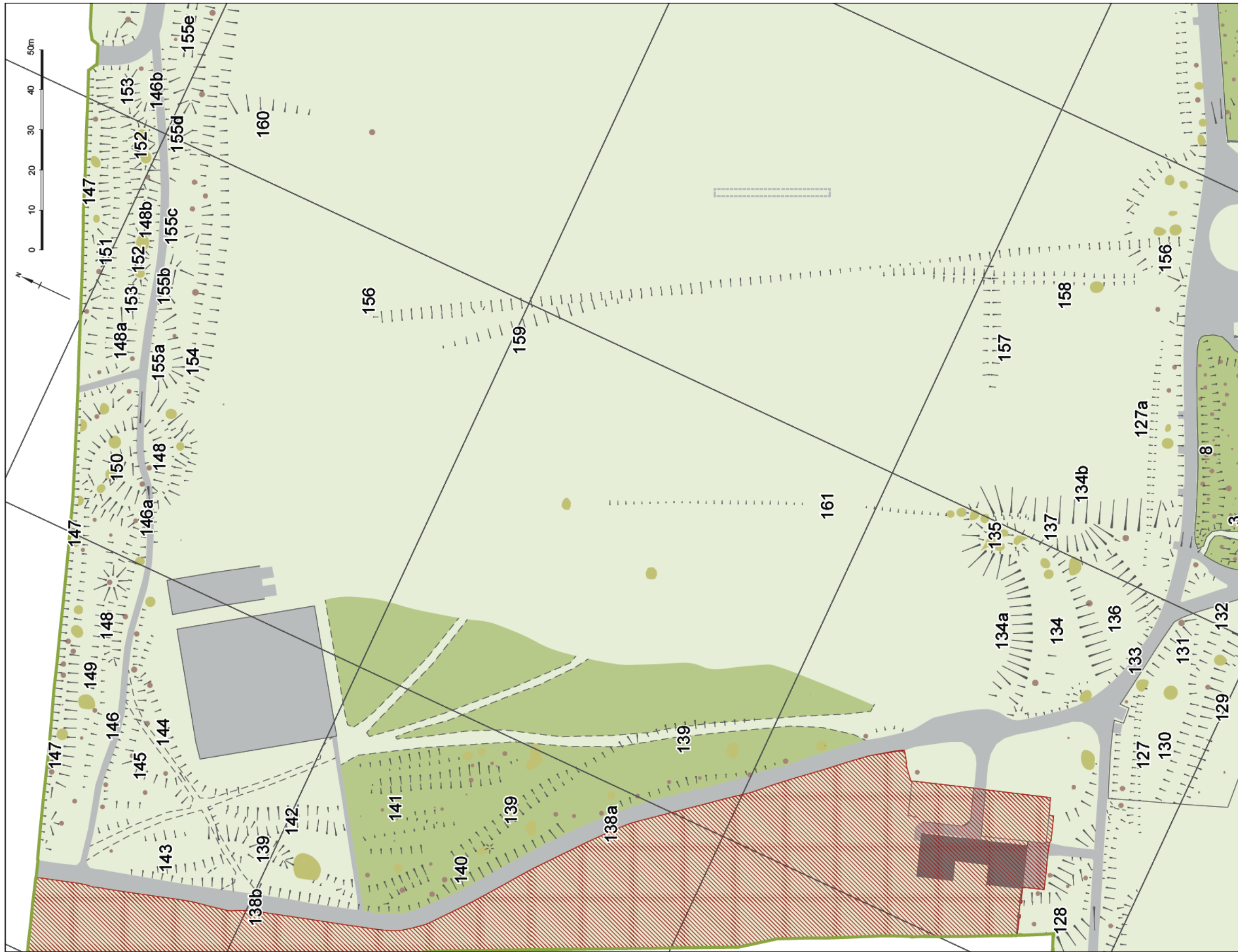


Figure 43 – Earthwork survey of Sweet Walk and Great Lawn (1:1000@A3)

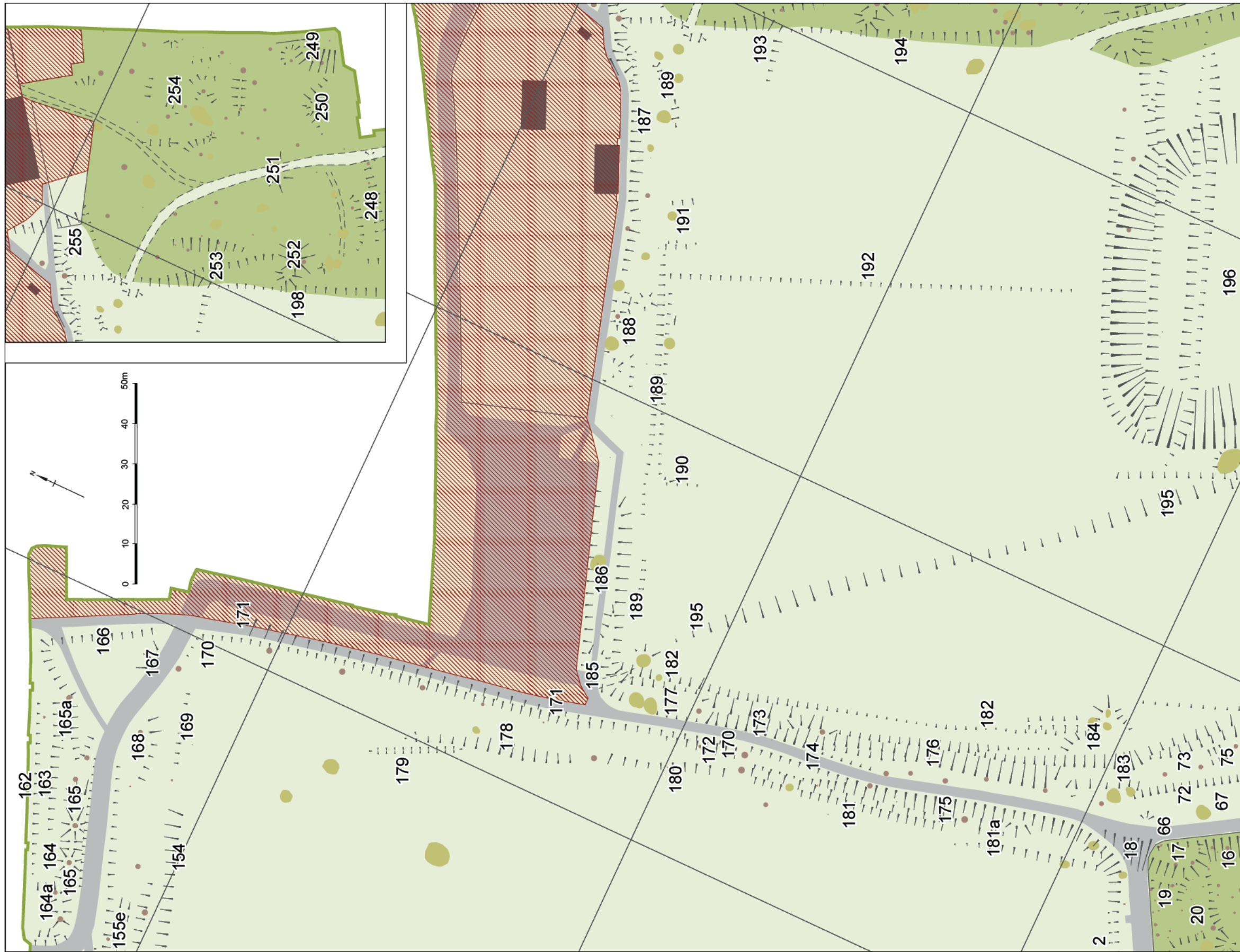


Figure 44 – Earthwork survey of ‘Worple Way’ and the north of East Meadow (inset is the area north of Little Marble Hill) (1:1000@A3)

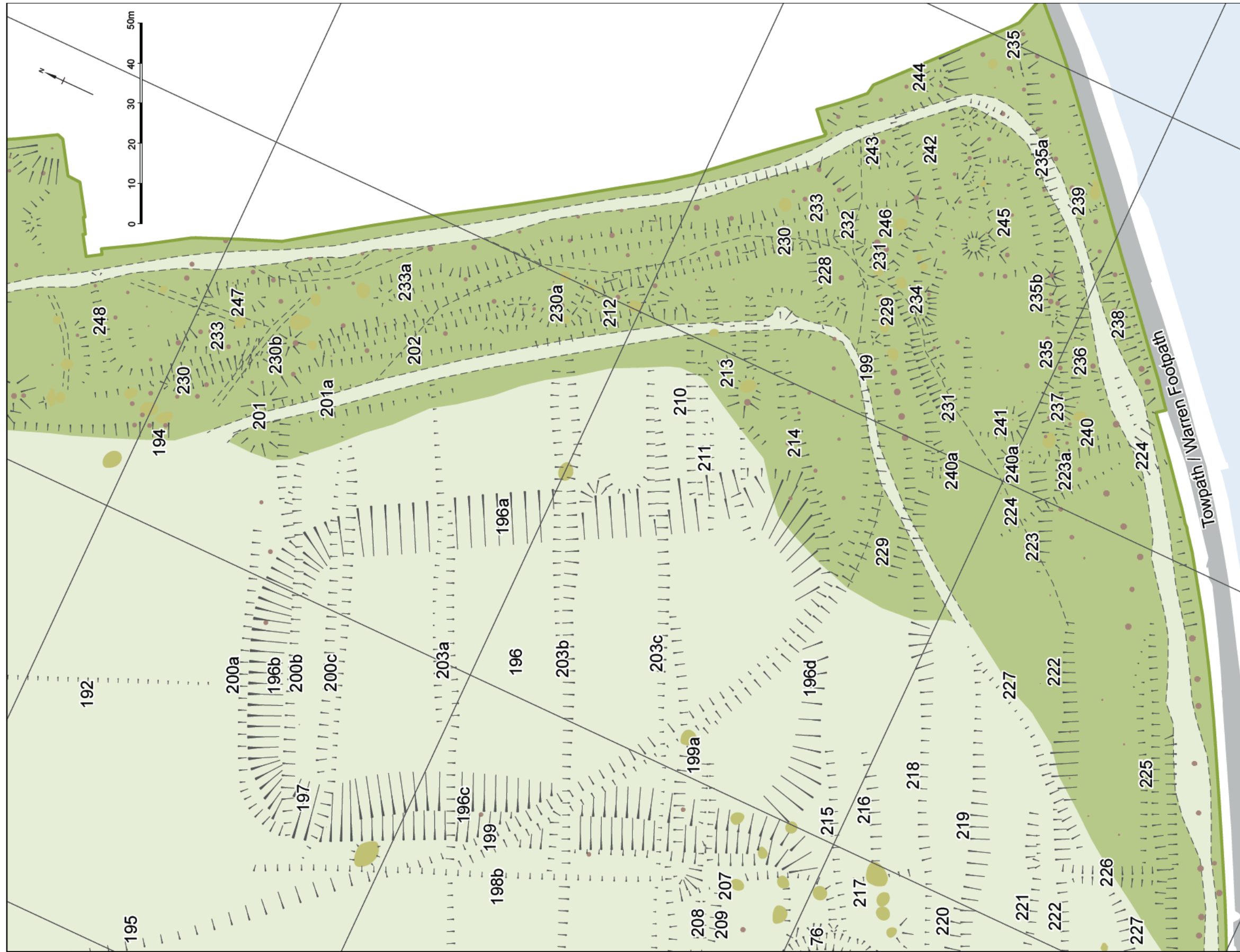


Figure 45 – Earthwork survey in the south of East Meadow and Little Marble Hill (1:1000@A3)

Coring

Matt Canti

Coring was carried out on the 15 December 2015 to determine the origin of the large, rectangular, sunken area to the east of the house. The cores (numbered 1, 2 and 3) were taken along a transect produced by extending the NE-SW line of the penalty box of the football pitch within the hollow (Figure 46).

The grid references for the three cores were:

- 1 = 517446.68, 173684.61, 7.26mOD
- 2 = 517490.64, 173708.20, 5.55mOD
- 3 = 517518.83, 173723.80, 6.19mOD

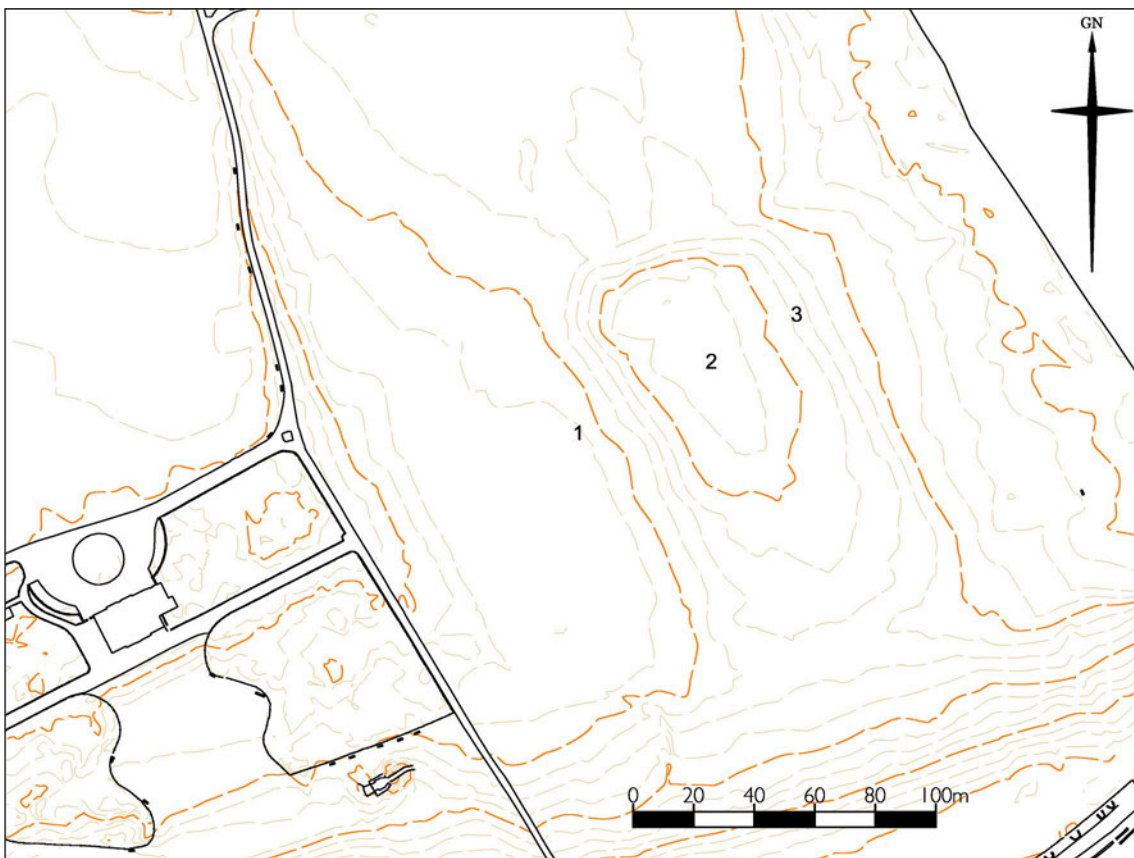


Figure 46 – Locations of the three cores (background mapping based on Greenhatch group 2015)

Methods

All sampling was carried out to 1 or 2 m below the present surface with an Eijkelkamp power auger. 10 cm diameter cores were mechanically driven in, and then extracted for field description; colour determination with a Munsell colour chart (Munsell Soil Color Charts (1971). Baltimore: Munsell Color Company Inc) and photography before being emptied back into the holes.

Results

Measurements are depths below surface at core location.

Core 1

South-western core. Elevated position above the sunken area.

0.00 – 0.62/0.70 m	Dark brown (7.5 YR 4/2) moist silt loam with no stones. 8 cm boundary to:-
0.62/0.70 - 1.00 m	Strong brown (7.5 YR 5/6) moist loamy sand with no stones.
1.00 – 1.12/1.16 m	Brown (7.5 YR 4/4) moist sand with 80%, angular and subangular stones, 2 – 15mm. 3 cm boundary to:-
1.12/1.16 – 2.00 m	Strong brown (7.5 YR 5/6) moist loamy sand with 80%, angular and subangular stones, 2 – 15mm.



Figure 47 - Core 1a 0.00m – 1.00m



Figure 48 - Core 1b 1.00m – 2.00m

Core 2

Central core. Low position in the hollow. Stopped by gravel; only 90 cm cored.

0.00 – 0.43/0.49 m	Dark brown (7.5 YR 4/2) moist silt loam with no stones. 6 cm boundary to:
0.43/0.49- 0.72/0.75 m	Brown (7.5 YR 4/4) moist sandy clay loam with no stones.
0.72/0.75 – 9.00 m	Strong brown (7.5 YR 5/6) moist sand with 70%, angular and subangular stones, 2 – 20mm.



Figure 49 - Core 2 0.00m – 1.00m

Core 3

North-eastern core. Low position in the hollow.

0.00 – 0.50/0.55 m	Dark brown (7.5 YR 4/2) moist silt loam with no stones. 5 cm boundary to:-
0.50/0.55 - 0.80/0.85 m	Brown (7.5 YR 4/4) moist sandy loam with no stones. 5 cm boundary to:-
0.80/0.85 – 1.00 m	Strong brown (7.5 YR 5/6) moist sand with 70%, angular and subangular stones, 2 – 20mm.



Figure 50 - Core 3 0.00m – 1.00m

Discussion

The results (Figure 51) show that the geology here comprises Brickearth over a river terrace, both Pleistocene. The upper level of the gravel is much lower in the sunken area which suggests strongly that about 0.7 – 1.2 m of gravel has been removed and most of the overburden replaced to make the current soil profile of the football pitch. It therefore seems highly likely that the hollow is an artificial gravel pit.

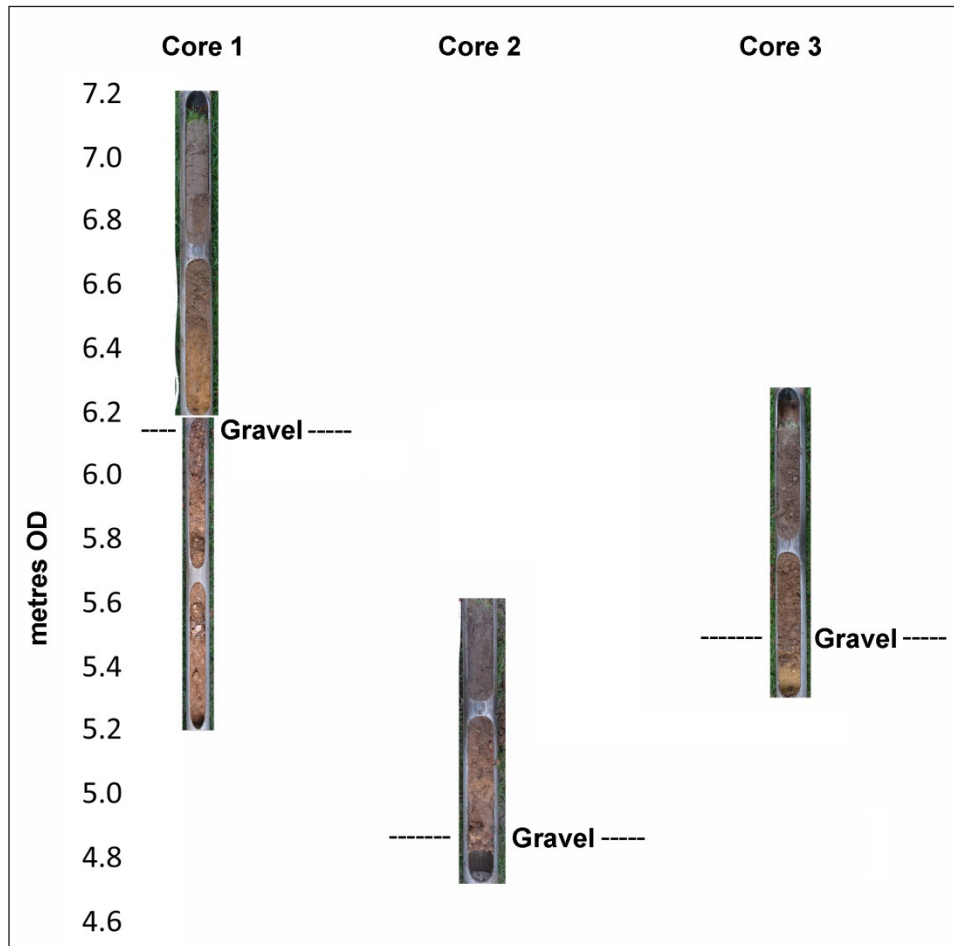


Figure 51 The three cores plotted in approximate lateral positions, but at their correct depths OD

Survey and identification of tree-stumps within ‘The Quarters’

Gill Campbell and Zoë Hazell

Introduction

The plans for the restoration and presentation of the gardens at Marble Hill Park involve the restoration of the historic core of the grounds. In order to inform this work English Heritage wished to learn as much as possible about the trees, dead or living, within this area and how these might relate to Henrietta Howard’s design or later developments. To this end Historic England were asked to undertake a tree-stump survey in order to identify the unknown dead tree stumps that might relate to the original or later plantings.

Methods

Fieldwork was carried out over two days at the end of January 2016. It comprised a walkover survey of The Quarters to locate and identify large diameter tree-stumps using the existing tree map and survey (FDA Ltd 2014) as a guide. It should be noted that all the living trees and many of the trees stumps have four-digit individual tree numbers. Many of the trees bear metal tags (giving their tree number) on the main trunk or branch, although these tags sometimes fall off, or are removed by squirrels (Brian Clarke, pers comm). Where a tree stump or living tree had a metal tag or could be confidently identified from its position on the tree map, it is referred to (below) by its individual tree number where appropriate.

All stumps that could be regarded as the remains of mature trees were either identified on-site or sampled for more detailed examination. Some smaller diameter tree stumps were also examined where it was thought they might represent the offspring of long dead trees or where it was suspected that they could represent moribund hedging. Each tree stump examined was given a unique identifier as follows (and see Table 1):

- north-east quarter: HE A to F (HE=House East – enclosed planting immediately to the east of the house)
- north-west quarter: HW A to O (HW=House West – enclosed planting immediately to the west of the house)
- south-east quarter: HEL A to P (HEL=House East Lower – enclosed planting east of the house below the wide tarmacked walk), and
- south-west quarter: HWL A to N (HWL = House West Lower - enclosed planting west of the house below the wide tarmacked walk)

The position of each tree stump examined was recorded using tape measures by Magnus Alexander (Historic England). This information was then added to the survey plan (see Figure 52).

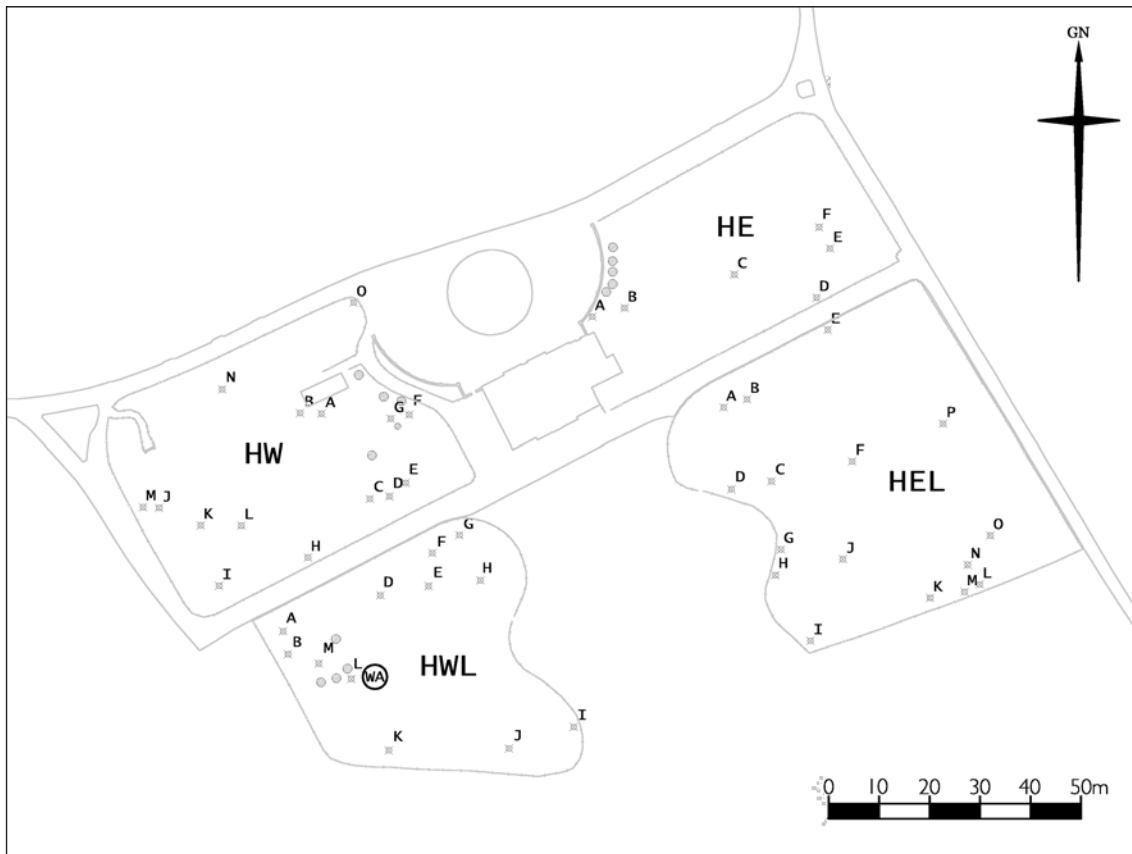


Figure 52 - Location of the recorded tree stumps – quarters and stumps identified by the letters above, WA = winter aconite, hatched circles = butcher's broom © Historic England

During the walkover survey in January 2016 it was realised that some of the shrubs and under-planting might be of considerable age and therefore a second visit to the site was undertaken in mid-May to observe the quarters in growth/bloom and in light of the results from the tree-stump identifications. Observations on this planting are considered in the discussion of the results below.

Where a stump could not be readily identified in the field, either from the wood itself or from branches sprouting out of the decaying trunk, small wood samples were removed from the trunks using a pruning saw. These samples were placed in re-sealable plastic bags, labelled and taken back to the Historic England laboratory at Fort Cumberland. Water was then added to each sample bag, the bags re-sealed and the wood samples left to soak for several weeks whilst in cold storage at circa 4°C. Each wood sample was then identified using standard procedures (Gale & Cutler 2000).

Thin sections were prepared in three planes (Transverse (TS), Radial Longitudinal (RLS), and Tangential Longitudinal (TLS)) by slicing each wood sample by hand with a double-edged razor blade. Each section was then mounted in distilled water on standard microscope slides. The sections were then examined at up to x400 magnification on a Leica DM2500 high power microscope. Reference was made to the identification criteria published in Schweingruber (1982; 2011), Gale & Cutler (2000) and Hather (2000), and to modern comparative wood slides held by Historic England at Fort Cumberland.

Results

The full results, including identifications made in the field, are presented in Table 1. Nomenclature follows Stace (1997). The locations of the tree stumps recorded during the survey in January 2016 are shown in Figure 52. Yew (*Taxus baccata*), followed by elm (*Ulmus* sp.) and maple, including possible sycamore (*Acer* cf. *pseudoplatanus*), were the most frequently identified taxa, with holly (*Ilex aquifolium*) and deciduous oak (*Quercus* spp.) only slightly less so.

Notes on wood identification

The wood of many trees is sufficiently distinctive to allow identification to genus, for example: plums, cherries, laurels etc. (*Prunus* spp.). However, it is rarely possible to assign a wood sample to species, apart from in a few cases, for example holly (*Ilex aquifolium*) and yew (*Taxus baccata*). Thus while sycamore (*Acer pseudoplatanus*) tends to have wider and higher medullary rays than Norway maple (*A. platanoides*) and other maple species (Gales and Cutler 2000, 29; Schweingruber 2011, 117), there is some overlap in ray size in addition to variation caused by different growing conditions. For this reason where a maple wood sample had rays greater than 4 cells wide, these have been reported as possible sycamore (*A. cf. pseudoplatanus*).

Similarly the wood of the apple sub-family (*Maloideae*) which includes apples (*Malus* spp.), pears (*Pyrus* spp.), hawthorns (*Crataegus* spp.), and whitebeams (*Sorbus* spp.) amongst others, cannot be distinguished to genus and therefore such wood is termed Maloideae. Lastly while most oaks have a ring porous vessel arrangement those of the subgenus Sclerophyllous, which includes holm oak (*Quercus ilex*), have a diffuse porous vessel arrangement (Schweingruber 2011, 401). Therefore oak with ring porous wood has been reported as deciduous oak (*Quercus* sp.) to distinguish between the deciduous subgenera and those of the subgenus Sclerophyllous.

Table 1 - Tree-stumps identified within The Quarters

Sample name	Description
HE-A	Smaller diameter stump next to 1143. From its distinctive bark it was identified on site as yew (<i>Taxus baccata</i>). No sample was taken.
HE-B	A chopped down tree-trunk lying next to a large/tall stump. No sample. This is likely to be 1150 described as holly (<i>Ilex aquifolium</i>) - gone.
HE-C	Cut-off tree stump, waist height. Sampled. Identified as yew (<i>Taxus baccata</i>).
HE-D	Very degraded low level stump next to the fence. Sampled. Identified as a species of plum/cherry etc. (<i>Prunus</i> sp.). Likely to be tree 1185, a dead Japanese flowering cherry (<i>Prunus serrulata</i>).
HE-E	Sampled. But not very old. Identified as elm (<i>Ulmus</i> sp.).
HE-F	Very large tree stump, tipped over. Identified on site as deciduous oak (<i>Quercus</i> sp.). No sample. This may be tree 1189.
HEL-A	A sprouting stump. Identified on site as holly (<i>Ilex aquifolium</i>) from the leaves on the shoots. No sample.
HEL-B	A degraded low-level stump. ?1359 "gone". Sampled. Identified as yew (<i>Taxus baccata</i>).

Sample name	Description
HEL-C	Low-level stump. Sampled. Directly next to a tall, living ash tree. Identified as cf. false acacia (cf. <i>Robinia pseudoacacia</i>).
HEL-D	Fallen tree across path near gate. Sampled. Identified as deciduous oak (<i>Quercus</i> sp.).
HEL-E	A multi-branching trunk ?cut down recently? Sampled. Identified as holly (<i>Ilex aquifolium</i>).
HEL-F	Multi stem trunk. Sampled. Identified as horse chestnut (<i>Aesculus</i> sp.)
HEL-G	Tall stump with thorny shoots coming off it. Identified as hawthorn (<i>Crataegus</i> sp.) on site. No sample.
HEL-H	A tall stump on the very edge of the wooded area (fence line).Losing its bark off most of its trunk. Sampled. Identified as elm (<i>Ulmus</i> sp.).
HEL-I	Holm oak (<i>Quercus ilex</i>) on the very corner of the woodland. It has a decaying central stump, with c15 large living trunks growing up off it. No sample.
HEL-J	A large diameter stump at very low level (ground level). Sampled. Identified as deciduous oak (<i>Quercus</i> sp.).
HEL-K	An ivy covered stump. Decaying wood. Located on the bottom edge of the woodland, opposite the grotto. Possible ring porous/tangential bands. Sampled and identified as elm (<i>Ulmus</i> sp.)
HEL-L	30cm-high stump, ivy-covered. Opposite the eastern end of the grotto. Sampled. Identified as possible maple species (cf. <i>Acer</i> sp.)
HEL-M	Probable stump, but little evidence of it remaining, other than a young shoot of holm oak (<i>Quercus ilex</i>) from its leaves. Identified on site. No sample.
HEL-N	A smaller, low level stump. Sampled. Rotten. Identified as possible sycamore (<i>Acer</i> cf. <i>pseudoplatanus</i>).
HEL-O	Waist height stump – ivy covered. Sampled. Identified as yew (<i>Taxus baccata</i>).
HEL-P	2-3m long stump, fallen over, with the root system exposed. A tree tag (1303 'dead') is present (had been repositioned) on the transverse section. Sampled. Identified as yew (<i>Taxus baccata</i>).
HW-A	Stump near the lavatory building. Identified on site as deciduous oak (<i>Quercus</i> sp.). No sample.
HW-B	Holly (<i>Ilex aquifolium</i>) stump with living shoots and leaves. At the corner of the lavatory building. Identified on site.
HW-C	Leaning stump with partial roots exposed. Holly saplings at base – unclear if from the same plant. Sampled. Identified as hornbeam (<i>Carpinus</i> sp.). Almost certainly tree 1534.
HW-D	Holly (<i>Ilex aquifolium</i>), recently cut down. Lots of shoots. Not sampled.
HW-E	Small, low stump. Sampled. Identified as yew (<i>Taxus baccata</i>).
HW-F	A sprouting small stump. Sampled, including leaves. Identified as elm (<i>Ulmus</i> sp.).
HW-G	Small sprouting stump next to a big oak. Same type as F: elm (<i>Ulmus</i> sp.).
HW-H	Very small decaying stump. Sampled. Identified as ash (<i>Fraxinus</i> sp.).
HW-I	Tilting stump. Opposite the bench on the other side of the path. Identified on site as deciduous oak (<i>Quercus</i> sp.).

Sample name	Description
HW-J	Degraded stump. Sampled. Identified as probable sycamore (<i>Acer cf. pseudoplatanus</i>).
HW-K	Very decomposed. Sampled. Identified as elm (<i>Ulmus sp.</i>)
HW-L	A degraded, formerly large diameter, stump. Abuts a living tall, narrow tree. Identified on site as deciduous oak (<i>Quercus sp.</i>).
HW-M	A fallen tree with a long trunk. Sampled. Identified as probable sycamore (<i>Acer cf. pseudoplatanus</i>).
HW-N	Large tree stump, charred outer. Sampled. Identified as a maple species (<i>Acer sp.</i>).
HW-O	0.6m high stump next to a lamp post. Sampled. Identified as holly (<i>Ilex aquifolium</i>).
HWL-A	0.5m high stump. Degraded. – only 1/2 remaining. Sampled. Identified as probable sycamore (<i>Acer cf. pseudoplatanus</i>).
HWL-B	Fallen stump with roots exposed. A sapling growing out of it. Identified on site as holm oak (<i>Quercus ilex</i>) from leaves. No sample.
HWL-C	Small stump. Not sampled. ?257 “hawthorn – gone” (cut down).
HWL-D	Very large, fallen stump. Trunk sampled. Some saplings growing out of it, but thought not to be from the original tree. Identified as lime (<i>Tilia sp.</i>).
HWL-E	Remnant a formerly much bigger tree. Degraded. Sampled. Identified as possible horse chestnut (cf. <i>Aesculus sp.</i>).
HWL-F	Large, waist high stump. Sampled. Identified as horse chestnut (cf. <i>Aesculus sp.</i>).
HWL-G	0.3m high stump on an angle/tilted. Sampled. Identified as yew (<i>Taxus baccata</i>).
HWL-H	An old cut down, yew (<i>Taxus baccata</i>) stump. Lots of new shoots. Photo taken, but no sample.
HWL-I	0.8m high stump. Eroding – 1/2 remaining. Sampled. ?369. Identified as maple species (<i>Acer sp.</i>)
HWL-J	0.3m high stump. Ivy covered. Sampled. Identified as yew (<i>Taxus baccata</i>)
HWL-K	A short, small stump. ? <i>Crataegus</i> (hawthorn). Sampled. Identified as <i>Maloideae</i> and therefore consistent with the hawthorn identification made in the field.
HWL-L	0.6m high stump. Very loose in the ground. ?299. Identified as elm (<i>Ulmus sp.</i>)
HWL-M	A very low (ground level) stump, with a broken off section. Sampled. Identified as elm (<i>Ulmus sp.</i>)
HWL-N	An extremely degraded, ground-level stump. Very little remaining. Sampled. Identified as probable sycamore (<i>Acer cf. pseudoplatanus</i>).

Discussion

The north-east quarter

One of the first things of note is the evergreen planting against the wing wall. There is a curved line of yews, including one stump (1142), sampled as HE-A, and

identified as yew during this survey. The line of yews is under-planted with butcher's broom (*Ruscus* sp.) (Figure 53) and may once have been a high hedging acting as a screen. Almost immediately to the east of this are some box trees (*Buxus sempervirens*) of considerable age (Figure 54). These may be the remains of former clipped box hedging. Some of the existing and dead holly (e.g. HE-B) in this area may also be the remains of former evergreen screening. The nature of this planting suggests that it could date from the 1830s-1850s planting by General Peel (EBA 1989, 30).

Further to the east and on the northern edge of the quarter are quite a number of Italian lords and ladies (*Arum italicum* ssp. *italicum*) as well a large lilac (*Syringia* sp.) (Figure 54 and Figure 55). The former suggests that this has been woodland planting for some considerable time. The latter is likely to be part of the 1920s planting (EBA 1989, 9 and 31).

The centre is quite open, though a large, waist high stump in this vicinity was identified as yew (HE-C). This may be all that remains of a clipped standard yew from the time when this was part of a formal garden, or represent later planting.

On the eastern edge of the quarter there is also considerable evergreen planting. Amongst this, in the south-east corner a large stump (HE-F) was identified as deciduous oak. There is also evidence of elm in the form of small diameter stumps and sprouting/regenerating clumps (Figure 56). This suggests that prior to the Dutch elm disease epidemic of the 1970s this area supported several elms.



Figure 53 Butcher's broom beneath a line of yew in the background. © Historic England



Figure 54 Italian lords and ladies in the foreground against a backdrop of box. © Historic England



Figure 55 - Lilac growing against the fence in the area east of the house. © Historic England



Figure 56 Regenerating elm growing in the north-east quarter. © Historic England

The south-east quarter

The north-west, north and east sides of this area are dominated by evergreen planting and the stumps identified (HEL-A: holly; HEL-B: yew; HEL-E: holly) suggest this was of some age, possibly 1830-1850. To the south several stumps were identified as deciduous oak or as elm suggesting that within this area these trees were previously more prevalent. There is a large open space towards the centre of this area which in May 2016 was covered in cow parsley (*Anthriscus sylvestris*) and a tall growing comfrey (*Symphytum* sp.) (Figure 57). Two medium sized stumps on the edge of the area were identified as horse chestnut and possible false acacia.

Along the west curved edge of this area the old or dead hawthorns (including tree 1224 and HEL-G) could be part of a moribund hedge boundary. Also of interest is the multiple-stemmed large holm oak (perhaps tree 1229) which occupies the south-west corner of this area (Figure 58). The tree has regenerated from a large central stump and is of considerable age. It may have been planted during Henrietta

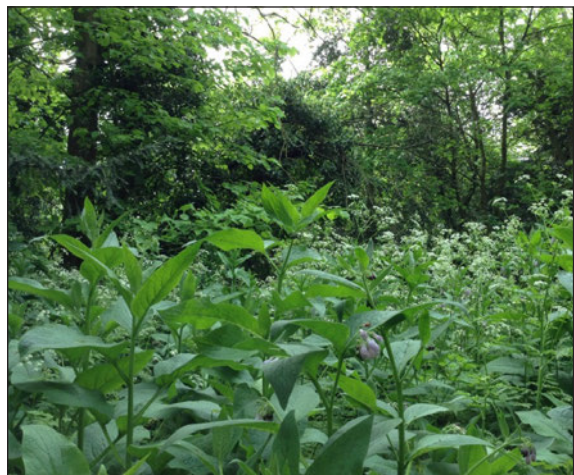


Figure 57 - Comfrey and cow parsley growing in the centre of the south-east quarter. © Historic England

Howard's lifetime. However, it is also possible that it was planted to frame the formal garden identified by the recent geophysical survey (Linford et al 2016: gpr23) and mentioned in the sales notice of 1890 (EBA 1989, 28).

Just outside the area and along the eastern edge there is some indication of former woodland planting. Underneath lime tree 218 there is a single Italian lords and ladies surviving along with a comfrey and elder seedling (Figure 59). This suggests that woodland once extended beyond the current fencing since Italian lords and ladies tends to spread vegetatively by short creeping rhizomes (Hill et al 2004, 28).

The north-west quarter

The areas closest to the house are again dominated by evergreen planting, with yew under-planted with butcher's broom lining the eastern side and laurel along the southern edge against the tarmacked walk. There are also considerable amounts of holly. Saplings and small dead elms were identified on the eastern side of the planting along with a large stump in the centre of the western end of the planting. Three oak stumps were also identified within the interior of the area, along with a single dead ash and a recently removed hornbeam (tree 1534). Around the icehouse mound were several stumps of probable sycamore, reflecting current management of the planting to ensure that this species does not take over (LUC 2007, 3). In terms of living trees, lime tree (1416) is of interest. While the centre is decayed, two secondary forks are growing well. It is clearly of some age and may date back to the original planting (Figure 60).



Figure 58 - Multi-stemmed holm oak
© Historic England



Figure 59 - Woodland plants surviving beneath lime tree 218 © Historic England

The south-west quarter

The evergreen planting of yew, some now gone and identified from stumps, along the eastside of this area partially mirrors the planting on the other side of the grass to the east. However, there is no large holm oak corresponding to tree 1229. Within the interior of the area, are the remains of two large elms, two possible horse chestnuts and one large, dead lime. Also of interest is a large living lime with epicormic growth (tree 236). Just to the south of this large tree is a clump of winter aconites (*Eranthus hyemalis*), while just to the west periwinkle (*Vinca* sp.) is present (Figure 61). This ground cover was clearly meant to be viewed by visitors walking through the garden and could be of some age. Overall the impression of this area is that the elms, limes and horse chestnuts might reflect the original planting, with yew and/or holly being late, 1830-1850 additions.

Conclusions

The results of the tree survey reflect the recent history and management of the quarters. It is clear that elm trees were an important element in the planting and that these have largely been lost as a result of the Dutch elm disease epidemic of the 1970s. A number of trees were also lost during the hurricane of October 1987, 39 over the park as a whole, with others damaged (EBA 1989, 99), and this may have affected the oaks and limes in particular. Lastly the need to keep sycamore under control and avoid it taking over the woodland means that trees of this species have been regularly removed over the last 30 years or so (LUC 2007, 3).

Within the historic core, earlier work (EBA 1989, 69) suggested that two

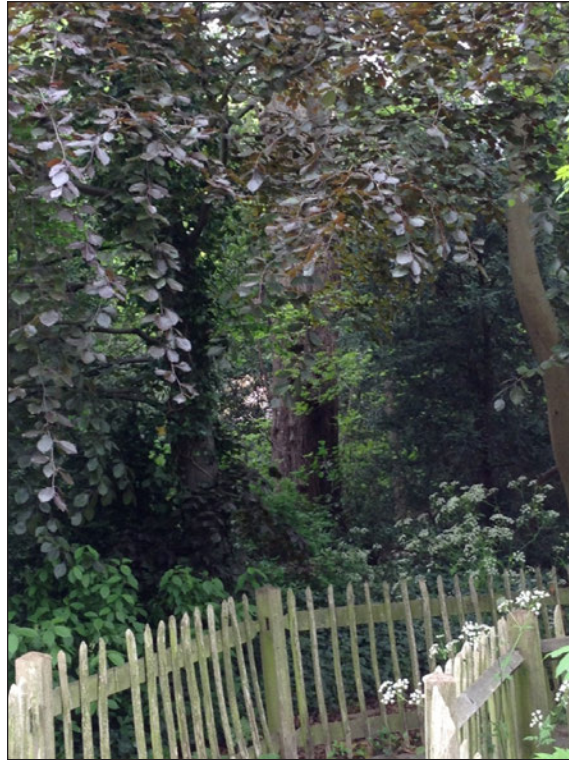


Figure 60 - Lime tree 1416 from the ice house path. Only one of the secondary forks is clearly visible © Historic England



Figure 61 - Lime tree 236 with winter aconites in the foreground. © Historic England

large common limes could date from Henrietta Howard's time on the basis of their girths. They also postulated that an oak, holm oak, beech, plane and horse chestnut were over 150-60 years old, again on the basis of their girths.

The survey suggested that the existing limes are of considerable age. While a number of stumps indicated that deciduous oaks were once significant taxa in the planting scheme. The importance of the large holm oak at the south-west corner of the enclosed planting to the east of the house below the tarmac covered walk was also recognised.

The 1989 analysis of the vegetation (EBA 1989, Appendix 4) did not pick up on the history of elm in this area. That both elm and lime were a feature of Marble Hill park and gardens is indicated by Hugh Walpole writing to Lewis Walpole in 1738 'of flowery lime and elm tree green' at Marble Hill.

Also of possible significance are the three identifications of (now dead) horse chestnut. The anonymous account of 1760 (possibly by Henrietta Pye) refers to groves of horse chestnut rather than avenues, so it is possible that these trees were also part of the quarters' planting from an early date (EBA 1989, 55).

Finally, the evergreen planting that lines the different parts of the quarters, especially the areas closer to the house, while likely to be 1830-50s additions, do give the impression of former boundaries within which the woodland and other plantings were made or existed; a situation somewhat suggested by elements depicted on the 1786-7 plan.

Geophysics summary

Introduction

The following is an edited summary of the findings of the geophysical surveys conducted in the parkland surrounding Marble Hill House in late 2015 and early 2016 published separately as Linford *et al* (2016). A Ground Penetrating Radar (GPR) survey of approximately 16.5 ha was carried out over all open areas and earth resistance survey (3.0 ha) was used over the terraced area immediately S of the house and to extend coverage into tree covered areas inaccessible to the GPR system. During the initial visit a caesium magnetometer survey of 3.5 ha was also carried out over the north lawn to test magnetic response at the site but despite waterlogged site conditions it was concluded that GPR was providing greater resolution, , and this technique was used over a wider area. For details of the methods used, data analysis and presentation of resultant plots see Linford et al (2016).

Results

Magnetometer survey

See Figure 62.

Table 2 - Summaries of the magnetic anomalies identified

Anomaly	Description	Notes	Date
[m1a]	Low magnitude linear anomaly	Service pipe? Modern materials?	Modern
[m1b]	Linear high magnitude ferrous anomaly	Service pipe or cable	Modern
[m1c]	Linear anomaly	Service pipe? May be of ceramic construction.	Modern
NB	1b and 1c appear to converge in the centre of the lawn but there is nothing to suggest what they might have supplied		
[m1d]	Linear high magnitude ferrous anomaly	Service pipe or cable	Modern
[m2]	Large linear anomaly running NW-SE from Richmond Road directly towards Marble Hill House. Alternates between high magnitude positive and negative polarities suggesting a construction material with a thermoremanent magnetisation such as ceramic or asphalt. At its southernmost end it possibly widens and terminates in a circular area although proximity to the edge of the survey makes this uncertain.	Appears to represent a metalled road or drive. Believed to have been installed by the Cunard family around 1900 during their thwarted attempt to develop the park for private housing (Brian Clark, pers comm)	c1900

Anomaly	Description	Notes	Date
[m3]	A large ferrous anomaly adjacent to E side of [m2]	Corresponds with a complex of anomalies detected in the GPR survey and is likely to represent a structure or installation either contemporary with the drive or associated with later C20th use of the site	C1900? WWII?
[m4]	A rectangular configuration of four discrete ferrous anomalies, other similar anomalies have been indicated across the survey area	Magnitude and symmetrical form suggests they are caused by vertical ferrous rods probably associated with the modern use of this area for sports pitches	Modern
[m5a-b]	Weak narrow ditch anomalies	Cause unclear; may date from any period, prehistoric - modern	Unknown
[m6]	Several broad, weak anomalies	Likely to be caused by variations in the superficial geology, topographic variation possibly more pronounced prior to C18th landscaping	Geological
	Distributed across the survey area were a series of weak, parallel, linear ditch anomalies running ~SW-NE spaced ~3-3.5m apart	Probable drainage ditches, possibly established at the time the area was landscaped	Modern

Earth resistance survey

See Figure 62.

Table 3 - Summaries of the resistance anomalies identified

Anomaly	Description	Notes	Date
Area 1			
[r1]	A rectilinear pattern of high resistance linear anomalies which exhibit strong contrasts in both the shallow 0.5m and deeper 1m separation datasets	Potentially substantial wall footings. Remains of a brick wall were discovered just to the N of the survey area (King 2016, pers comm). These anomalies may be related, possibly representing rectangular walled gardens as suggested by the 1898 Richmond and Twickenham Times map. Alternatively there may have been a building here.	Modern
[r2]	A low resistance ditch anomaly that appears to have one or more discrete, square pit anomalies set into its edges, near [r1] it turns a right angle to run ~15m W	Forms a link between the kitchen garden area and the landscape garden anomalies further S [r4] and may be associated with either.	19th

Anomaly	Description	Notes	Date
[r3]	A combination of discrete low and high resistance anomalies appears to form a rectilinear pattern on a broadly N-S axis	Immediately W was a football pitch on a similar alignment; [r3] may represent the remains of a temporary stand erected for a sporting event. Or, may mark the site of a structure associated with the earlier formal garden or planting beds associated with the kitchen gardens.	19th/20th
[r4]	High resistance linear anomalies	Probably metalled paths and layout suggest probably associated with the C18th designed landscape; a very similar arrangement of paths is shown on the 1st edn OS maps (Ordnance Survey 1871).	18th/19th
[r5]	One of the [r4] paths runs S past a line of discrete low resistance anomalies. One is particularly strong with an inverted response; high resistance centre surrounded by low resistance circular area ~8m across.	These may represent tree planting pits perhaps screening the view E from the house. The largest might represent remains of a statue base or similar monument intended as an 'eye-catcher'.	19th
[r6]	The path above [r5] continues S through an amorphous high resistance area which, given its localised nature, suggests a rubble spread rather than geology.	This is likely to represent demolition debris, perhaps from Little Marble Hill which the 1st edn OS maps shows stood immediately to the south	19th
[r7]	Near the SE corner of the survey area path [r5] turns a right angle to run south-west, eventually joining the track detected by the GPR survey (see below) running across the football pitches.	An offset curving projection and a triangular spur suggest possible areas of hard-standing in front of buildings; Little Marble Hill would have been near the former.	19th
[r8]	Fragmentary evidence for rectilinear wall footings on an alignment parallel to the adjacent bank of the Thames	Suggests other structures once stood in this area. The 1711 'scatch' shows three buildings here as 'the hatters'. Absence of any clear ground plans may indicate later remodelling of the area removed these structures, possibly when Little Marble Hill was constructed.	18th
"	Several low resistance linear anomalies on different alignments, some expressed in surface topo-graphy, also ran through this area.	The strongest of these appear to correspond with a body of water marked at this location in the 2nd edn OS maps (1898)	19th?

Anomaly	Description	Notes	Date
“	Also, a sharp boundary separates high background resistivity to the N from very low resistance to the S near the Thames.	This may indicate the transition of the superficial geology from Langley Silt to alluvium	Geological
Area 2			
[r9]	Three parallel low resistance, linear anomalies, possible ditches, run out of the survey area on an NW-SE axis	Possibly associated with either previous landscaping or sports pitches	Unknown
[r10]	Linear high resistance anomalies	Suggests this area might once have been landscaped to form earthen banks screening the edge of the property similar to those still extant running parallel to Richmond Road to the N. It is also possible that the stronger linear anomalies in this vicinity reflect remains of the ‘Sweet Walk’.	19th?
Area 3			
[r11]	Narrow high resistance linear anomaly running SSE through the survey area from Marble Hill House towards the Thames	Corresponds to a known modern service (see [gpr8] below).	Modern
[r12]	A high resistance linear anomaly showing strongly on both 0.5m and 1m electrode separation surveys suggesting that it extends to some depth (~2m).	This is a brick culvert known to run from the E wing of the house towards the Thames. It has a break ~25m S of the house adjacent to an area of high resistance which may suggest some damage, or that it is crossed by another anomaly running E-W. The c 1752 plan shows a broad E-W walk here which may support the latter conjecture.	
[r13]	A possible rectilinear feature measuring ~10m E-W by 7.5m N-S. This is highly conjectural as it is only visible in the combined 0.5m and 1m separation results after subtraction and occurs in an area where the latter were affected by electrical noise.	Nevertheless, the central position relative to the S aspect of the house and the two areas of tree planting to the E and W would be an attractive place to site a garden feature	18th?

Anomaly	Description	Notes	Date
[r14]	A complex of high resistance anomalies appears to form a line of, possibly, three square panels. Each is ~5m across and the complete arrangement would close the gap between the two stands of trees that bracket the S aspect of house. The anomaly of the easternmost panel is disrupted by culvert [r12] although it is not clear whether this is simply the superposition of anomalies or whether it represents actual intercutting. The other two panels both show evidence for a circular central feature ~2m in diameter. While the plan revealed is rather fragmentary, some of the anomalies are of high magnitude suggesting substantial construction.	A formal garden design. At the position labelled [r14], where the culvert anomaly intercuts, the deeper 1m separation results suggest the possibility of substantial buried remains – a possible site of the second grotto?	
[r15]	A high resistance linear feature divides ground exhibiting higher background resistivity to the N from the noticeably lower background resistivity of the lawn running S towards the Thames.	This may denote the line of change in superficial geology (as suggested at [r8] above) as the strength of anomalies forming [r14] changes markedly as they cross its line which is suggestive of changing subsurface conditions. [r15] may indicate the strike of the original slope of the land in this area, C18th landscaping having since altered it to be parallel to the S face of the house. However, the 1752 plan shows paths around the grotto and [r15] correlates with the southernmost of these.	18th?
[r16]	Two approximately rectilinear low resistance anomalies ~2-4m across surrounded by areas of higher resistance	These may represent former planting pits with the linear low resistance anomaly passing between them being a former path.	18th/19th
[r17]	Linear high resistance anomalies running around the grotto	Appear to correlate with paths depicted on the 1752 plan	18th

Ground Penetrating Radar survey

See Figure 63.

Table 4 - Summaries of the ground penetrating radar (GPR) anomalies identified

Anomaly	Description	Notes	Date
[gpr1]	Very shallow anomalies	Areas of un-mown grass	21st
[gpr2]	Very shallow anomalies	Well-worn pathways	21st
[gpr3]	Very shallow anomalies	Astroturf cricket pitch	21st
[gpr4]	Low amplitude anomalies from approximately 0.16m onwards	Line markings of past and present sports pitches. Clearly have a long term impact on the local conductivity of the soil.	21st
[gpr5]	Various near-surface anomalies	Roots of mature trees	20th
[gpr6]	Various near-surface linear anomalies	Pipes across the site but mainly serving the house	20th
[gpr7]	Various near-surface linear anomalies	Service trenches across the site but mainly serving the house	20th
[gpr8]	A near-surface linear anomaly	A recent electricity supply installed on the South Lawn to facilitate the staging of events (Brian Clark pers. comm.)	21st
[gpr9]	Near-surface anomaly to the N of the house	Perhaps former cricket nets	20th
[gpr10]	Near-surface anomaly to the N of the house	Most likely to represent former playing surfaces or facilities	20th
[gpr11]	Near-surface anomaly to the N of the house	Ditto	20th
[gpr12]	Near-surface anomalies N of the house	Perhaps former practice pitches	20th
[gpr13]	Planar areas of high amplitude response between 0.16 to 2.06m	Most likely to represent gravel deposits	Geological
[gpr14]	A series of broad, parallel anomalies overlying [gpr13] N of the house	Possibly ridge and furrow or other agricultural activity	Medieval?
[gpr15]	The linear anomaly heading N from the house also detected by the magnetic survey [m2]	Driveway? Quite wide for road (12m) but the presence of linear services including some discrete reflectors suggests this had been designed as a general conduit for infrastructure to support the proposed housing development	c1900

Anomaly	Description	Notes	Date
[gpr16]	A 'T' shaped response to the E beyond the magnetometer coverage	Similar to [gpr15] so perhaps related	c1900
[gpr17]	A complex group of anomalies consists of a rectilinear feature, approximately 6m x 3m, adjacent to a 4m square reflector surrounded by an amorphous area of high amplitude response.	?Building and other elements associated with [gpr15]. The presence of a ?service [gpr6] from the house suggests other interpretations, ?Second World War civil defence installation.	20th
[gpr18]	Curvilinear anomaly	Appears to be original arc of the carriage turning circle	18th
[gpr19]	A line of low amplitude pit-type anomalies	May indicate a former garden planting, shares an orientation with the main house	18th/ 19th?
[gpr20]	A line of more scattered high amplitude pit-type anomalies	May be part of a the same garden design	18th/ 19th?
[gpr21]	Anomalies close to the stable block	difficult to interpret but may be structural remains	Uncertain
[gpr22]	Linear [r12] between 0.32 to 1.58m, with a fall towards the river	The known brick culvert	18th?
[gpr23]	Anomalies evident in the data from about 0.16 to 1.74m, suggesting they are either quite substantial causative features or formed from material that has encouraged the signal to reverberate through the time window.	Italianate style formal garden layout in an area shown as a panel of trees on the 1st edn OS mapping. Three 8m diameter semi-circular parterres in a rectangular layout of paths. Traces of any symmetrical anomalies, have not apparently survived to the W.	19th?
Ditto	The response is most persistent E of [gpr23] where the reflections apparently continue to 50ns	This could, potentially, be a deeper target such as the putative second grotto.	18th/ 19th?
[gpr24]	A second high amplitude anomaly to the W mirroring the extant grotto is evident within the data between 0.16 to 2.06m	Possibly an alternative location for the second grotto. May be related to the nine pin alley shown on the c1752 plan	18th/ 19th?
[gpr25]	High amplitude anomaly	May also be related to the nine pin alley shown on c1752 plan	18th
[gpr26]	Ditto	Ditto	
[gpr27]	Linear high amplitude anomaly	Related to the terracing	18th/19th
[gpr28]	Linear high amplitude anomalies	Possible elements of former planting or garden designs	18th/19th

Anomaly	Description	Notes	Date
[gpr29]	Additional amorphous anomalies	Difficult to interpret but possibly due to the underlying geology	Geological ?
[gpr30]	A linear EW high amplitude anomaly extends beyond the South Lawn to the W where it continues through the low lying, waterlogged, West Meadow. To the E [gpr30] appears to follow two parallel low amplitude responses leading towards the E corner of the park	Probably a wall, track way or boundary. There is a marked change in response to the S of [gpr30] as the lower lying, alluvial soils close to the river attenuate the incident signal and it is possible that [gpr30] represents a limit to flooding from the Thames.	Medieval?
[gpr31]	A sub circular low amplitude anomaly	Corresponds with an octagonal feature on the c1752 plan surviving as mature trees on historic mapping and visible on 1940s APs	18th
[gpr32]	A modern service passing through a small, rectilinear reflector	perhaps related to an inspection chamber or silt trap	20th
[gpr33]	A high amplitude anomaly between 0.47 to 1.74m lies approximately 25m SW of the Ice House	Potentially a subterranean structure and another possible location for the second grotto.	18th?
[gpr34]	Amorphous high amplitude anomaly	Suggestion of structural remains	
NB	No evidence for the small building at the location shown on the 2nd edn OS maps was found, but survey coverage in this area was partially interrupted by mature trees		
[gpr35]	A complex response within the trees	Unknown	
[gpr36]	Straight linear high amplitude anomalies heading towards the White Lodge Gate, where it crosses the North Lawn as an interrupted low amplitude response	Driveway visible on historic maps, perhaps from 1786	18th?
[gpr37]	Curved linear high amplitude anomalies heading towards the modern car park and East Gate	Driveway visible on historic maps from 1819.	19th
[gpr38]	Straight linear high amplitude anomalies	Driveway visible on 1st edn OS maps, an E branch of [gpr37]	19th
[gpr39]	A high amplitude, wall-type response	Appears later than [gpr37] but is itself cut by the presumably more recent service [gpr6]	19th/ 20th?

Anomaly	Description	Notes	Date
[gpr40]	Similar wall-type anomalies	Perhaps relate to either the previous land division in the park or elements of the pleasure gardens	Post-med/ 18th/ 19th?
[gpr41-46]	Curious, circular anomalies of differing diameter throughout this area	Do not, immediately, suggest a direct association with recent sports activity or former pitches. It is possible they represent elements of the wider pleasure gardens. The largest [gpr41] could represent the location of the short lived “ Priory of St Hubert” folly constructed around 1757 and removed a decade later.	18th/ 19th?

Conclusions

Three geophysical techniques were tested at Marble Hill Park and between them all accessible parts of the park (about 20 ha) were surveyed. Magnetometer survey performed as anticipated responding mainly to ferrous and thermoremanent materials deriving from structures likely to have been constructed in the last two centuries. For this reason, it was abandoned in favour of the other techniques. Ground Penetrating Radar (GPR) performed better than anticipated detecting a wealth of superimposed anomalies reflecting the changing land use of the park through time. Earth resistance survey also performed well and over Area 3 a strong correlation with the GPR results gives confidence that both revealed the primary subsurface remains likely to be present. As the GPR provided more detail, it proved the most rapid and effective method for surveying the open areas of the site. However, while slower, earth resistance survey provided the only means of surveying between closely spaced trees and bushes and was used to extend the survey area to the edges of the park in Areas 1 and 2.

The survey results have revealed a palimpsest of anomalies distributed across Marble Hill Park many of which can be correlated with features visible on historic maps reflecting the changing use of the landscape over time. There are, however, also anomalies suggesting additional features not recorded by any mapping and these will need to be verified by comparison with other forms of research.

Figures (overleaf)

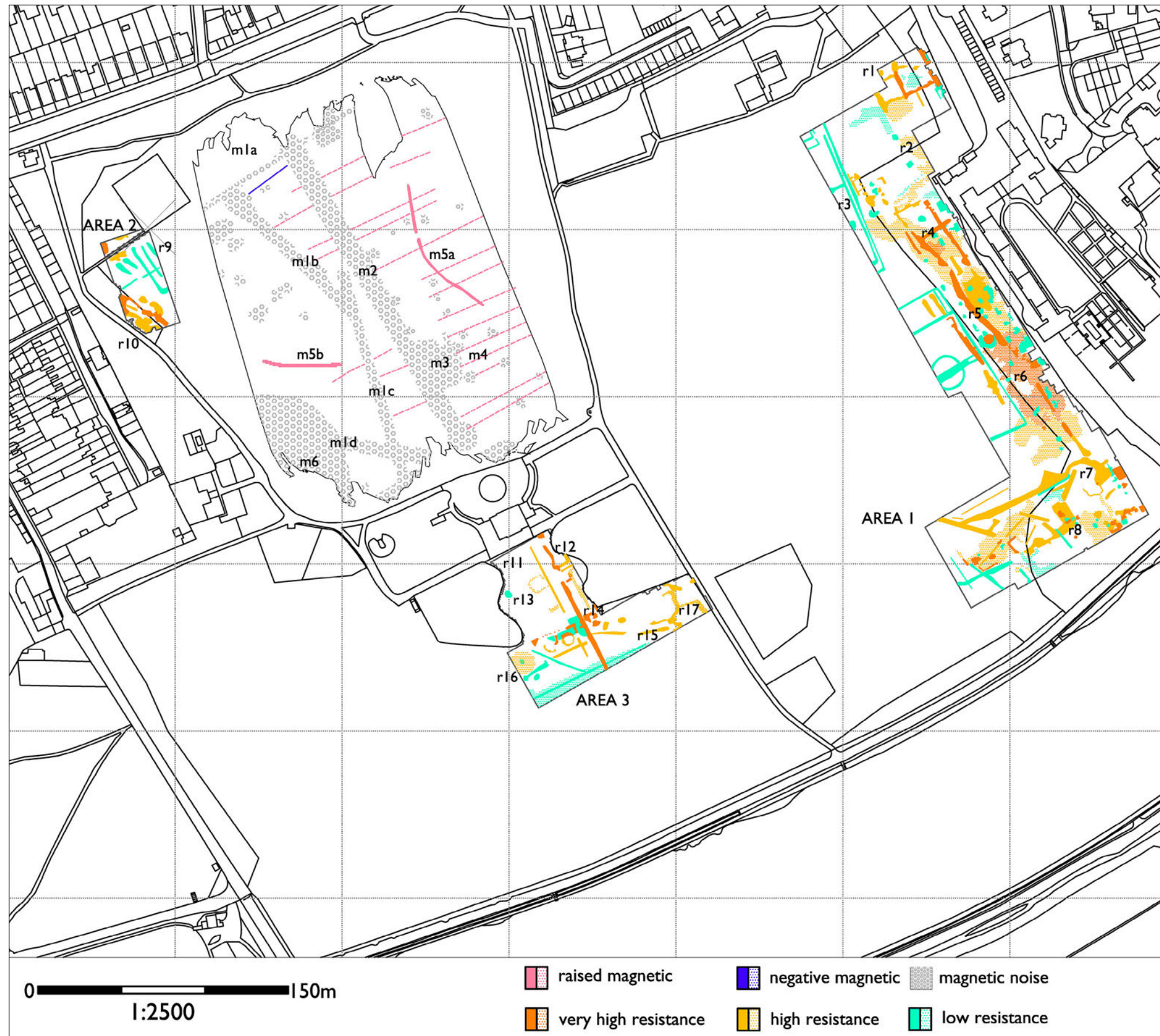


Figure 62 – Graphical summary of significant magnetometer [m1-6] and earth resistance [r1-17] anomalies identified in Linford et al 2016 (Reproduced with permission of Historic England Geophysics team. Modern Ordnance Survey background mapping: © Crown Copyright and database right 2017. All rights reserved. Ordnance Survey Licence number 100024900)

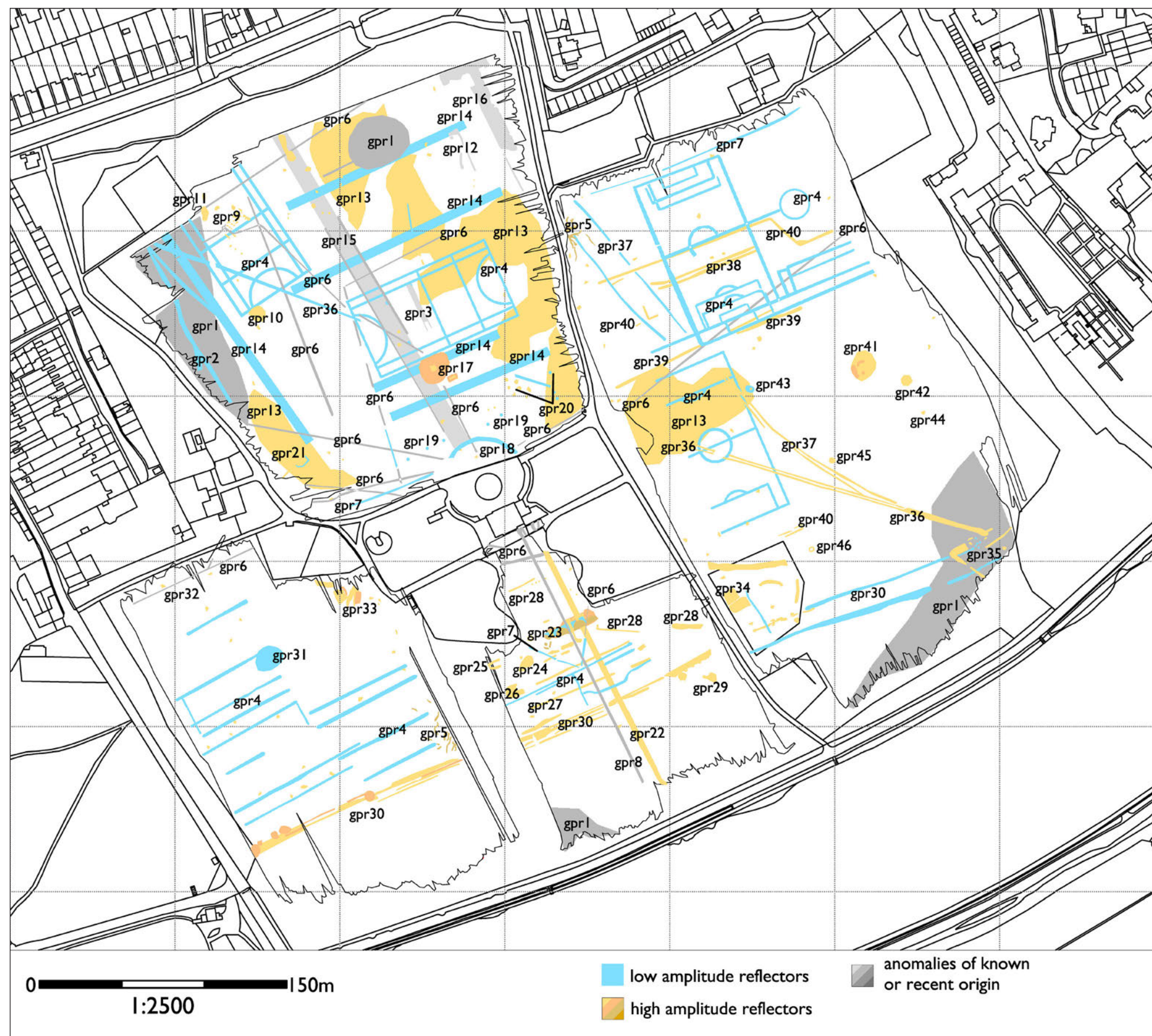


Figure 63 - Graphical summary of significant Ground Penetrating Radar anomalies identified in Linford et al 2016 (Reproduced with permission of Historic England Geophysics team Modern Ordnance Survey background mapping: © Crown Copyright and database right 2017. All rights reserved. Ordnance Survey Licence number 100024900)

PROJECT METHODOLOGY

Project geographical information system

A project geographical information system (GIS) was set up to allow the comparison of various data-sets, including APs, lidar, survey results, and historic maps. All spatial data were geo-referenced using Ordnance Survey's British National Grid coordinate system.

The system was based on ESRI's ArcMap 10.3.1 software. The Historic England GIS team provide standard templates which were used to incorporate a wide range of basic background data such as current OS raster and vector topographic mapping, administrative boundary data, and recent aerial photographic and elevation datasets, as well as existing data on the historic environment, principally Historic England's own statutory datasets (on Listed Buildings, Scheduled Monuments, Registered Parks & Gardens, and the NRHE). Newly captured data for the project which was incorporated into the GIS was of two main types: i) geo-referenced historic maps and plans and ii) data from research. The latter included the topographic survey by the Greenhatch Group, the processed 16D lidar data, and the results of the main fieldwork elements all of which were available in suitable digital formats. Digital images of a variety of historic maps and plans were acquired from a number of sources (see Appendix 2). The maps used ranged in date from the 18th to the early 20th centuries and coverage focused on the house, gardens and park though some maps covered larger areas. The historic maps and plans were geo-referenced to the Greenhatch topographic survey at a scale of approximately 1:1000 or where they covered a wider area to the OS Mastermap data at about 1:2500. Much of the geo-referencing of the historic maps and plans was undertaken using a local installation of ArcMap due to speed concerns though in practice these proved to be largely unfounded. When complete the final GIS was copied to the corporate GIS server and made available to internal project staff.

Following consultation with English Heritage Trust staff it was decided that a GIS accessible to themselves and their contractors was a priority. To do this it was determined that the best approach would be to use the web-based ArcGIS Online system. Data sets created in Arc Map were processed and uploaded to online servers and a Web Mapping Application created allowing access via any browser to invited persons.

Methodological conclusions

In common with other similar projects (such as at Wrest Park (Alexander et al 2014) and Audley End (Alexander et al 2015) this project has demonstrated that a combination of non-intrusive survey techniques is able to maximise the amount of information recovered.

Aerial photography and lidar mapping and interpretation is able to cover large areas relatively rapidly and cost-effectively. It does, however, have limitations in terms of locational accuracy and resolution, discovery biases, for example, created by changes

in geological deposits or ground cover and in the interpretation of the evidence revealed (Bewley 2001). At the other end of the spectrum, excavation (which is to follow the work reported here) covers small areas in great detail and provides types of dating evidence not available with other techniques, but at a high cost in terms of time, effort and money.

Aerial photography covered the whole area of the park and areas beyond but visibility of features in wooded areas was limited. Analytical earthwork survey covered almost the whole park apart from areas of hard standing such as the car park and service yard, and the densely vegetated area adjacent to Montpelier Row. Geophysics coverage varied; magnetometer survey was not very successful and only used on Great Lawn, Ground Penetrating Radar (GPR) proved more useful and was undertaken on most open areas with resistivity being used in some wooded areas. Between them almost the whole park was covered in some way.

By incorporating the results of the field techniques used in a Geographic Information System (above) it was possible to directly compare results. Where all techniques were applied, it is clear that in many places they were recording the same features. In other places two of the techniques were in agreement and examples can be identified of all possible pairings supporting one another. Perhaps the clearest of these correlations though was between the aerial photography and the geophysics results; they were typically both plotting well-defined subsurface features. Incidentally, a comparison of the features identified by GPR survey, which was located by GPS and therefore likely to be accurate to a few centimetres, with the aerial photography mapping suggests that the latter had a margin of error of less than 1m.

There were also features picked up by one technique alone, though it was rare for AP/lidar interpretation to identify a feature not recorded by at least one of the other techniques. Geophysics picked up numerous features or additional elements of features not identified by other techniques, which is not surprising given the resolution and the depth of penetration possible. In contrast, earthwork survey identified a range of larger, less well-defined features than the other techniques and was able to access areas not available to other techniques, most significantly in terms of the current project the woodland quarters.

Coring and vegetation analysis provided specific information to complement the other research. With minimal input the coring allowed a fairly certain interpretation of the large rectangular hollow to the east of the house as a gravel extraction pit. The vegetation analysis allowed detail to be added as to the planting during the life of the wooded quarters and suggest further details of the vegetation history of these areas.

Further work

Some targeted excavation to determine various details of the history of the site, particularly the Pleasure Grounds and service areas associated with the house (the target for garden recreation plans) has already taken place informed by the survey work reported here. Further work is planned and will be published in the Historic England Research Report Series.

If the area adjacent to Montpelier Row is cleared further analytical earthwork survey might be of value to inform the plans for reinstating Sweet Walk. Further targeted excavation will also be valuable along the whole length of the walk and the mound half way along the north side of the park should also be examined as it is likely to be affected by any works but its dating and purpose are currently obscure.

Future documentary research may be able to provide a detailed account of the establishment, running and closure of the allotments at Marble Hill. It may also be able to determine the function of the unidentified wartime feature near the NE entrance to the park.

Other areas of interest, and archaeological potential, would include:

- The area covered by the current car park, adventure playground and service yard which were the site of most of the functional elements of the 18th century estate such as the stable block, various yards and kitchen garden.
- The area of Little Marble Hill and its gardens, plus various precursors dating back to at least the early 18th century, in the eastern corner of the park and along its north-east side (with elements probably extending into Meadowside).
- The area of later 18th and 19th century buildings to the north of this, within the rough area south of the Service Yard.
- The location of the short-lived but impressive 'St Hubert's Priory' was also probably somewhere within these areas

REFERENCES

See also 'Appendix 2: Historic maps and plans used in this research'.

Anon (Henrietta Pye?) 1760 *A Short Account, of the Principle Seats and Gardens, In and about Twickenham*.

Anon 1986 *Marble Hill – The Design and Use of a Palladian Estate*. Borough of Twickenham Local History Society

Alexander, M 2015 'Marble Hill Park, Twickenham, London: Landscape Investigations - Project Proposal - RaSMIS 7382', Historic England: internal typescript report

Alexander, M, Hann, A, Small, F and O'Hara, P 2014 *Wrest Park, Silsoe, Bedfordshire: Landscape Investigations*. Portsmouth: English Heritage (Research Report Series 6-2013)

Alexander, M with Canti, M, Carmichael, K, Cole, E, Earle Robinson, D, Linford, N, Lowerre, N, McOmish, D, Morrison, K, Payne, A and Soutar, S 2015 *Audley End, Essex: Historic Landscape Investigations*. Portsmouth: Historic England (Research Report Series 46-2011)

Bevir, M 2011 *The Making of British Socialism*. Princeton: University Press

Bewley, R 2001 'Understanding England's Historic landscapes: An Aerial Perspective', *Landscapes*, 1, 74-84

Bryant, J 2002 *Marble Hill*,. London: English Heritage Guidebook

BHC (Built Heritage Consultancy) 2016 'Marble Hill House and Park, London: Conservation Management Plan', unpublished typescript report for English Heritage Trust

Cherry, M, Howe, K & Sheaf, J 1998 *Twickenham, Teddington & Hampton: A Second Selection*. Stroud: Sutton

Chitty, G 1985 'Marble Hill Park', *The London Archaeologist*, 5, 64-5

Crouch, D and Ward, C 1997 *The Allotment Its Landscape and Culture*. Nottingham: Five Leaves Publications

Draper, MPG and Eden, WA 1970 *Marble Hill House and its owners*. London: Greater London Council

EBA (Elizabeth Banks Associates) 1989 'Marble Hill; Restoration of the Gardens and Park', unpublished typescript report for English Heritage

Ehrenstein, C V 2015 'Erskine, John, styled twenty-second or sixth earl of Mar and Jacobite duke of Mar (*bap.* 1675, *d.* 1732)', *Oxford Dictionary of National Biography*, Oxford University Press, online edn [<http://www.oxforddnb.com/view/article/8868>, accessed 11 Nov 2015]

English Heritage Trust 2015 'Marble Hill: Landscape Conservation Management Plan', draft internal typescript report

English Heritage Trust 2016 'English Heritage Parks for People application to the Heritage Lottery Fund for Marble Hill Park', unpublished document submitted February 2016

FDA (Fulford-Dobson and Associates Ltd) 2014 'Annual Tree Inspection', unpublished report for English Heritage

Gale, R and Cutler, DF 2000 *Plants and Archaeology: Identification manual of vegetative plant materials used in Europe and the Mediterranean to c. 1500*. Otely: Westbury Publishing and the Royal Botanic Gardens, Kew

Gelling M and Cole, A 2000 *The Landscape of Place-Names*. Stamford: Shaun Tyas

Geological Survey of England and Wales 1972 *South London, England and Wales Sheet 270*, Drift edition. Chessington, Surrey

Gover, JEB, Mawer, A and Stenton, FM 1942 *The Place-Names of Middlesex apart from the city of London*, English Place Name Society, xviii. Cambridge: University Press

Greenhatch Group 2015 'Marble Hill Park, Twickenham, Middlesex, topographic survey', AutoCAD files, for Historic England/English Heritage

Haggard, R 2001 *The Persistence of Victorian Liberalism: the politics of social reform in Britain 1870-1900*. London: Greenwood Press

Hather, J 2000 *The identification of Northern European Woods: a guide for archaeologists and conservators*. London: UCL

Hill, MO, Preston, CO, and Roy, DB 2004 *Plantatt, Attributes of British and Irish Plants: status, size, life history, geography and habitats*, Huntingdon: Biological Records Centre, NERC Centre for Ecology and Hydrology

Ikin, C 2012 *The Victorian Garden*. Oxford: Shire Publications

Inglis, S 2014 *Played in London: Charting the Heritage of a City at Play*. Swindon: English Heritage

Jacques, D 1995 'Land Tenure at Marble Hill, 1720-1820', unpublished typescript report for English Heritage [reproduced as Appendix 1, CMP 2015]

Kilburn, M 2008 'Howard , Henrietta, countess of Suffolk (c.1688–1767)', *Oxford Dictionary of National Biography*, Oxford University Press, online edn [<http://www.oxforddnb.com/view/article/13904>, accessed 11 Nov 2015]

Linford, N, Linford, P, Payne, A and Pearce, C 2016 *Marble Hill Park, Twickenham, London: Report on geophysical surveys, December 2015 and February 2016*. Portsmouth: Historic England (Research Report Series 19-2016)

LUC (Land Use Consultants) 2006 'Marble Hill House: Landscape Management Plan', unpublished draft typescript report for English Heritage

Potter, D 1962 *The Changing Forest*. London: Secker & Warburg

Schweingruber, F 1982 *Microscopic Wood Anatomy: structural variability of stems and twigs in recent and subfossil woods from central Europe*, Birmensdorf: Swiss Federal Institute of Forestry Research

Schweingruber, F 2011 *Anatomy of European woods*. Remagen-oberwinter: Verlag Kessel

Soil Survey of England and Wales 1983 *Soils of England and Wales: Sheet 6 - South East England*. Harpenden: Lawes Agricultural Trust

Stace, C 1997. *New flora of the British Isles*, 2nd edition. Bath: The Bath Press

Newspaper articles

The following articles were accessed via *The British Newspaper Archive* <http://www.britishnewspaperarchive.co.uk/> at various dates during 2016. In a few cases, articles have no titles and are indicated 'No Title'. Many newspapers have changed their names over time. The main titles listed below reflect the name of the newspaper at the date of the reference. Any subsequent title in brackets is a later name for the paper and the one that the publication is indexed as in *The British Newspaper Archive*.

Anon 1853 'To be sold', *Bell's Life in London and Sporting Chronicle* 25 Sept 1853

Anon 1902 'The Vanished Hand', *Gloucestershire Echo* 28 Jun 1902

Anon 1903a 'Laying Out Marble Hill', *The Daily News (London Daily News)* 16 Mar 1903

Anon 1903b 'View from Richmond Hill: The Rescue of Marble Hill', *(London Daily News)* 30 May 1903

Anon 1903c 'The Richmond View', *The Daily News (London Daily News)* 1 Jun 1903

Anon 1903d 'New London River-side Lung', *The Leeds Mercury Weekly Supplement*

(*Leeds Mercury*) 6 Jun 1903

Anon 1906 No Title, *The Framingham Weekly News*, 3 Feb 1906

Anon 1909a 'News in Brief', *The Evening News (Portsmouth Evening News)* 16 Apr 1909

Anon 1909b No Title *The Evening News (Portsmouth Evening News)* 3 Nov 1909

Anon 1910 'River Mystery', *Nottingham Evening News (Nottingham Evening Post)* 5 Feb 1910

Anon 1911 'Sale of Fruit', *Shoreditch Observer* 30 Dec 1911

Anon 1913 'Our London letter', *The Mercury (Lichfield Mercury)* 20 Jun 1913

Anon 1915 'Lady's Record Swim', *The Midland Daily Telegraph (Coventry Evening Telegraph)* 24 Aug 1915

Anon 1916a 'The Ferry Regatta', *Middlesex Chronicle* 9 Sept 1916

Anon 1916b 'Wise gulls', *The Daily Mirror* 14 March 1916

Anon 1916c '2nd Battalion Middlesex Volunteer Regiment. Official enrolment at Twickenham. The Sacramentum', *The Middlesex Chronicle* 29 July 1916

Anon 1917 'Sales by Auction' *The Middlesex Chronicle*. 22 Sep 1917

Anon 1918 'General district news', *The Middlesex Chronicle* 28 Sept 1918

Anon 1919 *Yorkshire Telegraph and Star (Sheffield Evening Telegraph)* 21 July 1919

Anon 1939a 'Another 500,000 allotments', *The Times* 20 Sept 1939

Anon 1939b 'Deputation to the minister. The case of London allotment holders', *Faversham Times and Mercury and North-East Kent Journal* 25 November 1939

Anon 1940 'Playing Fields as Allotments', *The Bucks Herald* 31 May 1940

Anon 1941a 'News in Brief', *The Daily Mail (Hull Daily Mail)* 4 Mar 1941

Anon 1941b 'News in Brief', *Birmingham Post (Birmingham Daily Post)* 22 Aug 1941

Anon 1941c 'American Seeds for Allotments', *Courier and Advertiser (Dundee Courier)* 31 March 1941

Anon 1941d 'U.S. Seeds For W.I.s', *The Western Morning News* 18 April 1941

Anon 1941e 'County Borough of Preston, Dig For Victory. Wanted, More Allotment Holders', *The Lancashire Daily Post (Lancashire Evening Post)* 3 October 1941

Anon 1942 '£4,000 for allotment holders', *Daily Mirror* 19 June 1942

Anon 1943a 'Seeds of Friendship', *Evening Telegraph (Dundee Evening Telegraph)* 11 March 1943

Anon 1943b 'Friendship Gardens', *Nottingham Evening Post* 11 March 1943

Anon 1945a '90,000 Tons Vegetables from U.S. Seed', *Evening Telegraph (Dundee Evening Telegraph)* 21 April 1945

Anon 1945b 'Women Gardeners', *The Lancashire Daily Post (Lancashire Evening Post)* 27 March 1945

Anon 1945c, 'Allotments must go on for years', *The Citizen (Gloucester Citizen)* 6 October 1945

Anon 1945d 'Allotments or playing fields? N.P.F.A. views on restoration'. *The Citizen (Gloucester Citizen)* 24 July 1945.

Anon 1945e 'Allotments to go?' *Daily Mirror* 19 Oct 1945

Anon 1946 'Farmer's urged to grow more food', *The Times* 16 Feb 1946

APPENDICES

Appendix 1: Historical detail

The following is based upon EBA 1989 although expanded, updated and restructured thematically (see also ‘Appendix: Historic maps and plans used in this research’).

Henrietta’s life

It was Henrietta Howard, née Hobart, later Lady Suffolk, who built Marble Hill House, acquired much of the surrounding land, and shaped the development of the estate for most of its first half century. Much of what we see today is the result of her efforts and as such the key events in her life are significant. The information from EBA (1989) is here supplemented by the Dictionary of National Biography (DNB, Kilburn 2008).

Date	Events	Source
1689	Henrietta was born; the third daughter of Sir Henry Hobart of Blickling, Norfolk, and his wife, Elizabeth	DNB
1698, 1701	Her father, and then her mother died, her upbringing, and that of her sisters, was entrusted to her step-great-grandmother	DNB
about 1705,	Despite a complex inheritance, Henrietta was wealthy enough to attract Charles Howard, Lord Suffolk’s third son, and a captain in Lord Cutts’ dragoons regiment	DNB
Feb 1706	A few days before her marriage Henrietta protected her fortune by placing most in trust guaranteeing her a small personal income, a precaution that proved justified	DNB
Mar 1706	Henrietta and Charles married at St Benet, Paul’s Wharf, London	DNB
Jun 1706	Charles sold his commission and a cycle of poverty began which Henrietta, raised to the life of a gentlewoman, found degrading	DNB
Jan 1707,	She gave birth to a son, Henry, but increasingly lived apart from her husband in Berkshire, while he stayed in London, until bailiffs seized their property and they were forced to move in with Charles’ father Lord Suffolk who later ejected them when unable to pay their way. They moved to lodgings in St Martin’s Street, London, under the name Smith. Howard was often absent for long periods, and when present subjected Henrietta to physical and verbal abuse. She attempted to restore their fortunes by negotiating with her husband’s creditors, pawning valuables, and selling her hair; what money she raised was usually spent by Charles.	DNB
1713?	Henrietta finally held on to enough money for them to travel to Hanover and seek favour in the electoral court where she won the approval of the dowager electress Sophia	DNB
Aug 1714	Following the accession of Sophia’s son as George I, the Howards returned to London with the royal party	DNB

Date	Events	Source
Oct 1714	Henrietta was appointed woman of the bedchamber to Caroline, now Princess of Wales and Charles became a groom of the bedchamber to George I; although in separate households they shared apartments in St James's Palace	DNB
1715-16	Henrietta enjoyed the Princess's circle, where she befriended Alexander Pope, John Gay, John Arbuthnot, and Jonathan Swift among others, but she continued to be harassed by her husband who wished to borrow money from the Princess's courtiers	DNB
Aug 1716	In a memorandum she reasoned with herself that Charles' brutality and neglect meant that he had invalidated their marriage contract so 'I must believe I am free', but that social conventions would make it difficult for her to leave him.	DNB; BL Add Ms 22627, f13
Nov 1717	George I expelled the Prince and Princess of Wales from St James's Palace, and Mrs Howard followed them to their new home at Leicester House. She was then told by Charles Howard that he no longer considered her his wife. He retained control of their son who she had little subsequent contact with.	DNB
About 1720	She was taken up by the brothers John Campbell, second duke of Argyll, and Archibald Campbell, Earl of Ilay, in the misplaced belief that she would have influence with the Prince	DNB
1723	The Prince settled £11,500 of South Sea stock on her which allowed her to develop an identity separate from her husband and from the prince and Princess of Wales and express her interest in architecture	DNB
spring 1727	Charles, encouraged by George I, attempted reconciliation with Henrietta which would have entailed her departure from the Princess's service and her retirement to the country; the king probably saw her as one of the ties that connected the Prince of Wales to the opposition. For weeks she lived in fear of kidnapping after Howard procured a warrant for her arrest	DNB
Jun 1727	The death of George I made Henrietta's position safer, and her husband was bought off by an annuity of £1200, paid by Henrietta but largely provided by the new king	DNB
1727	Henrietta fell out with Swift: '... I never did desire you to talk of marrying me. I had rather you & I were dumb as well as deaf for ever than that should happen ... I have been a slave for 20 years without ever receiving a reason for any one thing I ever was obliged to do...'	DNB; BM Add Mss 4805 f160
Feb 1728	Henrietta was divorced from Charles	NRS 22956 Z76
1728 or 1729	Marble Hill House was finished allowing her to entertain friends like Pope and Gay who were unsympathetic towards the court. Other regular visitors included the opposition politician George Berkeley and Charles Mordaunt, third earl of Peterborough, with whom for several years she conducted a written discussion on love. He hailed her as 'O wonderful creature! a woman of reason!', paying tribute to her as a woman who could make her own way in a man's world.	DNB

Date	Events	Source
About 1729	She did not enjoy her place as a servant to Queen Caroline, where her labours both physical and social were aggravated by her deafness	DNB
1731	Henrietta and Swift's relations continued to be troubled. She wrote to him: 'You seem to think you have a natural right to abuse me because I am a woman and a Courtier; I have taken it ... with great resentment and a determined resolution of revenge ... Think to my joy to hear you suspected of folly ... I expect to hear whether peace shall ensue or war continue between us'	DNB; BM Add Mss 4806 f44
1731	Charles Howard became ninth Earl of Suffolk, and so she was promoted to mistress of the robes, which reduced her duties but increased her salary, relieving her of the fear that she would have to sell Marble Hill and allowing her to spend more time there. She continued to attend court and maintained her relationship with the king, but, to the disappointment of her admirers, her political influence was minimal	DNB
Sep 1733	Charles died so Henrietta's hard-won liberty was no longer under threat	Complete Peerage; DNB
Oct 1734	The end of her relationship with George II. He had been annoyed by 'her constant opposition to all his measures', 'her wearying him with her perpetual contradiction' and reportedly described her as 'an old, dull, deaf, peevish beast'. His visits to her became less regular, and in October, on return from a trip to Bath, he ignored her completely.	DNB
Nov 1734	She resigned from her position as mistress of the robes. Pope lamented this as the end of the intellectual court that had gathered around Caroline when Princess of Wales	DNB; NRS 21140 75 X4, DNB
Jun 1735	Henrietta married George Berkeley, MP for Heydon in Yorkshire, at Cranford, Middlesex, and enjoyed a close relationship with him. Aside from visits to friends and continental Europe, the two divided their time between Marble Hill and her new town house in Savile Row. She continued to keep up with changes in taste and it has been argued that she was the first woman significantly to encroach 'upon the gentlemanly pursuits of a connoisseur'	Complete Peerage; DNB
1745	Her son, Henry, tenth Earl of Suffolk, died childless	
1746	Henrietta's second husband died and she took up permanent residence at Marble Hill for the first time	Complete Peerage
1750s	She took a large share of responsibility in bringing up her brother's children from his first marriage. John Hobart (born 1693), who became second earl of Buckinghamshire in 1756, sought her advice on many matters; she helped manage his domestic political interests following his appointment as ambassador to Russia in 1762, and represented his private concerns about the posting to the ministry	DNB
1752	Henrietta's niece Dorothy Hobart, whom she had raised, married Charles Hotham elder brother of William, first Baron Hotham. Their daughter, Henrietta Gertrude Hotham (1753–1816), was born the same year, and she was also involved with her upbringing.	DNB

Date	Events	Source
1760s	In later life Henrietta was befriended by Horace Walpole, who shared her interest in architecture	DNB
Jul 1767	Henrietta died at Marble Hill. Probably her closest male friend in her later years, William Chetwynd, third Viscount Chetwynd, was with her at the time. Her wealth at death has been estimated to be up to £20,000	DNB; TNA:PRO, PROB 11/933, sig. 390
1767	Horace Walpole wrote: 'I have been very unfortunate in the death of my Lady Suffolk, who was the only sensible friend I had at Strawberry. Though she was 79, her senses were in the highest perfection and her memory was Wonderful ... [she] had financial difficulties towards the end but she only mentioned them to Lord Chetwynd and HW Neverich'	Lewis: Walpole
1771	Walpole wrote: 'I have been dining at Lord Buckingham's at Marble Hill... but it was a melancholy day for me, who have passed so many agreeable hours in that house and garden with poor Lady Suffolk.	Lewis: Walpole

Acquisition and tenure

See Figure 11 below for the location of the areas mentioned.

Date	Events	Source
Mar 1724	The Earl of Ilay purchased 11½ acres of Marble Hill Shot on Henrietta's behalf, perhaps as she was nervous of her husband trying to take the land from her	Syon Mss Book K ii.I.i Letter H
Sep 1724	The Earl of Ilay purchased a further 4 acres of Dolemead and 10 acres of Plumbush shot. Together with the previous purchase this formed a continuous tract from Richmond Road to the river	
1725	Alexander Pope, Sir Robert Walpole and the Earl of Ilay, all tried to negotiate for the lease of Mr Vernon's meadow lands along the river front, but were denied	Sherburn Vol.ii; MH Deeds 08648; NRS 22977 Z78
1742	The lease of Mr Vernon's meadow lands along the river front was finally obtained	Sherburn vol ii; MH Deeds 08648; NRS 22977 Z78
1743	Her second husband George Berkeley purchased 21 acres of Vernon land	MH Deeds 8779
1747-52	Between 1747 and 1752 Henrietta purchased the 25½ acres originally purchased in 1724 by Lord Ilay, a further 1½ acres of Dolemead and a cottage next to Orleans House called Riverside	MH Deeds 8779, 8649
1748	She became a copyhold tenant of a further 7 1/3 acres	
1750	Two cottages on the later site of Little Marble Hill were let to a John Fridenberg but access was problematic following the closure of the Twelve Foot Way and led to a drawn out dispute with Henrietta	Draper 1970, 44

Date	Events	Source
1751	In order to deal with Fridenberg, Henrietta's brother acquired the way leave allowing Fridenberg access to the river and purchased about 24 acres including Fridenberg's holdings (that became hers on his death). Sometime soon after this Henrietta also transferred her holdings to her brother enabling him to take the legal case to the House of Lords.	Draper 1970, 44, NRS 85549 21 B6
1752	Henrietta acquired a new lease of the charity lands bordering the river. The deed was for a 60 year lease of all the Death Charity Lands on the decease of Mr Death. The accompanying plan shows a Summer House and a mound on the Osier Ground to the west of the house and some details of the Little Marble Hill area	MH Deeds D8649
1756-7	Henrietta's brother died with the Fridenberg case unresolved; it was not until a year later that he was defeated and ejected	Draper 1970, 45
1767	Following Henrietta's death Marble Hill went into trust and then to her nephew, the 2nd Earl of Buckinghamshire but the bulk of her estate passed to her great-niece Henrietta Hotham	DNB
1767	The house may have been neglected; Walpole mentions Henrietta's financial difficulties (above) and, whilst trying to find a property in the Twickenham area for a friend, wrote that he 'knew of none but my lady Suffolk's which Lord Buckingham talks of letting, but ... it will cost you 2-3 thousand pounds to put it into repair'	Lewis: Walpole
1784	The Earl of Buckinghamshire let some land (presumably in West Meadow) to a Mr Hardinge: 'you seem to enjoy so much happiness in your little territory that it is almost a duty to accomodate you. You shall therefore have the remainder of the field up to our crossing from the Ice House to the Sweet Walk, which walk cannot be parted with, as we are particularly fond of it. The quantity of land is estimated at more than six acres'	NRO/NRS 21089
1793	The Earl of Buckinghamshire died and Henrietta Hotham succeeded to Marble Hill. She let 'Great' Marble Hill to, amongst others, Mrs FitzHerbert, Lady Bath and Charles Augustus Tulk. Walpole wrote: 'Miss Hotham has given warning to Mr Pigou to quit the smaller and far more beautiful house at Marble Hill, intending to inhabit it herself'	Complete Peerage; Cobbett Ratebooks; DNB; Walpole's Correspondence
1794	Walpole wrote: 'She (Mrs FitzHerbert) has taken Marble Hill and proposes to live very platonically under the devout wing of Mrs Cambridge'. She occupied Marble Hill until 1795.	Walpole's Correspondence

Date	Events	Source
1797	Ironside wrote: 'It was the residence of the late Earl of Buckinghamshire, on whose descease it came by the will of the late Countess of Suffolk to Miss (Henrietta) Hotham, daughter of the late Sir Charles Hotham, during her life; then again reverts to the Earl of Buckinghamshire; (and is now occupied by Mrs. FitzHerbert). Near Marble Hill, and close to the river, is a sweet little box, distinguishable for the elegance of its situation, late belonging to Daniel Giles Esq who much enlarged and improved it, as well as the gardens ... late the residence of Lady Diana Beauclerk'. The latter presumably a reference to Little Marble Hill	Ironside's Twickenham 1797
1816	Henrietta Hotham died and the 5th Earl of Buckinghamshire succeeded. He also let the property; firstly to Charles Tulk [presumably a renewal of the lease] and then to Edward Fletcher	Cobbett
1816	Brewer wrote: 'On the east side of the building is a small but tasteful Cottage which was originally the china-room of the Countess of Suffolk ... now the residence of Charles Augustus Tulk Esq'	Brewer, J N 1816 London & Middx Vol IV
1824	The 5th Earl and his brother Rev Augustus Hobart, later the 6th Earl, decided that they did not want Marble Hill and they therefore broke an entail on the estate and sold it to Timothy Brent, who moved into Little Marble Hill	MH Deeds 08779, 08665, 08650, 08651
1825	Brent sold Marble Hill House and all the land, except the East Meadow, to Jonathan Peel, the younger brother of Sir Robert Peel	MH Deeds 08779, 08665, 08650, 08651
1876	Jonathan Peel purchased the freehold of Little Marble Hill and the adjoining land, reuniting it with the rest of the park	MH Deeds D8665
1879-87	Colonel Peel died but his widow continued to live at Marble Hill until her death in 1887	Richmond and Twickenham Times: 13 May 1887
1890	Sales notice in July for 66½ acres	The Builder: 5 May 1988
1898	Marble Hill was purchased by the Cunard family who planned to develop most of it as a housing estate	MH Deeds 08665
1902	Marble Hill was purchased by London County Council, Richmond Corporation, Surrey County Council and Twickenham Urban District Council, amongst others to save it from development	MH Deeds 08665 DNB (Kilburn 2008)
1903	Marble Hill Park was opened to the public	
1965-6	The house was restored to a close approximation of its appearance in Lady Suffolk's day	DNB (Kilburn 2008)

Date	Events	Source
1986	Marble Hill House and Park came under the care of English Heritage	

The house and grounds

Date	Events	Source
1723	A letter from Mrs Howard to John Gay refers to 'the Plan you found in my room' but 'There's a Necessity, yet, to keep the whole affair secret, tho' (I think I may tell you) it's almost intirely finish'd to my satisfaction.' What appears to be a sketch design by Colen Campbell for Marble Hill House is preserved at Wilton and a version of this design appears in Vol 3 of Campbell's Vitruvius Britannicus (1725).	BM Add MSS 22626 f.29 Wilton Mss.
?1723	Letter from Lord Peterborough to Pope: 'I intended to waite on Mrs Howard today ... I was impatient to know the issue of the affaire, and what she intended for this autumn for no time is to be lost ... if she intends to build out houses and prepare for planting' and presumably with this in mind 'Pray doe me the favour to send me the breadth and depth of the Marble Field, you may have itt measured by moon light by a Ten foot rod, or any body used to the grounds will make a neer guesse by pushing itt overs.'	BM Add Mss 4809
Jun 1724	Work on the house commenced; Roger Morris was contracted as builder, he was probably advised on design by Henry, Lord Herbert, later 9th Earl of Pembroke	DNB (Kilburn 2008)
1724	Pope and Allen, Lord Bathurst, contributed to the design of the gardens, but they were principally realized by Charles Bridgeman.	DNB
1724	Pope to Martha Blount about his plans for Marble Hill: '... don't let any lady from hence imagine that my head is so full of any Gardens as to forget hers. The greatest proof I could give her to the contrary is, that I have spent many hours in studying for hers & in drawing new plans for her'	
Sep 1724	Pope wrote to Fortescue; 'Marble Hill wants only its roof - the rest is finished'; this was the 'naked Carcass' that Morris was instructed to build	Sherburn vol.ii
Sep 1724	Pope wrote to a friend: 'My gardens improve more than my writings; my head is still more upon Mrs Hd and her works, than my own...'	Sherburn , Vol.ii pp 256-7
Sep 1724	Pope and Bridgeman visited Marble Hill with Mrs Howard	BM Add Mss 4809 f.141v
Late Sep 1724	Bridgeman wrote to Pope that he had 'begun on the plann, have not (lef)t from that time to this so long as I could see, nor shall (I) leave it till 'tis finish'd which I hope will be about tomorrow Noon'	BM Add Mss 4809 f.141v
Oct 1724	Lord Bathurst sent some lime trees to Twickenham, for Pope's villa or Marble Hill or both	Sherburn, Vol.ii pp 262-3
1724	Receipts for money paid to Morris by the Earl of Ilay for building at Marble Hill: £200 in June, £200 in August and £100 in December. Morris' bill in September to Lord Ilay for carpenters' work: fencing and gates for the meadows with stiles and stops on the Thames side and a grindstone, trough and garden roll 'by the order of Mr Pope', and also mentions a Mount, a Bowling Green and a Yew hedge	NRO Hobart MSS NRS 8862 21 F4

Date	Events	Source
1724	Mrs Campbell wrote to Mrs Howard: 'I suppose you are up to the ears in bricks and mortar'	
1725	Two further receipts from Morris for money received from the Earl of Ilay for building Marble Hill: £100 in February and £100 in July.	NRO Hobart Mss NRS 8862 21 F4
Mar 1725	Two farmers surveyed damage done to Mr Vernon's land by Mrs Howard's newly planted trees: 48 trees in the 'Wheat field' caused two pence damage each and 74 trees in the 'Ditch and Meadow' caused a penny's damage each	NRO Lothian Mss MC3, 608 516x8
1725	Pope wrote to Lord Bathurst 'let him (as the Patriarchs anciently did) send flocks of sheep & Presents in his stead: For the grass of Marble Hill Springeth, yea it springeth exceedingly & waits for the Lambs of the Mountains ... to crop the same Till then, all Mrs Howard's Swains Must feed - no flocks, upon - no plains.'	Butt: Pope 2:292
1726	James Richards, the master carver at the Office of Works, carved mouldings for doors, windows and frames.	NRS 8862 21 F4
1726	Pope wrote to Mrs Howard congratulating her 'upon the encrease of your family, for your Cow is this morning very happily deliver'd of the better sort, I mean a female calf..' Pope celebrated this event with friends at Marble Hill: 'Mrs Susan offer'd us wine upon the occasion, and upon such an occasion we could not refuse it. Our entertainment consisted of flesh and fish, and the lettuce of a Greek Island, called Cos' this last no doubt produced in the kitchen garden	Butt: Pope 2:435-6
1726/7	The House appears to have been inhabitable: Swift wrote to Henrietta 'I hope you will get your house and wine ready, to which Mr Gay and I are to have free access when you are safe at Court'. Pope wrote 'we will take up with what we can get that belongs to you and make ourselves as happy as we can in your house'	BM Add Mss 22625 ff. 13-14
Early 1727	Work on the house seems to have stopped altogether for a time, perhaps due to the attempted reconciliation by her husband and her fear of kidnapping mentioned above	DNB
1727	Jonathan Swift wrote his Pastoral Dialogue between Richmond Lodge and Marble Hill which contains a description of the estate. The rather bitter tone suggests it post-dates his falling out with Henrietta. "My House was built but for a show, My Lady's empty Pockets know: And now she will not have a shilling To raise the stairs or build the ceiling. (23-26) ... No more the Dean, that grave Divine, Shall keep the Key of my (no) wine; My Ice-house rob as heretofore, And steal my Artichokes no more; Poor Patty Blount no more be seen Bedraggled in my Walks so green:	Miscellanies in Prose and Verse, Vol.5, 1735, P.451

Date	Events	Source
cont...	Plump Johnny Gay will now elope; And here no more will dangle Pope. (43-50) ... Then, let him care and take a nap, In Summer, on my verdant lap: Prefer our Villaes where the Thames is, To Kensington or hot St James's; Nor shall I dull in silence sit; For, 'tis to me he owes his wit; My Groves, my Echoes, and my Birds, Have taught him his poetic Words. We Gardens, and you Wildernesses, Assist all Poets in Distresses, Him twice a Week I here expect, To rattle Moody for neglect. (85-96)"	
1728	Two receipts from Morris for money received from Henrietta: £200 in August and £200 in December for finishing the principle story (plus the sweep walls and four buildings in the garden)	NRO Hobart MSS NRS 8862 21 F4
1729	Two further receipts from Morris for money received from Mrs Howard: £200 in April, and £763 in June, for finishing all work done at her house in Marble Hill	NRO Hobart MSS NRS 8862 21 F4
1731 on	Undated Gardeners' accounts and documents refer to the Ice House, Orange Tubs, grass and gravel, Wilderness Quarters, Sweet walk, Nursery, Plantations, flower seeds for the Borders, etc	NRO Hobart MSS NRS 8862 21 F4
1738	Horace Walpole wrote of Marble Hill: 'of flowery Lime or Elm Tree green before some decent Villa seen, In seemly now: some yonder Seat Fair Howard's elegant retreat'	Lewis: Walpole
1739	Lady Suffolk wrote to Lord Pembroke that 'My Cheney room will make you stare if not swear tho' I must tell you 'tis the admiration of the Vulgar ...'. The 'China Room' was a two-storey cottage east of the house, the first floor of which was for displaying china. The letter suggests that it couldn't have been built much earlier. It was later joined to the main house by a Service Wing Also: 'I am at this time over head and ears in shells. I wish I had Ribs head and hands to assist me.' Suggests work on a grotto	Wilton MSS
1739	Roger Morris was paid £200 for unspecified work, possibly related to Lady Suffolk being 'head over ears in shells' that year	Ashmolean Museum Gibbs Collection Vol.ii f91b
1742	George Grenville wrote to Lady Suffolk sending compliments 'to the inhabitants of the Grotto (which ... I hope goes on prosperously)'. F57	BM Add. MSS 22628
1750-1770	The Thames at Marble Hill became tidal	

Date	Events	Source
1750-1	Alterations were made by Matthew Brettingham, including: 'venetian window in ye wall next Garden glaz'd with Crown Glass'; 'naked framing & boarding for collonade in front of Kitchen' Work in the grounds included: '½ day covering cespool of the drain at Marble Hall; making circular kerb for new well'	NRS 8862 21 F4
1750s	A note records produce sent up to the Savile Row house from the kitchen garden and dairy at Marble Hill, including: green vegetables, herbs, grapes and walnuts	
1752	Bill for supplying materials for the bee house	NRS 8862 21 F4
1752 -1767	Mention of a 'sweet walk nursery': 'Proposals for Keeping the Gardens of the Rgt+ Honble Countess of Suffolk at Marble Hill By the Year 'I undertake to keep all the pleasure ground about ye house that to say grass and gravel Wilderness Quarters Trees & Shrubs, to find all Labour Tools and materials for carrying on ye same, the sweet walk nursery and plantations about Monpiller Row, to Keep ye same clean and Hansom, the nursery to be planted and stock[e]d with what cuttings ripe seeds, our own garden & plant[at]ion will addord in these proper seasons.'	An Estimation for the cost of maintaining gardens (NRO 22)
1757-8	The Gothick 'Priory of St Hubert' was built to a design by Richard Bentley. Walpole gives an account of it: 'The Gothic farm at Lady Suffolk's at Marble Hill, Twickenham called the Priory of St Hubert's (from Hobart, her maiden name) was partly designed by Mr Bentley, particularly the spire, but she caused it to be executed too low. The South side of the imaginary church there was designed by Mr Walpole. The two square little towers were Lady Suffolk's own'; it functioned as a barn for the Marble Hill farm. It was pulled down after Lady Suffolk's death.	Drawing in Lewis: Walpole
June 1758	Walpole wrote to John Chute: 'My Lady Suffolk has at last entirely submitted her barn to our ordination. As yet it is only in Deacon's orders; but will very soon have our last imposition of hands ...'	Lewis: Walpole
1760	'The Countess of Suffolk's 'Is most properly stiled Marble Hill, for such it resembles, in a fine green lawn, open to the River, and adorned on each side by a beautiful Grove of Chestnut Trees; the House is as white as Snow, a small building without wings, but of a most pleasing Appearance; the Garden is very pleasant; there is an Ally of flowering shrubs, which leads with an easy Descent down to a very fine Grotto; there is also a smaller Grotto, from whence there is a fine view of Richmond Hill'.	Anon
1764	Description from river tour: 'But among all the Villas of this neighborhood, Lady Suffolk's, wh we sail past, on the left, a little below Twickenham, makes the best appearance from the river. It stands in a woody recess, with a fine lawn descending to the water, & adorned with wood well-disposed ...'	Gilpin Mss p.25 1764 V & A

Date	Events	Source
1765	Henrietta Hotham, Lady Suffolk's great niece, whilst staying at Marble Hill wrote to her parents saying that she had "Worked so hard in the Grotto and Rock that it is fear'd I shall damage my fingers ..."	Pickering: Hothams
1770	Work was carried out on the Summer House on the edge of the West Avenue to the south of the House for the Earl of Buckinghamshire; it can be seen on the 1786/7 Sauthier map	NRO Hobart MSS NRS 8641 21 C4 Syon MSS
1773	Lead and wash was supplied to the 'Summer House on the lawn the waterside front'.	NRO Hobart MSS, NRS 8641 21 C4
1773/4	The Summer House was painted: 'Summer House Does Shuts; also the Iron palasades by Hot House'	NRS 8641 21 C4
1781	Repairs were carried out for the 2nd Earl of Buckinghamshire to an alcove seat, to common benches and 650 yards of post and rail fence between the field and the Sweet Walk	NRS 8641 21 C4
1782	Recorded the house as 'adorned on each side by a beautiful group of horse chestnut trees... has a beautiful grotto to which you are conducted by a winding alley of flowering shrubs'.	'The Ambulator'
1785	Earl of Buckinghamshire wrote to Mr Hardinge asking him to remove a clump of fir trees that he had planted and which would interrupt the view of the river from the Summer House. He also asked him to keep his fowls under control because they were destroying flowers and 'occassion other inconveniences'. Finally he asked him to remove the embankment that Hardinge was creating along the river, which would again ruin the view. Mr Hardinge replied that: 'if (he) had considered either the bank or the clump as any obstructions to your view I should not have been so indelicate or so imprudent as to have directed them without previous consent'	NRO/NRS 21089
1786	The Earl's gardener informed him that Thomas Dean of Montpelier Row had 'yesterday set his gardiner to cutt the boughs of the trees in the Sweet Walk which hang over the pales facing his house', he also had a chestnut and young elm topped. The Earl wrote to the Chancery Office hoping to prosecute because Dean had not asked for permission: 'The branches do not grow over the highway which is so wide that the grass grows under them, nor tho. I have known the place from a child, did I ever hear of their being cut before'	NRO/NRS 21089
1816	James Brewer: 'The grounds are of a pleasing character, and contain much venerable wood ... A grotto, once of much celebrity for the beauty of it's spars, and the felicity with which they were arranged, is now forsaken and delapidated; but aged elms, which Pope particularly admired ... are still carefully preserved and flourishing'	Brewer London & Middx Vol IV 1816
1827	The original stable block was demolished when the new (existing) stable block was completed	MH Deeds 08779
1832	Account of Marble Hill: the lawns 'open down to the water and only divided from the walk in question, (that beautiful terrace running by the river), by an ha-ha'	Richmond and it's Surrounding Scenery

Date	Events	Source
1842	Marble Hill: 'The house has a magnificent lawn before it: magnificent Chestnuts in the foreground whose boughs nearly overhang the public walk, are covered in spring with an immense profusion of blossom, and are the admiration of all the country around'	Handbook to Richmond and Twickenham
1850	Marble Hill: 'The carriage road enters a long shady grove and sweeps up to the north front entrance which is adorned with the finest Portugal laurels in this country ... North Park bounded by plantations of evergreen oak, elms and other forest trees of large dimensions ... to the South Front is a terrace walk, a lawn as smooth and level as a bowling green encompassed on each side by masses of evergreen shrubs retiring amongst groves; on a lower level is a flower garden on grass, then the park slopes down for a considerable distance to the bank of the Thames ... The terrace is 200 yards long crossed at right angles on the east point by a broad walk running North-South through a large grove. The North end of this walk is bounded by an Orange house and the South by a few trees that impede a view to the river.'	Keene Beauties of Middlesex
About 1874	Little Marble Hill (also known as Spencer Grove and Marble Hill Cottage) was demolished	MH Deeds D8665, D8651
May 1887	Auction of 'the valuable HERD of Pure-bred (pedigree) JERSEY CATTLE, comprising 13 cows, 2 bulls, 5 calves, and 4 heifers...' part of the estate of Lady Alicia Peel	Richmond and Twickenham Times
July 1887	Auction of 'valuable items from the gardens including: a variety of chairs, palms, aloes, azaleas, oranges, lemons, choisya, bee house and hives, euonymus etc and 'a pair of large stone flower vases on pedestals end of flower beds'	Christies Catalogue: 19 July 1887
1887-98	Marble Hill House was unoccupied	
1890	Sales particulars described the estate: 'The delightful ornamental grounds adorned with some stately timber, and ranging to the East and West of the Mansion and approached by Broad Gravelled Walks skirted by Luxuriant Shrubberies and Flower Beds while to the South front is a fine expanse of lawn with Italian Garden and an avenue of lofty trees'	The Builder: 5 May 1988
Feb 1900	Marble Hill: 'The gardens and groves are a very tangle ... on the river front is an arrangement of groves and gardens so overgrown as to be only traceable with difficulty ... the layout, which though very late in date, is good and compact and simple'	F Inigo Thomas, Country Life Illustrated 24/2/1900
1903	The house served as a tea-room for the public park	
1909	The Servants' wing connecting the China Room to the house was demolished. It was larger in area than the house and had two venetian windows in its east wall and a colonnade	
1965/6	Marble Hill House was restored by the Greater London Council.	

Appendix 2: Historic maps and plans used in this research

The following are the main maps and plans of the Marble Hill area used in the landscape analyses described in this report. Dates given in headings are of publication. Where dates of survey are known they are given in the text.

1635: The Glover view

The charming but broad brush 1635 Glover map of 'Istleworth Hunderd' (Figure 64) shows the landscape prior to enclosure of many of the area's open fields. A detail of the Marble Hill area is reproduced as Figure 6.

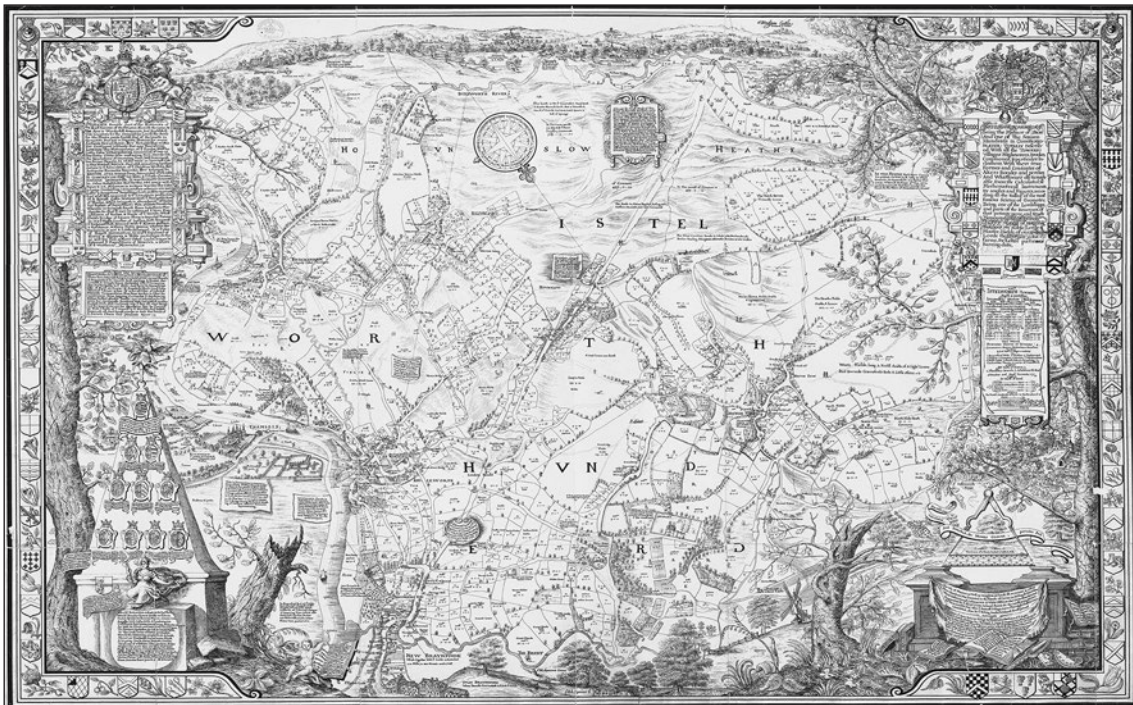


Figure 64 - Facsimile by E Stanford (1876) of 'Istleworth Hundred being the Mannor of Sion and one of the seven Hundreds in Comita Middlesex: totally described ...' by M Glover 1635 (© British Library Board (Maps 189.a.11), with permission)

1711: The Earl of Mar's 'Scatch'

The 1711 'Scatch of the Grounds at Twickenham...' by the Earl of Mar (Figure 65) seems to be a reliable, though rough, map of the field layout following enclosure and shortly before the development of the site. On the 'scatch' the basic layout of fields is depicted with those to the north and west shown as corn fields, those to the east as fruit and kitchen gardens and those to the south as meadows. These last seem to be as shown on the 1635 map. In the south-east corner of what would become Marble Hill Park is a group of three buildings within closes, apparently labelled 'The Hatters'.

There is an overlay attached to the 1711 map dated 1719 that shows a design for the grounds implying that he had intended to build here (Figure 66). However, following the 1715 Jacobite rebellion he had to flee to Paris where he fell victim to



Figure 65 - Detail from 'Scatch of the Grounds of Twitinhame from the Earle of Straffords to Richmond ferry & also the Grounds of Ham. Octob: 1711' by John Erskine, Earl of Mar (National Record of Scotland RHP13256/67B)



Figure 66 - Detail showing the 1719 overlay to the 'scatch' above (National Record of Scotland RHP13256/67A)

homesickness. In the winter of 1717 he recorded that he would ‘die ... were it not for building castles in the air of several kinds’ (quoted in Ehrenstein 2015), which has been taken to suggest a ‘renewed enthusiasm for architectural drawings’ (Ehrenstein 2015). In this context it seems more likely that his plans were simply a diversion to alleviate boredom. He was briefly in England in 1719 though, so this particular ‘castle’ may have been more grounded, but he was arrested in Geneva in May and was back in Paris by 1720 (Ehrenstein 2015).

There is also a larger more detailed plan (Figure 67) which is inscribed on the back:

‘Designe for a House, gardens & Park near by Twintinham, in the fields betwixt Mr Johnston’s & Sr James Ash’s grounds east & west & the road from Twitinhame to Richmond ferry & the River Thames to south & north.

The middle line of the Avenue and gardens to be parallel wt the Avenue of Ham.

Drawn at Postoia April 23rd 1719

C

[and in smaller script beneath:]

& some alterations made in it at Geneve Oct 1719

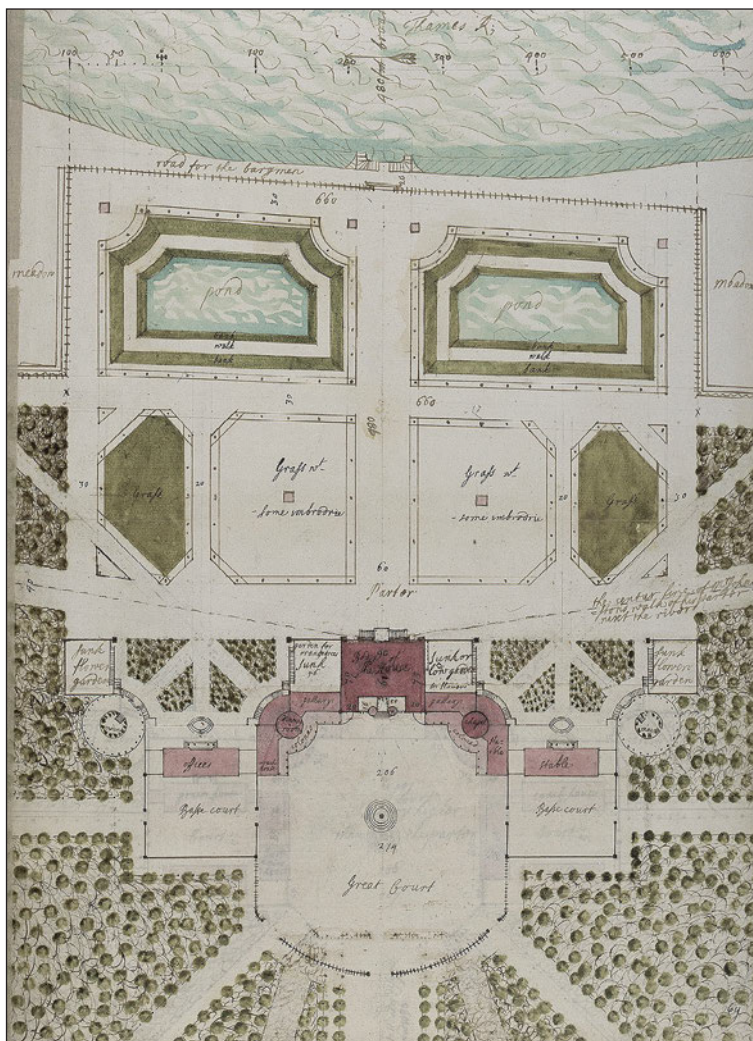


Figure 67 - ‘Designe for a house...’ north to bottom (National Record of Scotland RHP13256/68)

About 1724: Garden design attributed to Pope

This plan (Figure 14) is anonymous and undated but has recently been confirmed to be by Alexander Pope and though to date to 1724, based on references in his letters. It is unclear how much, if any, of this plan was ever implemented but this is discussed in more detail above.

1746: Rocque

The 1746 Rocque map (surveyed 1741-5) is rather too small scale to provide much information other than the local context (Figure 68), though the 1754 Rocque map below is even smaller scale. The house is shown with an avenue running south from it to the river and with roughly parallel avenues to east and west running from further north also to the river. The three buildings shown as the Hatters on the 1711 plan appear together with another building to the east. 'The Glass House' runs above all four but as it is singular and later Rocque plans (such as 1754 below) show the text to the east it seems likely that it only refers to the eastern building.

1752: Deed plan

This plan (Figure 69) shows the southern part of the Marble Hill area in a rather stylised form, from two houses to the east of Orleans House and west of Marble Hill Park, apparently the focus of the deed, to two buildings on the later site of Little Marble Hill the western identified as 'Mr Fridenberg's' and the eastern as 'Mr Barlow's'.

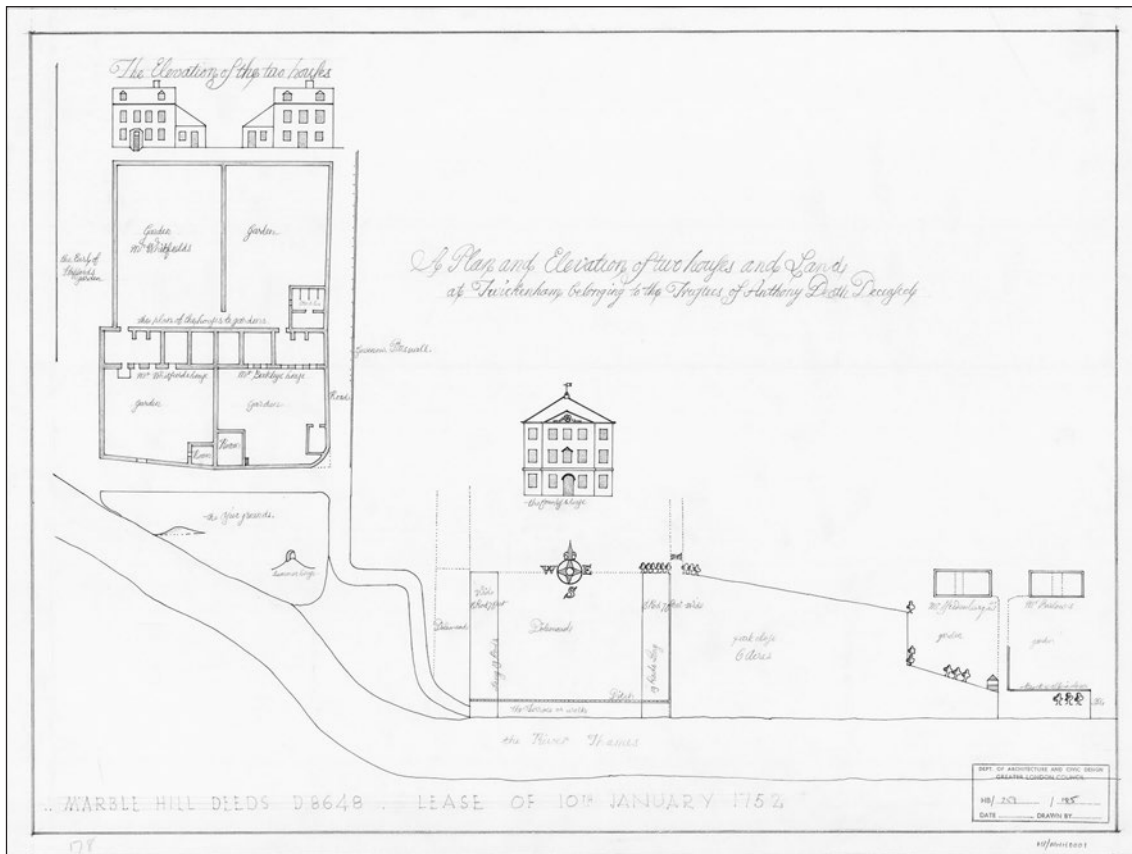


Figure 69 - Tracing of Marble Hill Deeds plan (London Metropolitan Archive D8649) from Historic England Archive Map Room MP/MHH0001

About 1752: Plans of Marble Hill Park

These plans are anonymous and undated but they are thought to have been drawn up as part of the drawn out dispute between Henrietta Howard and John Fridenberg, perhaps at the instigation of her brother John, Earl of Buckinghamshire. He acquired land in the area and the Countess surrendered her property to him in 1752 allowing him to take over the legal case as a lord. If so, it is likely that the plans were accurate as they would have required legal weight.

In relation to the current English Heritage project these are the key plans of Marble Hill House and its grounds and are to be used as the basis of the reconstruction of the 18th-century gardens. Two versions exist, one probably a draft for the other. Although very similar their differing condition and drawing styles allow some features to be seen more clearly in one rather than the other. For these reasons the draft map is shown in detail here (Figure 70 to Figure 72) in addition to the final plan which is reproduced above as Figure 11 with details as Figure 12 and Figure 13. Figure 73 shows the damaged area in the south-east corner of the park, later the site of Little Marble Hill.

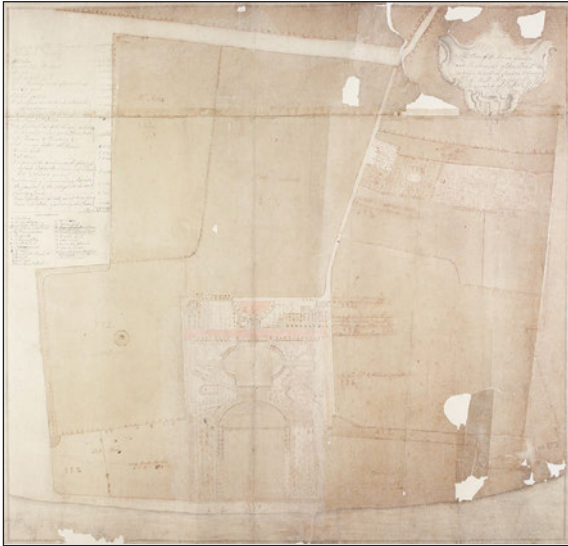


Figure 70 - The draft plan, note its faded condition (reproduced with permission of the Norfolk Record Office NRO MC184/10/2, rights reserved)

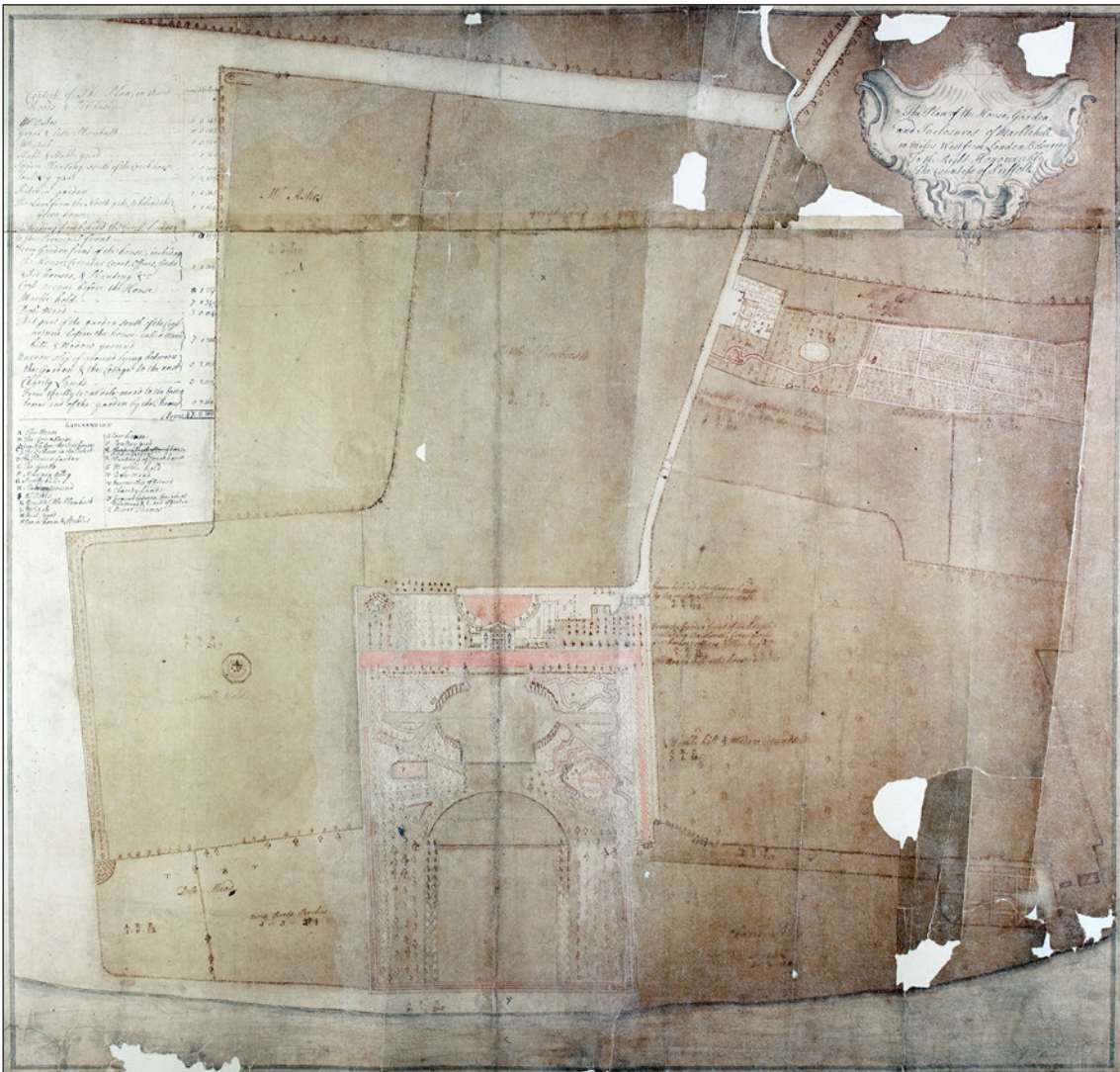


Figure 71 - The draft plan tone enhanced for clarity, the basis for details below (reproduced with permission of the Norfolk Record Office NRO MC184/10/2, rights reserved)

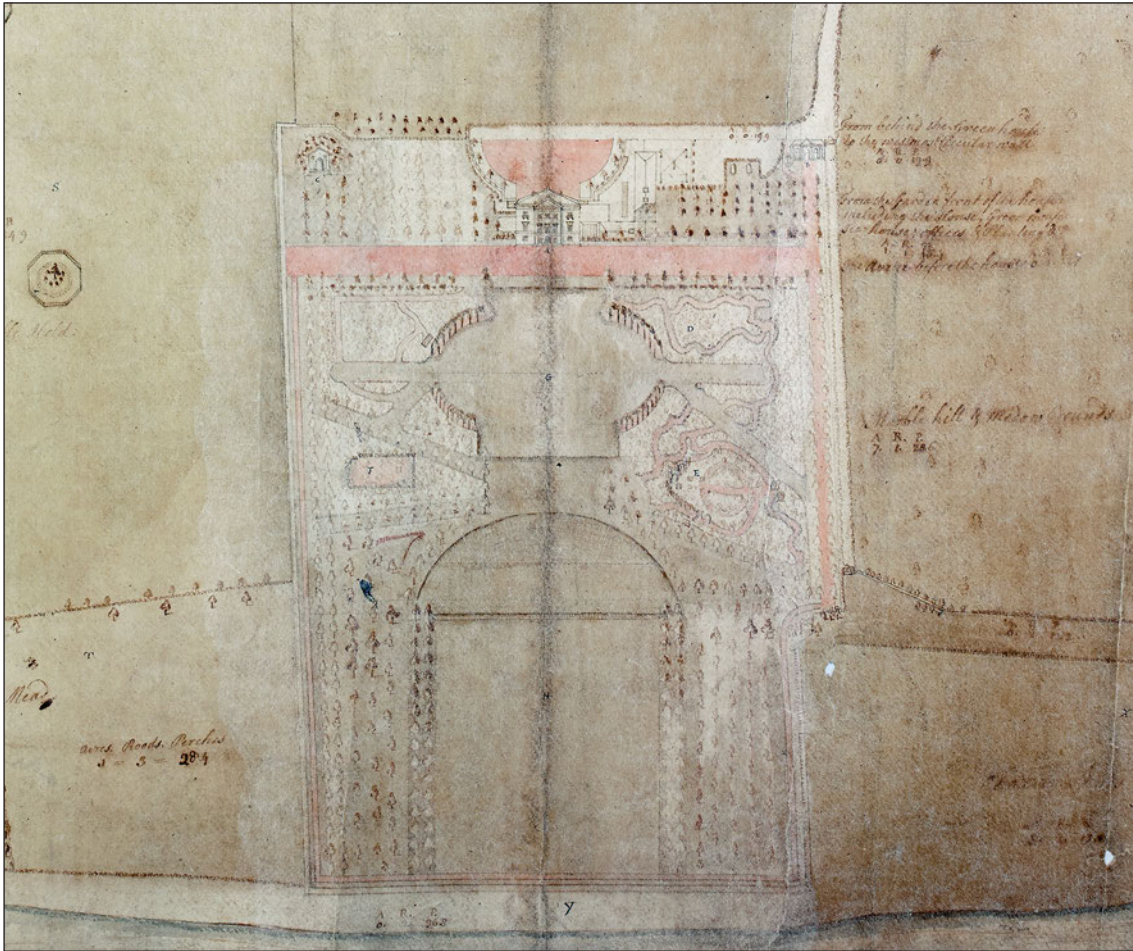


Figure 72 - Draft plan, detail of Pleasure Grounds (reproduced with permission of the Norfolk Record Office NRO MC184/10/2, rights reserved)



Figure 73 - Details from the draft (left) and final (right) plans of the Little Marble Hill area in the eastern corner of the park (reproduced with permission of the Norfolk Record Office NRO MC184/10/2 and NRO MC184/10/1 respectively, rights reserved)

1754: Rocque map

This map was printed on 4 sheets at a scale of approximately 1:32,500 (1 mile = about 2 inches). It is rather small scale to be very useful.

Note that from the information in the British Library catalogue the 1757 Rocque map would appear to be reduced from the 1754 Rocque map to allow publication on a single sheet. At a scale of about 1:65,000 (1 mile = 1 inch) it is likely to show even less information than the 1754 map and was not used.

1786/7: Sauthier map

The 1786/7 Sauthier map (Figure 15) is of about the same scale as the 1746 Rocque map but provides a little more detail on the layout of the grounds at this time. This map is also to be used by the English Heritage Trust to inform the reconstruction of the 18th century garden.

1819: the Greenwood map

The 1819 Greenwood map of Middlesex (Figure 16) is again rather small scale but provides some information on the layout of the grounds at this time, though its reliability at this level is questionable.



Figure 74 - 'A Topographical Map of the County of Middlesex' by John Rocque, 1754
(© British Library Board (Maps 175.t.1.(2), with permission)

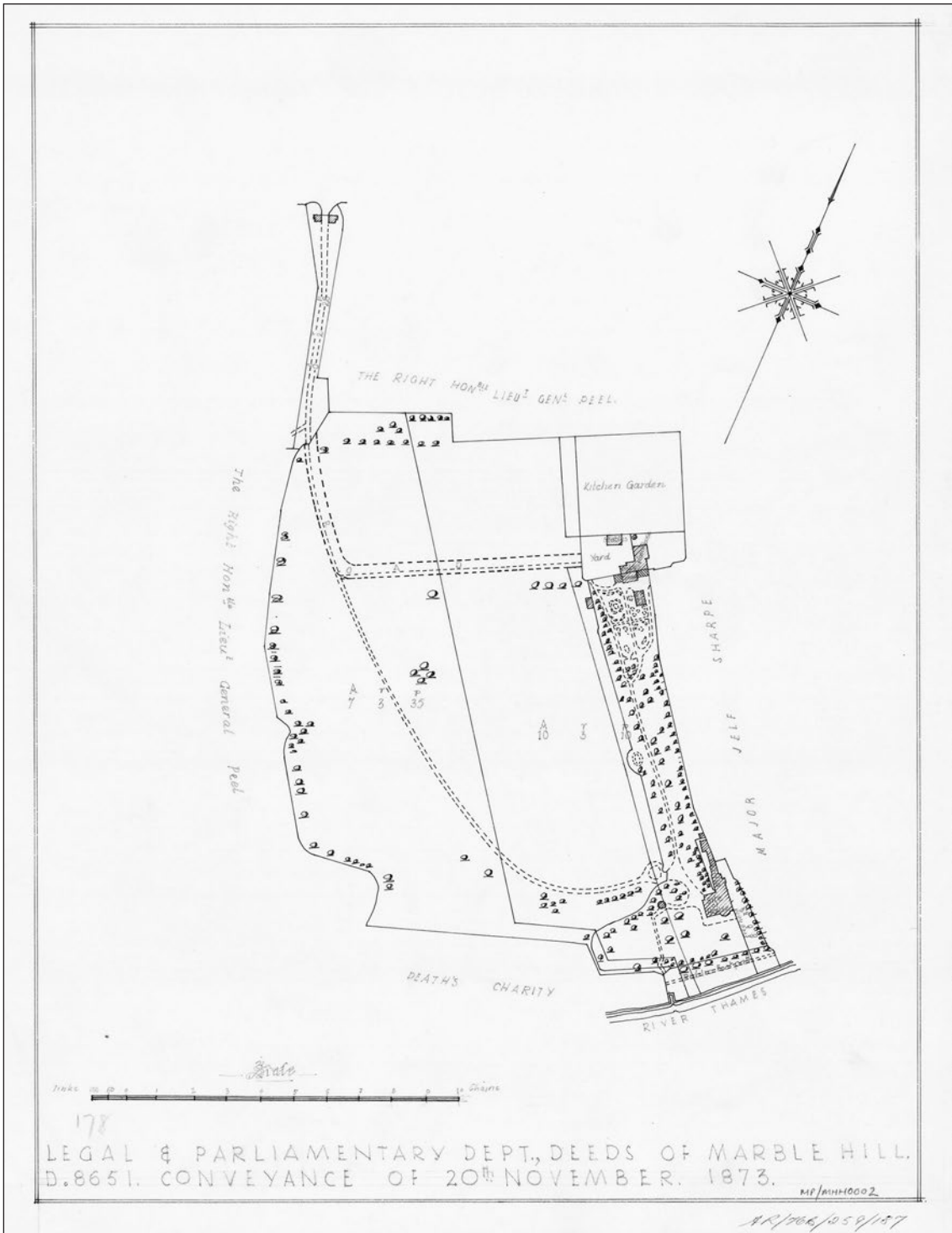


Figure 76 – Tracing of 1873 Deed Plan (Historic England Archive Map Room MP/MHH0002, original in London Metropolitan Archive; Marble Hill Deeds D8651)

Ordnance Survey maps

From 1871 there are 25 inch and 6 inch to the mile OS county maps (equivalent to approximately 1:2500 and 1:10,000 modern maps). Marble Hill lay in Middlesex but due to its proximity to the Thames it is also shown on some Surrey 6 inch and 25 inch maps and on London maps when published.

Epoch	Edition	Sheet	Surveyed Revised	Published
1	6"	Middlesex XX Surrey VI	1863-4 1867-8	1869 1871
	25"	Middlesex XX.12 (N) & 16 (S)	1863	1866
2	6"	Middlesex XX Surrey VI London IX.SE	1891-94 1893-4	1896 1898 1894-6
	25"	Middlesex XX.12 & 16		
3	6"	Middlesex XX.SE Surrey VI.NE London M	1912 1910-12 1910-11	1920 1920 1920
	25"	Middlesex XX.12 & 16		
4	6"	Middlesex XX.SE Surrey VI.NE	1934-5 1933	1939 1935
	25"	Middlesex XX.12 & 16		
	6"	Middlesex XX.SE Surrey VI.NE London M	1938 1938	1944 & 1946 (w NG info) 194? & 1947 (w NG info)
	25"	Middlesex XX.12 & 16 National Grid		
5	1:10,000	TQ17SE		
	1:2500	TQ1773	1959	1960



Historic England Research and the Historic Environment

We are the public body that looks after England's historic environment. We champion historic places, helping people understand, value and care for them.

A good understanding of the historic environment is fundamental to ensuring people appreciate and enjoy their heritage and provides the essential first step towards its effective protection.

Historic England works to improve care, understanding and public enjoyment of the historic environment. We undertake and sponsor authoritative research. We develop new approaches to interpreting and protecting heritage and provide high quality expert advice and training.

We make the results of our work available through the Historic England Research Report Series, and through journal publications and monographs. Our online magazine Historic England Research which appears twice a year, aims to keep our partners within and outside Historic England up-to-date with our projects and activities.

A full list of Research Reports, with abstracts and information on how to obtain copies, may be found on www.HistoricEngland.org.uk/researchreports

Some of these reports are interim reports, making the results of specialist investigations available in advance of full publication. They are not usually subject to external refereeing, and their conclusions may sometimes have to be modified in the light of information not available at the time of the investigation.

Where no final project report is available, you should consult the author before citing these reports in any publication. Opinions expressed in these reports are those of the author(s) and are not necessarily those of Historic England.

The Research Report Series incorporates reports by the expert teams within the Research Group of Historic England, alongside contributions from other parts of the organisation. It replaces the former Centre for Archaeology Reports Series, the Archaeological Investigation Report Series, the Architectural Investigation Report Series, and the Research Department Report Series

River Thames

0 100m

