

# HCP 144

## Apartment 39 Railings Conservation Project

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*An Archaeological Evaluation Report*



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*Alexandra Stevenson*

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# Contents

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1. Location and Scope of Work .....	2
2. Historical Background .....	2
<i>A Brief Historical Background of the site</i> .....	2
<i>The West Front Railings</i> .....	3
<i>Previous Archaeological Investigations</i> .....	3
3. Aims and Methodology .....	4
4. Description of Findings .....	4
<i>Trench I</i> .....	4
<i>Trench II</i> .....	5
<i>Trench III</i> .....	5
<i>Trench IV</i> .....	6
<i>Trenches V-VII</i> .....	7
<i>Trench V</i> .....	7
<i>Trench VI</i> .....	8
<i>Trench VII</i> .....	8
5. Evaluation of Results .....	8
6. Archive, Artefacts and Ecofacts .....	9
7. Illustrations .....	11
8. Appendix I .....	22
<i>Context Register</i> .....	22
<i>Photographic Register</i> .....	24
<i>Finds Register</i> .....	27
9. Appendix II – <i>Stratigraphic Matrix</i> .....	28
10. Bibliography .....	29
11. Oasis Data Form .....	30



## 1 Location and Scope of work

- 1.1 In March, June, and July 2016 a programme of archaeological investigation was undertaken within the Apartment 39 garden on the South Wing of the West Front of Hampton Court Palace, Surrey. This work was undertaken in advance of a railing conservation project and the reconfiguration of the garden. In terms of the conservation work, the railings had been heavily damaged by encroaching vegetation and soil causing extensive corrosion of the exposed metal surfaces. Associated root activity had resulted in the fracturing, bending and displacement of stone plinths.
- 1.2 In order to assess the extent of this damage and evaluate the potential impact the conservation project would have on any buried archaeological remains, four evaluation trenches were hand excavated adjacent to the railings, within the confines of the Apartment 39 garden (Fig.1). A further 3 trenches were excavated along the pathway in front of the west-face of apartment 39 (Trenches V-VII), principally to investigate whether there were any remains of an earlier pathway.

## 2 Historical Background

- 2.1 Hampton Court Palace is a Scheduled Ancient Monument (Surrey No. 83). The palace, gardens and grounds form an archaeological and historical site of national importance. The historical background to Hampton Court is well documented and will not be repeated here.

### *A Brief historical background of the site*

- 2.2 The West Front has been the main approach to Hampton Court Palace for almost five centuries welcoming droves of people of immense diversity. The view from this point, as is the case for the rest of the palace and its grounds, has been altered and has evolved greatly over the centuries, with the construction and subsequent destruction of a number of buildings, changes to the shrubberies and trees, installation of railings and formalisation of footpaths. It has also been known variously over the years as 'Long Courtyard' 'Outer Green Court' 'Outer Court', as well as Palace Yard and Barrack Yard.
- 2.3 Dominating the view is of course the Great Gatehouse, built by Cardinal Wolsey in the 1520's, which would have been an even more imposing feature 500 years ago, soaring five stories into the sky. Yet during this period of construction and redevelopment, rather than having the appearance of a majestic sweeping forecourt, it is said that the West Front was littered with a plethora of workshops and storehouses resembling something more of a building site than a grand entrance to a royal palace<sup>1</sup>. Indeed, it seems that these temporary workshop and storage buildings survived into Henry VIII's phase of redevelopment until he took it upon himself to tidy the area in the 1530's. During this period he built the Outer Gate, later known as Trophy Gate, and a wall along the north side of the space in front of the palace's West Front, thus enclosing a new forecourt.
- 2.4 The southern wing of the West Front was built between 1535 and 1536, and was used to contain a number of new lodgings as well as the palace's public latrine, which in Elizabethan times became known as the 'Great House of Easement'. The construction of this wing saw a return to the symmetry of the palace, which had been lost after the Great kitchens were built on the northern side of the palace in 1529-30. This redevelopment coincided with the construction of a new stone bridge spanning the moat, whilst further west, a series of service buildings was constructed at the closest point to the landing stages along Barge Walk, which would later be known as the Trophy Gate Buildings. A line of elms ran eastwards towards the southwest corner of the palace in front of a post and rail fence dividing Barge Walk from the palace space.
- 2.5 The next phase of this range seems to take place sometime between 1558 and 1662. A view of the West Front painted by Dirk Stoop in around 1662 (Fig.21) shows the arrival of Charles II and Catherine Braganza and features a low wall, apparently with parapets, pinnacles and beasts surrounding the apartment 39 wing. However, thus far no surviving evidence of this wall has been found.

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<sup>1</sup> Longstaffe-Gowan, T, 2005. *The Gardens and Parks of Hampton Court Palace*. Francis Lincoln. London (p.102)



- 2.6 By the time of William III's reign in around 1700 the moat was filled in and a circular sweep created in front of the palace's western façade between the northern and southern wings with three radial paths projecting westwards including a ragstone causeway leading up to the Outer Gate. The paths, causeway and sweep were all flanked with Portland stone bollards. This whole layout was presumably an attempt at imitating the *patte-d'oie* in the Fountain Garden. Several images from this period show a railing running between the two turrets on the west elevation of Apartment 39.

## *The West Front Railings*

- 2.7 During the mid-18<sup>th</sup> century records show that Apartment 39 was given over to Grace-and-favour accommodation as were the Tudor service buildings in the south-western corner of the forecourt in around the 1730's, henceforth the Trophy Gate Buildings. These were subsequently fenced off with timber and iron railings inside which small gardens were laid out. This is nicely illustrated by John Spyers' sketch from 1780 showing a peaceful village-like setting with green spaces, shrubberies, a small garden along the east-end of the buildings and a pathway stretching along their northern façade (Fig. 17). The sketch also shows an early depiction of the railings delimiting the western façade of the palace sweeping around the '*rond-point*'.
- 2.8 A later John Spyer's sketch depicting the West Front (Fig.18) clearly shows a set of simple railings in place by 1786, but these are much closer to the building than the ones that exist today. Nevertheless, the railings do seem to delimit a small garden in front of Apartment 39 with the apparent presence of trees and shrubbery behind the fence line.
- 2.9 Henry Sayer's 1841 plan (Fig. 19) illustrates some of the changes that took place from the late 18<sup>th</sup> century to the mid-19<sup>th</sup> century, including the creation of a parade ground between the causeway and the Barrack Block, which was gravelled over soon after the outbreak of the French Revolutionary wars in 1792. It also illustrates, with more clarity than the earlier Spyer's drawings, the set of railings along the southern side of the forecourt forming the first phase of the enclosed garden that we see today in front of apartment 39.
- 2.10 Further changes were made in the mid/late-19<sup>th</sup> to the early 20<sup>th</sup> century. A series of OS maps (Fig.17) show the evolution of the railings surrounding the garden in front apartment 39. By 1881-1882 the line of the fencing was extended westwards and southwards as part of Princess Frederica of Hanover and Baron Von Pawel Rammingen's extension to apartment 39 and its garden. In 1910 the eastern section of the West Front railings were curtailed by the re-excavation of the moat.
- 2.11 The railings on the West Front and Barge Walk represent a mixture of 18th-19<sup>th</sup> and 20<sup>th</sup> century styles and design. The railings surrounding the garden in front of apartment 39 are largely obscured by vegetation and are in a poor state of repair.

## *Previous Archaeological investigations*

- 2.12 In spring 2015 an archaeological watching brief (HCP129) was conducted by Fiona Keith-Lucas (Historic Royal Palaces) in association with the installation of electrical cables along the Barge Walk. The photographic record enables us to assess the foundation level of the 19<sup>th</sup> century railings along Barge Walk which is composed of stone or concrete footings systematically placed along the line of the fencing.
- 2.13 More recently in February 2016, an exploratory trench was excavated at the foot of the south-facing elevation of room number GF025 in Apartment 39 on the West Front of Hampton Court Palace. The purpose of this trial trench was to determine the extent of the foundation and the type of bedding material upon which the wall of this building lies. The trench exposed the fact that there was no foundation level, explaining the structural and conservation issues affecting the building today.
- 2.14 No other archaeological excavations or discoveries have been recorded within this area



## 3 Aims and Methodology

### *Aims*

3.1 The research aims for this project were to:

- evaluate the presence or absence of below ground archaeological remains
- understand and record any evidence of the development of the railings
- enable the assessment of the condition of the plinth stones and foundations
- Create an ordered archive of the work for deposition with Historic Royal Palaces

3.2 There is currently no intention to publish the results of this archaeological investigation. The report will be logged on the *Oasis* website and HRP will submit a summary of the project for the annual round-up section of *London Archaeologist*.

### *Methodology*

3.3 Three evaluation trenches were excavated during March 2016 and a further trench was excavated in June 2016 (Fig.1). Trench I was situated directly to the east of the moat on the south-west corner of the palace, adjacent to the gate entrance into the garden in front of Apartment 39. Trench II was located further east against the railings along the pathway linking Barge Walk with the West Front, whilst Trench III was located directly to the west of the gate entrance linking Barge walk to the garden in front of Apartment 39. The fourth trench was excavated at the intersection between the historic section of the railings and the later fence line along the West Front.

3.4 In July of the same year, three small trenches were excavated in front of the west-facing elevation of Apartment 39 in order to establish whether there existed an earlier path underlying the current one laid with Yorkstone paving slabs.

3.5 Each trench was hand dug and recorded by HRP's in-house archaeologist, Alexandra Stevenson. All archaeological layers, features and structures were cleaned using appropriate hand tools and recorded in plan at 1:20 and/or in section at 1:10. Digital SLR photographs were also taken as part of the record. A written description was created using HRP Pro Forma context record sheets. A unique-number site code was allocated to this project HCP144 and has been used to identify finds and archival material resulting from the project. Any finds recovered were exposed, lifted, cleaned and conserved and will be kept by Historic Royal Palaces and accessioned into the permanent collection. An accession number, 3910023, was allocated encompassing the physical, digital and paper archives associated with this project.

## 4 Description of Findings

### *Trench I*

4.1 Trench I was located along the West Front railings to the north of Apartment 39 and adjacent to the gate entrance leading into the garden. It measured 0.55m x 0.86m with a depth of 0.7m (Fig2). The purpose of this excavation was to reveal and record the foundation levels of the Portland stone baluster plinth (contexts 2 and 3) supporting the iron railings (context 21).

4.2 The earliest context exposed was a layer of coarse orangey brown sandy gravels (**context 8**) observed at a height of approximately 8.53m OD, this was directly overlain by two brick foundation structures, (contexts 4 and 5) (Fig.3).

4.3 (**Context 4**) corresponds to the main foundation level of the plinth stone (contexts 1 and 2). It was a north-south linear construction composed of three courses of red bricks, each measuring 55mm x 100mm x 220mm (Fig. 3). The surface of the bricks was generally smooth but with some evidence of weathering. The structure measured a total height of 0.23m. The joints measured on average 20 mm and the bonding material was composed of a soft creamy yellow sandy lime mortar. There was no pointing. Much of context 4 was obscured by the abutting structure (context 5), and it has also been truncated to the east by the later installation of a pipe, (context 10). The combination of



4.4

these factors made it difficult to see the bonding pattern of the wall, the most of the bricks appeared to be laid on edge.

(**Context 5**) was a north-south aligned structure forming a right-angle with context 4, and corresponded to the foundation of context 1 (plinth stone supporting the vertical stay). It was composed of two courses of red bricks measuring a total of 0.2m in height, and 0.35m in length. The width is unknown as it extended beyond the limits of the trench. The bricks were slightly different in appearance to those observed in the main east-west foundation wall (context 4). They had a more yellowish tinge with sharper arrises. Individual bricks measured on average 60mm x 100mm with the joints in-between measuring around 15mm. The bonding material also differed in that the sandy lime mortar was slightly coarser in consistency entirely covering the bricks in places. Whilst the structure has been badly damaged due to the encroaching vegetation and plant roots, it also seems to have been truncated as the bricks had a jagged broken appearance. As a result this structure appears very rough and untidy but would probably have originally been squared off, fitting neatly against context 4, (the main east-west foundation of the railings). Above this structure, and also overlying (context 4), were disorganised layers of limestone chips and fragments (**context 9**), which correspond to a bedding/levelling layer for the plinth stones (Fig.3). This context had a maximum depth of 0.12m.

4.5

On the main east-west alignment this context was overlain by dressed rectangular Portland stone blocks (**Context 3**) measuring 0.07m in depth. The stone was fractured and damaged due to the encroaching roots, with some parts falling away completely upon exposure. Lying directly above was a fine bedding layer (**context 12**) consisting of loose sandy silt measuring 0.03m in depth, which was followed by the baluster railing plinths (**context 2**) composed of finely dressed rectangular Portland blocks bonded together with lead caulking. Each block measured around 0.76m in length, 0.5m in width and 0.10m in depth. Faint vertical tool marks were visible on the south face. Systematically placed at regular intervals in a transversal position, were sub-rounded rectangular dressed Portland blocks (context 1), which serve as footings for the offset-slanting stay posts. The block observed in Trench I measured 0.87m x 0.45m x 0.18m and had a curved edge on the southern end with a concave west-facing profile. It overlay (context 9) and (context 5).

It was observed that the quality of the plinth stones that were visible along the fence line varied, some being more porous than others with a more whitish appearance giving the illusion of different stone types. However, it was also noted by Petrologist, Kevin Hayward (PCA) that though most of the plinths were Portland stone, there was also the presence of Derbyshire Fossil Limestone.

4.6

The railing structure as a whole was covered by the subsoil/garden soil (**context 7**), which produced a number of finds comprising of several fragments of CBM and clay pipe including a decorated fragment with a leaf pattern covering the seam of the bowl, and no spur indicating an early to mid-18<sup>th</sup> century date (Fig.7). This layer was overlain by the topsoil (**context 6**) which in part covered the upper surface of the plinth stones and the Yorkstone paving.

## *Trench II*

4.7

Trench II was located within the confines of the garden in front of Apartment 39 along the pathway between the West Front and Barge Walk (Fig.1). It measured 1.45m x 0.7m with a depth of 0.7m. The lowest deposit observed, into which a supporting up-right (context 17) has been driven, was **context 15**, composed of coarse sandy gravels containing fragments of animal bone. This may be some sort of levelling layer associated with the garden. This was overlain by subsoil or garden soil (**context 14**) composed of loose mid-brown silty sand with a depth of 0.3m, containing occasional fragments of CBM and a large quantity of clay pipe stems. These two deposits were truncated by a small linear installation cut (**context 20**) associated with the railings, which was observed in the east, west, and south facing sections and recorded photographically. The cut measured 0.13m in width with a maximum depth of 0.4m. It was filled by very loose and soft grey homogenous fine silty sand (**context 18**) and contained no finds.

4.8

This part of the railing structure did not include the historic baluster plinth. There were merely a line of pickets (**context 19**) supported by an iron crossrail at the base (context 16) measuring 0.02m wide by 0.01m deep, which in turn was supported at regular intervals by a two-pronged upright simply wedged into the ground (**context 17**) (Fig.5). The main upright was comprised of two sections



measuring 0.46m in height, which have bonded together through the process of corrosion at the bottom. Each upright section measured 0.02m x 0.05m. Connected to the eastern-most section was a bracket-like feature, the horizontal part measuring 0.21m in length whilst the vertical section measured 0.31m in height, creating the “double-pronged” upright. This particular section of the railings was entirely obscured by a dense blanket of ivy, which has led to extensive damage to the railings. Many of the pickets have corroded to such an extent that they have completely come away from the railing base (**context 16**).

## *Trench III*

- 4.9 Excavation in Trench III was limited to the cleaning of a small area along the Barge Walk railings adjacent to the gate leading into the Apartment 39 garden. This revealed one of the 19<sup>th</sup> century stone plinths supporting the railings. This section had already been excavated during the works carried out for the installation of electric cables in spring 2015 (HCP 129), so a photographic record of the foundation levels had already been made. The plinth measured 0.7m x 0.3m and was composed of limestone. This part of the railing was likely installed in 1878<sup>2</sup>. The photographic record from the HCP129 project shows the foundation level, which appeared to be made up square concrete plinths, is located c.0.4m below the current ground level (Fig.8).

## *Trench IV*

- 4.10 The excavation of Trench IV was undertaken in June 2016 with the main purpose of understanding how the two different phases of railings were linked. This revealed a number of unexpected archaeological features.
- 4.11 The earliest layer exposed was (**context 37**) seen at 8.33m OD (Figs. 12, 13). It was composed of yellow/orange coarse-grained sand with signs of bioturbation and contained no anthropic material. Without excavating further it was impossible to ascertain whether this was a natural deposit or whether it was re-deposited material corresponding to a phase of levelling. This context was overlain by two elements (**context 32**) and (**context 36**) which, although they had no direct relationship with one another, were almost certainly related to the same phase of activity given their corresponding levels (Fig. 12). These contexts both sat at 8.36m OD at their highest points. (**Context 36**) was a single sandstone slab measuring 0.47m x 0.42m x 0.02m located in the southern corner of Trench IV and looked as though it could be the remnants of some sort of flagstone surface possibly related to wall 27. The stone was quite heavily eroded and a sample was collected. **Context 32**, which also overlay context 37, was a compacted mix of charcoal and ash-like material containing moderate quantities of mortar and fragments of CBM compressed into the layer, perhaps as means of consolidation. It was patchy in nature measuring a maximum depth of 0.03m but may, like the stone slab, correspond to a ground surface or preparation layer pre-dating the first phase of the railings. There was no evidence of *in situ* burning.
- 4.12 (Context 32) was cut by what appeared to be a very tight construction trench (**context 29**) measuring 0.06m from the south-western face of wall (context 27), and was backfilled with a sandy material (context 38) similar to (context 37) (Fig. 12). This was the construction trench for a narrow north-west/south-east running brick wall structure (**context 27**) exposed below the foundations of the phase I railings. It was observed over a length of 0.4m, continuing towards the south-east beneath and probably beyond the railings (context 22) and sitting at approximately 8.10m OD at its base. The wall was only 0.37m in width, with a maximum surviving height of 0.46m. To the north-west it had clearly been dismantled, and most of the bricks had been broken at this end. The construction was composed of up to seven courses of squat orangey red three-quarter or half-bat bricks,

2 Jacques, D. 1998. *A History of the West Front and Associated Barge Walk – Hampton Court Gardens Strategy*. HCP, p.6: “Various alternatives for the design of railings to replace the boundary with the Barge Walk were examined in 1877 (...). The present railings, which appear to have been older wrought iron ones imported for the purpose, were set in concrete blocks rather than the more traditional dwarf wall.”



measuring 120mm/140 mm x 120mm x 60mm. They were un-frogged. The wall was double-faced and there was a narrow gap measuring 0.1m between the two faces, which was in-filled with small fragments of brick, tile and chunks of mortar. The upper-most visible level of the wall, the 6<sup>th</sup> course, was composed of a mixture of half-bat bricks, broken tile and a thin limestone block measuring 270mm x 160mm x 15mm. It seemed to continue further upwards as there was a 7th course of bricks just visible directly below the foundation of the railings. The mortar joints were substantial, measuring in some places just over 30mm. The bonding material was composed of a creamy lime mortar with fine gravelly inclusions. A reference sample of this mortar was taken.

- 4.13 As previously mentioned, the wall had been truncated at its north-western end, but when this happened is uncertain. Whatever the reason and the date, there was a clear linear robber trench (**context 34**), which was observed over a length of 0.5m before disappearing beyond the northern limits of the trench with a depth of 0.28m (Fig.12). It is filled by (**context 35**), a loose silty sandy backfill material containing moderate amounts of demolition material, mortar fragments and occasional small sub-angular stones. There were no finds associated with this context.
- 4.14 Wall 27 was partially overlain by context 30, a demolition layer that also seemed to be related to the wall's destruction. It was comprised of a silty sand deposit containing large quantities of hand-cut rounded bricks with flint inclusions, roof tiles and fragments of soft/friable white lime mortar. A sample of some of the CBM material was collected for reference. This in turn was overlain by context (31), a silty gravelly layer that corresponds to the same levelling layer as was observed in trench I (context 8) and trench II (context 15).
- 4.15 The brick foundation of the railings, (**context 22**), as in Trench I, sat on top of this gravel layer, its base lying at 8.54m OD. The brick structure differed from the section observed in Trench I in two ways. Firstly it was better preserved, as it had been subjected to less root damage due to being located a greater distance away from the modern day railings consumed by the vines, and secondly it was composed of four courses of brick rather than three and measured a height of 0.32 m. Each brick measured on average 225mm x 66mm x 100mm and was orangey red in colour. Although only the north face was observed due to the restrictive nature of the trench, it was clear that this foundation was a well-constructed, immaculate structure, though the brickwork was not pointed. The mortar joints measured an average of 20mm and the bonding material was composed of a mixture of yellowish white sandy lime mortar and a harder bluish mortar with some cement content, indicating a phase of repairs.
- 4.16 Before laying the baluster plinth, a bedding layer was placed on the final course of bricks consisting of fragments of mortar and small concrete wedges for a neater finish on the two faces (**context 26**). Above this thin layer was the plinth stone itself, (**context 21**) (Fig. 9, 10, 13). The plinthstone observed was dressed Portland stone and measured 0.94m x 0.43m x 0.16m and was curved. The baluster plinths in trenches I and IV were different in form and quality of stone, the stone in trench IV being slightly more porous. The plinth in Trench I was greater in length and depth but was less wide than its counterpart in Trench I and also presented a slight curve which the other section did not. Another difference was that while there was only one single plinth stone on top of the foundation in this trench, there was an extra Portland stone block beneath the plinth in Trench I. Perhaps this compensated for the reduced height of the overall structure in this far eastern section. Context 21 also had more angular lines and had a number of holes visible on the surface
- 4.17 The iron pickets were no longer connected to the sockets, of which there were seven in total on the terminating plinth stone, four of which retained the lead caulking. The two eastern-most sockets were re-used to link the new railings with the old ones, and it seems that three crudely crafted holes were scored into the stone on the northern edge (Fig. 9, 10) in order to insert the new pickets, creating an arc at this interconnecting section of the railings. Inserted against the northern face of the plinth stone and foundation was the supporting upright and crossrails (**context 33**) which have not survived well due to corrosion. This is the same structure as was observed in Trench II.

## *Trenches V – VII*

- 4.18 In July 2016, three small trenches were excavated along the pathway in front of the west face of Apartment 39. This was undertaken in order to verify the presence of archaeology, and more





specifically to see if there existed the remains of an earlier pathway beneath the stone slabs. Each trench was excavated to a maximum depth of between 0.2 and 0.3m

## *Trench V*

- 4.19 Trench V was located 19.6m south of the north-western corner of Apartment 39 along the western face of the building. It measured 0.6m (E/W) x 0.25m (N/S) x 0.2m (d). No archaeological features were uncovered in this trench, simply a silty sandy loose dark grey bedding layer (**context 39**), which was also present in trenches VI and VII, overlying a silty sandy dark grey soil containing fragments of CBM and small sub-angular stones.

## *Trench VI*

- 4.20 Trench VI was located 11.40m south of the north-western corner of apartment 39, and measured 0.64m (W/E) x 0.65m (N/S) x 0.18m (d). The earliest layer observed in this trench was **context 42**, composed of orangey/brown sandy silty friable gravels with inclusions of occasional CBM fragments; this context was also observed in Trench VII. The context was observed over 0.12m and was overlain by **context 41**, which was composed limestone fragments of varying sizes arranged to so as to lie flat and to roughly fit together forming a pathway. There was no mortar between the stones. This feature represents the remnants of an earlier crazy-paving style pathway running in front of Apartment 39, the date of which is uncertain. The paving was overlain by the bedding layer **context 39**.

## *Trench VII*

- 4.21 Trench VII was located 4.40m south of the north-western corner of Apartment 39, and measured 0.55m (N/S) x 0.58m (E/W) x 0.2-0.3m (d). Located at 0.2m below the current ground level was a layer of demolition material (context 43) composed of a sandy silty loose deposit containing large blocks and slabs of limestone as well brick and mortar fragments. This was only excavated in plan, therefore the depth is unknown. This layer was overlain by context 42, which in turn was overlain by context 39.

## 5 Evaluation of results

- 5.1 The four trenches excavated, although restricted in size, made it possible to answer the main questions regarding the structure, the condition and the different phases of the railings on the West Front. The investigations also gave the opportunity to explore and record previously unexposed archaeological remains. These observations have thus enabled us to enhance our understanding of this particular area of the palace and more specifically provide some information and guidance for the planning stages of the Apartment 39 Conservation Project.
- 5.2 The earliest elements encountered during this project were observed in Trench IV where some interesting archaeological features were exposed. The earliest context at 8.33m OD, was a coarse yellow/orange sandy layer (context 37), which was cut by a narrow construction trench (context 29) for the installation of a north-west/south-east aligned brick wall underlying the first phase of the West Front railings. The wall has been partially robbed out at the far north-western end at some stage, though when this episode occurred is uncertain. The wall is narrow and has been constructed with half-bat and three-quarter-bat red un-frogged bricks with an uneven surface. Only the north-western truncated end of the structure could be observed and the exact size and form of the bricks was mostly obscured. The wall's orientation is curious as it does not appear to parallel any of the surrounding buildings or boundaries of the garden.
- 5.3 Whilst we only have a limited vision of this structure and no dating material, its composition and form, as well as the stratigraphy and existing historical records nevertheless provide us with enough information to put forward some hypotheses. The wall certainly pre-dates the first phase of the railings, which were erected sometime during the mid-18<sup>th</sup> century (see section 2.7), and based on the general morphology of the bricks, which, as already mentioned, was somewhat obscured, it



could have been constructed as early as the 16<sup>th</sup> century, as the bricks presented a squat appearance typical of Tudor bricks. It is situated too far east to be associated with the Trophy Gate Buildings built in 1529-30 and demolished in 1879 (Thurley, p.47) and its insubstantial width would suggest it was part of a smaller possibly temporary, construction. No other buildings are known to have stood in this location. However, a number of historians, including Thurley, (p.45) and Longstaffe, (p.102) have suggested that the area could have been home to Wolsey's temporary workshops and storehouses during this phase of construction. If we attribute this particular function to the wall in Trench IV, it would certainly explain its anomalous alignment; the temporary nature of this type of building meaning that its orientation may not necessarily have mattered. Another possibility is that it represents the evidence of the earlier crenelated wall that appears to surround the west wing in the Stoop drawing of 1662. Although, its alignment still seems awkward in relation to the Apartment 39 range, we have a restricted vision of this feature; therefore, perhaps if it were to be excavated further along its length it might make more sense.

- 5.4 A sandstone slab and a charcoal ash-like layer (context 32) that were stratigraphically parallel with this wall may correspond to the surface level associated with the wall structure.
- 5.5 These contexts were overlain by a layer of demolition material (context 30) composed of brick fragments of varying types followed by a layer of gravels (context 31) which were seen in both Trenches I and II as well (contexts 8, 15). This layer would seem to correspond to a levelling layer upon which the first phase of the West Front railings was constructed as seen in Trenches I and IV. The structure was composed of a brick foundation, and a limestone plinth similar to the configuration seen separating the 20<sup>th</sup> Century Garden from the East Front (HCP142) and the railing plinths along Barge Walk towards the Triangle Garden (HCP111).
- 5.6 It extends 19.5m to the west before being truncated at the point where it curves towards the south, and where the second phase of railings intervenes. The stone supporting the railings is primarily made up of Portland stone (Whit Bed) as established by Paul Travis, the senior architectural technologist, however, the presence of Derbyshire Fossil Limestone in the large curved section of the railings as well as a smaller block a few metres to the right of the aforementioned was confirmed by the Petrological analysis carried out by Pre-Construct Archaeology (Hayward, 2016). This material from Derbyshire, according to Hayward, is only really quarried in any quantity from the mid-19<sup>th</sup> century onwards whilst Portland Whit Bed would be often accessible during the 18<sup>th</sup> century. The aforementioned was used primarily for the purpose of supporting railing structures, and the presence of the Derbyshire stone indicates a later repair and replacement of some of the weathered Portland stone plinths. So far no other examples of this Fossil Limestone have been found at Hampton Court, therefore there is no indication that any of the stone is part of re-used material from elsewhere in the palace. The varied nature of the plinths will be fully exposed once the vegetation is removed and when the plinth line is fully exposed during the conservation project and archaeological watching brief schedule to take place towards the end of 2016.
- 5.7 This first phase of the railings, as already mentioned, is part of an historic section of railings dating to around the mid-18<sup>th</sup> century if we consider the Spyers sketches discussed in section 2 and the petrological analysis discussed in the previous paragraph. However, we know with certainty that they were in place by the early/mid-19<sup>th</sup> century as they are clearly illustrated in Sayer's 1841 map of Hampton Court Palace (Fig. 16).
- 5.8 The second phase of railings, which comprised simply of a crossrail supporting a line of pickets and a double-pronged upright driven into the ground at regular intervals, seems to have been erected in the early 1880's when Princess Frederica of Hanover and Baron von Pawel Rammingen occupied Apartment 39 as Grace-and-Favour residents. This later section interlinks crudely with the historic plinth and continues on a line further west eliminating the gently sweeping outline of the earlier garden to create a more angular enclosure.



5.9 The Barge Walk railings, (Trench III) were installed in around 1879<sup>3</sup> after the Trophy Gate Buildings were demolished. These railings are largely unaffected by vegetation and are in a much better state of preservation.

5.10 The excavation of three trenches adjacent to the west-facing elevation of apartment 39 along the stone pathway revealed the presence of demolition rubble which may be associated with a phase of levelling. A small section of stone paving pre-dating the current pathway was also uncovered, the precise date of which is unknown.

## 6 Archive, Artefacts and Ecofacts

6.1 The paper archive is comprised of a context register, context record sheets, photographic register, drawn plans and sections as well as administrative documents, general plans, sketches and correspondence. There are digital documents including reports, administrative documents, and photographs numbered from HCP144\_001 to HCP144\_109

6.2 A number of archaeological finds were collected as bulk samples from a range of contexts during this evaluation, the details of which can be found in the finds register in Appendix I.

6.3 Petrological analysis was undertaken of two sections of stone supporting the 18<sup>th</sup> century railings fronting the north-facing elevation of the West Front, South` Wing of Hampton Court Palace in order to establish their geological character and source. The detail of this analysis can be found in the report by K. Hayward<sup>4</sup>.

6.4 No further environmental samples were taking during the archaeological evaluation.

6.5 The physical, digital and paper archives will be deposited according to the HRP *Deposition of Archaeological Excavation Archives Guidelines 2015*.

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<sup>3</sup> Jacques,D 1998, (p.6).

<sup>4</sup> Hayward, K, 2016. Petrological Identification of a Curved Coping Stone: North-Facing Elevation, West-Front, South Wing. Pre-construct Archaeology.



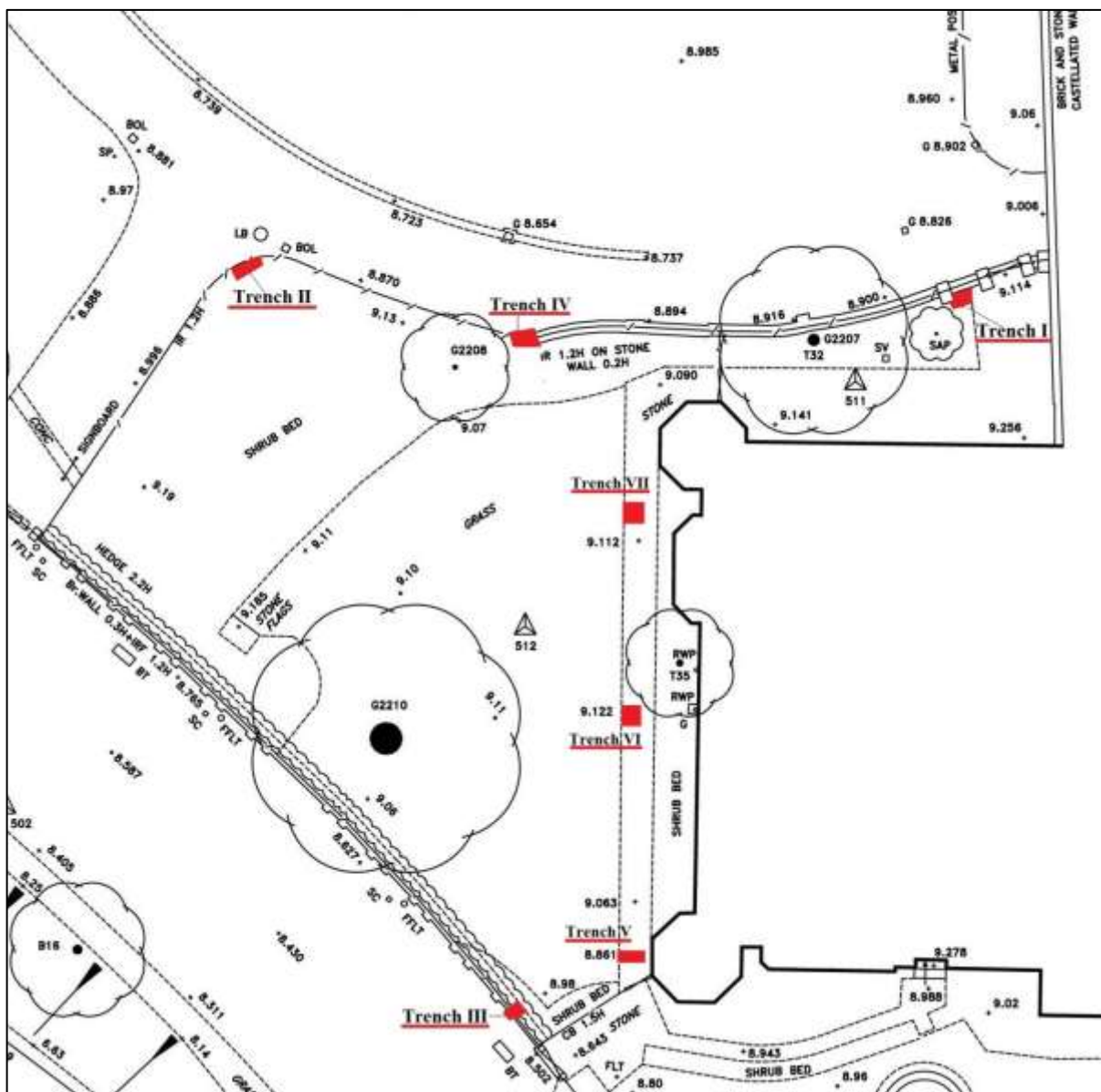


Figure 1: Extract from Topographical map showing the locations of the investigation areas





**Figure 2: Trench I on the West Front**



**Figure 3: View of south facing and east facing sections in Trench I**





Figure 4: North-facing view of Trench II



Figure 5: View of 'double-pronged' supporting up-right, context 17.



Figure 6: Barge Walk railings and stone plinth



Figure 7: Clay pipe from context 7



**Figure 8: Foundation plinths of the Barge Walk railings (HCP129 - FKL)**



**Figure 9: View of the railings, plinth and foundation in profile**





Figure 10: Detail showing the link between the historic fence line and the later railings



Figure 11: view towards the south-west of Trench IV - mid-excavation



Figure 12: East-facing view of the features underlying the historic plinth and foundation



Figure 13: North-west facing section of the fence line foundation and the earlier structure 27



**Figure 14: Trench V**



**Figure 15: Trench VI with the limestone paving, context 41.**





Figure 16: Trench VII, context 43



Figure 17: View of the Guard Room and other offices in the Palace Yard – John Spyers 1780



Figure 18 : View of the West Front - John Spyers 1786



Figure 19: Henry Sayers' plan of Hampton Court Palace, 1841 - Work 34-1349



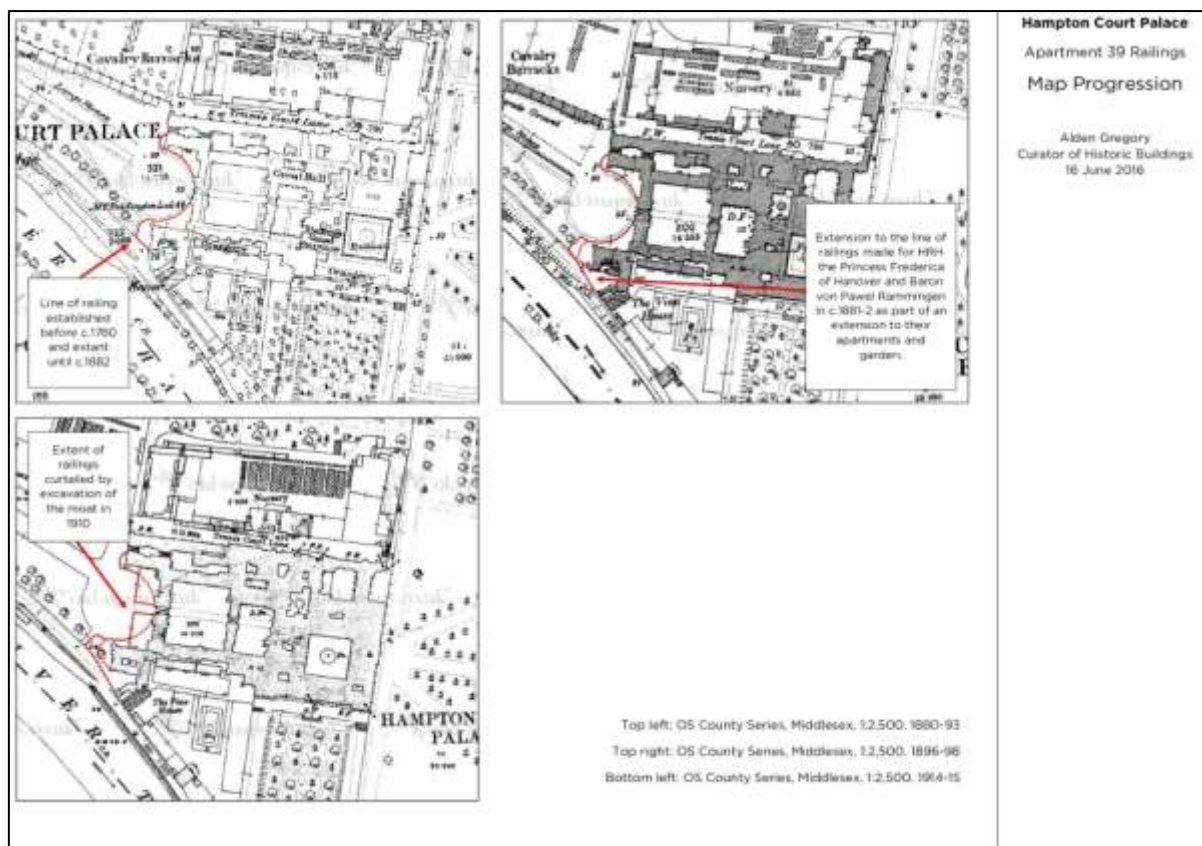


Figure 20: OS maps showing the evolution of the West Front railings

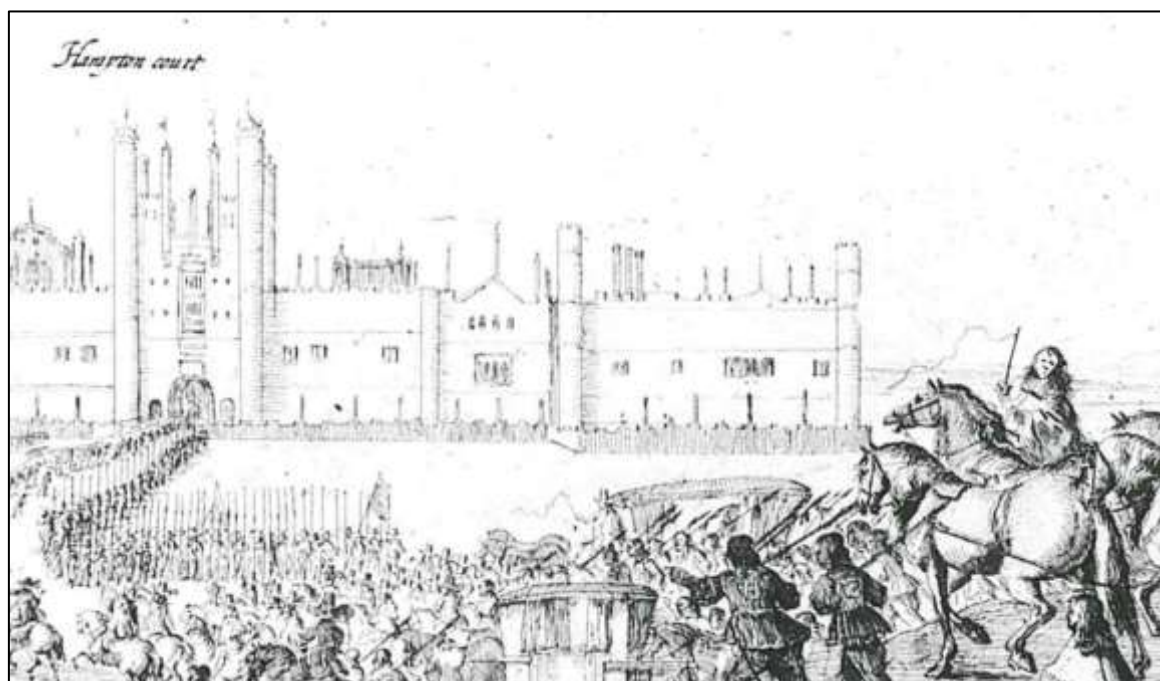


Figure 21: 1662 Dirk Stoop: The Arrival of Charles II and Catherine of Braganza.





## Appendix I

### Context Register

Context	Trench	Description	Levels OD M
1	I	Dressed Yorkstone Plinth	High: 9.11, Low 8.91
2	I	Baluster plinthstone - Yorkstone	High: 9.11, Low 8.91
3	I	Lower plinthstone below context 10	High: 8.95, Low: 8.87
4	I	East-west running foundation wall supporting contexts 1 and 2	High: 8.79, Low: 8.55
5	I	North-south running brick foundation structure supporting context 1	High: 8.88, Low: 8.69
6	I	Topsoil	High: 9.21, Low: 9.01
7	I	Subsoil/garden soil	High: 9.01, Low: 8.57
8	I	Sandy gravelly layer - possible levelling layer for the garden aiding drainage	High: 8.57
9	I	Layer of limestone fragments used as a levelling layer between contexts 1 and 2	High: 8.87, Low: 8.78
10	I	Modern pipe cutting through context 4	High: 8.80, Low: 8.76
11	I	Cut for pipe installation	N/A
12	I	Bedding layer for context 3	High: 8.98, Low: 8.95
13	II	Topsoil	High: 9.13, Low: 8.75
14	II	Subsoil/garden soil	High: 8.75, Low: 8.63
15	II	Coarse sandy gravel layer similar to 8	High: 8.75
16	II	Iron railing supporting iron pickets	High: 8.93
17	II	Two-pronged supporting upright	High: 9, Low: 8.53
18	II	Very loose, soft sand fill of 20	High: 9.03, Low: 8.65
19	II	Iron pickets	N/A
20	II	Small installation cut for railings	High: 9.03, Low: 8.65
21	IV	Limestone plinth	High: 9.08, Low: 8.94
22	IV	Foundation below 21	High: 8.86, Low: 8.54
23	IV	Demolition layer overlying 27, 22, 30 and sealing 34	High: 8.61, Low: 8.44
24	IV	Subsoil/garden soil	N/A
25	IV	Topsoil/Garden soil	High: 9.13, Low: 9.00
26	IV	Bedding layer between 21 and 22	High: 8.92, Low: 8.89
27	IV	North-west/south-east running wall below 29, 22	High: 8.54, Low: 8.10
28	IV	Soft sandy layer - natural silting up? Underlies 29, 30, and 31. overlies 36	High: 8.32, Low: 8.28
29	IV	Installation cut of 27	High: 8.35
30	IV	Demolition layer, overlies 28, underlies 31	High: 8.51, Low: 8.40
31	IV	Silty gravel layer, same as 15 and 8 underlies 22, overlies 30	High: 8.54, Low: 8.42
32	IV	Compact charcoal/ashy layer - possible surface level, underlies 30, 29, 28, overlies 37	High: 8.36
33	IV	Iron railings	Low: 8.96
34	IV	Cut of a robber trench associated with the removal of 27	High: 8.33, Low: 8.10



35	IV	Fill of 34	High: 8.33, Low: 8.10
36	IV	Possible ground level/surface associated with wall 27	High: 8.36, Low: 8.34
37	IV	Sandy deposit possibly used as levelling	High: 8.33
38	IV	Backfill deposit, fill of 29	High: 8.35
39	V, VI, VII	Bedding layer below 44	
40	V	Deposit below 39	
41	VI	Roughly paved pathway below 39 and above 42	
42	VI, VII	Gravel levelling layer	
43	VII	Demolition material, below 42	
44	V, VI, VII	Present-day Yorkstone path	

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## Photographic Register

Photo NO	Trench	Description	View	Scale
1	I	General view of APT39 railings on the west front	W	N/A
2	I	General view of gate entrance APT39	W/SW	N/A
3	I	General view of TR I	W	0.4 m
4	I	View of contexts 1, 2, 3, 4, 5, 10	N	0.4 m
5	I	Contexts 1, 2, 3, 5, 8	W	0.4 m
6	I	Angle between contexts 5 and 4/ 1, 2, 3	NW	0.4 m
7	I	Contexts 1, 2, 3, 4, 5, 10	N	N/A
8	I	Contexts 1, 2, 3, 4, 5, 10	N	N/A
9	I	Detail of contexts 4 and 5	W/NW	N/A
10	I	Detail of contexts 4 and 5	W/NW	N/A
11	I	Contexts 1, 5, 6, 7, 8	W	N/A
12	I	General view of TR I showing context 10	E	0.4 m
13	II	Mid-ex view of TR II	N	N/A
14	II	Contexts 16, 17, 19, 20, 15	N	0.5 m
15	II	Contexts 15, 16, 17, 18, 20	N	0.5 m
16	II	Detail of 17 and 18	N	0.5 m
17	II	Detail of 17 and 18	N	0.5 m
18				
19	II	Detail of context 17	NE	0.5 m
20	II	East-facing section showing contexts 13, 14, 15, 18	W	0.5 m
21	II	Context 17	W	N/A
22	II	Detail of context 17	W/NW	N/A
23	II	Detail of context 17	W/NW	W/NW
24	II	Context 17	N	0.5 m
25	III	Barge Walk railings	E	0.5 m
26	III	Barge Walk railings	E	0.5 m
27	III	Barge Walk railings	E	0.5 m
28	I	Clay pipe from context 7, TR I	N/A	0.05 m
29	I	Clay pipe from context 7, TR I	N/A	0.05 m
30	I	Clay pipe from context 7, TR I	N/A	0.05 m
31	IV	Contexts 21, 22, 27, 29, 30	E	N/A
32	IV	View in plan of brick structure 27	N/A	N/A
33	IV	General view of West Front	N/A	N/A
34	IV	Profile view of plinth and foundation, contexts 21, 22, 23	E	0.5 m
35	IV	Profile view of plinth and foundation, contexts 21, 22, 23	E	0.5 m
36	IV	Profile view of plinth and foundation, contexts 21, 22, 23	E	0.5 m
37	IV	Profile view of plinth and foundation, contexts 21, 22, 23	E	0.5 m



38	IV	Profile view of plinth and foundation, contexts 21, 22, 23	E	0.5 m
39	IV	View in plan of plinth and foundation, contexts 21, 22, 23	E	N/A
40	IV	View in plan of plinth and foundation, contexts 21, 22, 23	E	N/A
41	IV	Detail view of railing upright, context 33	E/NE	N/A
42	IV	Detail view of railing upright, context 33	E/NE	N/A
43	IV	View in plan of plinthstone and railings	E	N/A
44	IV	General view of Trench IV, contexts 21, 23, 27	E/NE	0.5 m
45	IV	General view of Trench IV, contexts 21, 23, 27	E/NE	0.5 m
46	IV	Contexts 21, 22, 26 in section	SE	0.4 m
47	IV	Contexts 21, 22, 26 in section	SE	N/A
48	IV	View in profile of 21, 22, 26	E	N/A
49	IV	Detail view of surface of 21	E	N/A
50	IV	Detail view of railings and plinthstone 21, 33	E	N/A
51	IV	Detail view of railings and plinthstone 21, 33	E	N/A
52	IV	View in plan of 27	N/A	0.4 m
53	IV	View in plan of 27	N/A	0.4 m
54	IV	General view of Trench IV, contexts 21, 23, 27	E/NE	0.4 m
55	IV	General view of Trench IV, contexts 21, 22, 27, 28, 29, 30	E/NE	0.4 m
56	IV	General view of Trench IV, contexts 21, 22, 27, 28, 29, 30	E/NE	0.4 m
57	IV	General view of Trench IV, contexts 21, 22, 27, 28, 29, 30	E/NE	0.4 m
58	IV	Contexts 21, 22, 30, 27	E	N/A
59	IV	Contexts 21, 22, 30, 27	E	N/A
60	IV	Plinth 21 seen from above, context 30	In plan	N/A
61	IV	Wall 27	NE	0.2
62	IV	Context 30, and foundation 22	W	0.4
63	IV	Context 30, and foundation 22, wall 27	W	0.4
64	IV	East-facing section, contexts 24, 25, 30	W	0.5
65	IV	North-facing section, contexts 24, 25, 30, 31	S	0.5
66	IV	Detail of foundation 27, and context 31	E	0.2
67	IV	Relationship between 27 and 22	SE	N/A
68	IV	Relationship between 27 and 22	SE	N/A
69	IV	Relationship between 27 and 22	SE	0.4
70	IV	Trench IV viewed from above, contexts 21, 22, 27, 32, 36, 37, 34	NE	N/A
71	IV	Trench IV viewed from above, contexts 21, 22, 27, 32, 36, 37, 34	NE	N/A
72	IV	Trench IV viewed from above, contexts 21, 22, 27, 32, 36, 37, 34	NE	N/A



73	IV	View in plan of 36, 32, 37, 34, 27	NE	N/A
74	IV	Cut 34	N/NE	0.2
75	IV	Cut 34	N/NE	0.2
76	IV	South-facing section, contexts 35, 34, 23, 24, 27	N	0.4
77	IV	South-facing section, contexts 35, 34, 23, 24, 27	N	0.4
78	IV	South-facing section, contexts 35, 34, 23, 24, 27	N	0.4
79	IV	Profile of wall 27, and 22/21 in section	SE	N/A
80	IV	Profile of wall 27, and 22/21 in section	SE	0.4
81	IV	Profile of wall 27, and 22/21 in section	SE	0.4
82	IV	Wall 27 in plan	NE	0.4
83	IV	North-facing section, contexts 24, 25, 30, 31, 37, 36	S	0.5
84	IV	Profile of 22, 21, and contexts 36, 31, 37	E	0.5
85	IV	Profile of 22, 21, and contexts 36, 31, 37	E	N/A
86	IV	Detail of plinthstone 21	N	0.05
87	IV	Detail of caulking and sockets in plinthstone 21	N	N/A
88	IV	Detail of caulking and sockets in plinthstone 21	W	N/A
89	IV	Plinthstone 21 and pickets, context 33	N	N/A
90	IV	Detail of sockets and caulking, context 21	N	N/A
91	IV	View of plinthstones from the West Front	S	N/A
92	N/A	West face of Apartment 39	NE	N/A
93	V	Location of Trench V before excavation	E	N/A
94	VI	Location of Trench VI before excavation	E	N/A
95	VII	Location of Trench VII before excavation	E	N/A
96	V	Trench V, context 40	E	N/A
97	V	Trench V, context 40	E	N/A
98	VI	Location of Trench vI	E	N/A
99	VI	Contexts 41 and 42	E	N/A
100	VI	Contexts 41 and 42	E	0.4
101	VI	Contexts 41 and 42	E	0.4
102	VI	Contexts 41 and 42	E	0.4
103	VI	General view of Trench VI	SE	N/A
104	VI	General view of Trench VI	SE	N/A
105	N/A	West face of Apartment 39	SE	N/A
106	VII	Location of Trench VII before excavation	E	N/A
107	VII	Context 43	E	0.4
108	VII	Context 43	E	0.4
109	V	Context 40	E	0.4



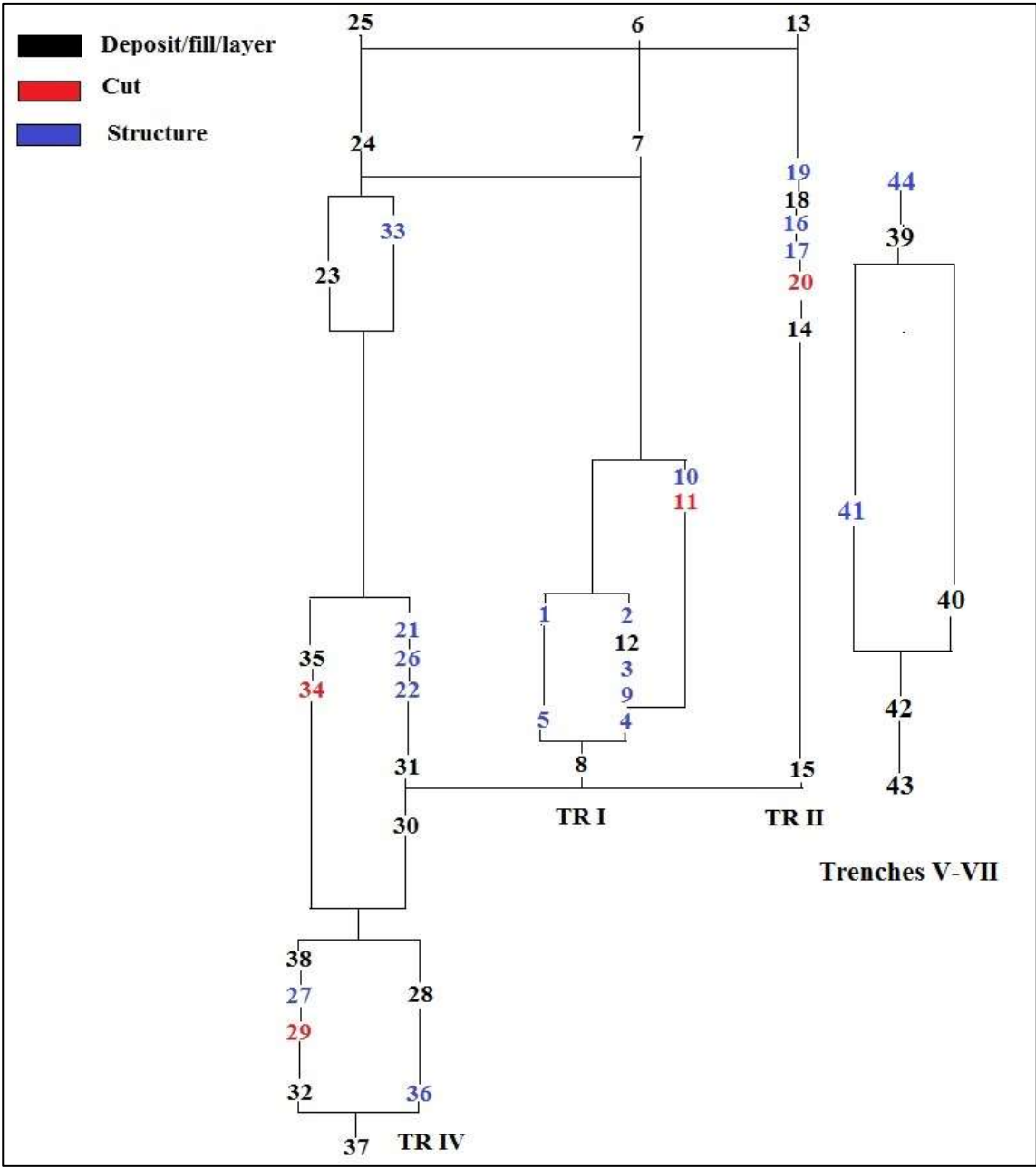
## *Finds Register*

Context	Trench	Object Type	No Bags
14	II	A.Bone	1
14	II	CBM	1
14	II	Clay Pipe	1
15	II	A.Bone	1
7	I	A.Bone	1
7	I	Clay Pipe	1
7	I	Glass	1
7	I	Pottery	1
7	I	A.Bone	1
30	IV	CBM	1
24	IV	Glass and Fe	1
26	IV	Sample	1
24	IV	A.Bone	1
36	IV	Sample	1
24	IV	Clay pipe	1
24	IV	Slag	1
25	IV	Glass bottle and cork	1
24	IV	Pottery	1
27	IV	Mortar sample	1
21	IV	Lead caulking	1
23	IV	CBM	1
23	IV	Stone	1
40	V	CBM	1
40	V	Pottery	1
42	VI	CBM	1
42	VI	A. Bone	1
42	VI	Fe	1
43	VII	Pottery	1
43	VII	Glass	1
43	VII	CBM	1



Appendix II

Stratigraphic Matrix



## Bibliography

Hayward, K, 2016. Petrological Identification of a Curved Coping Stone: North Facing Elevation, West Front, South Wing. Pre-Construct Archaeology

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OASIS ID: historic9-251981

### Project details

Project name	Apartment 39 Railings Conservation Project, Hampton Court Palace: An Archaeological Evaluation
Short description of the project	A programme of archaeological investigation was carried out within the Apartment 39 gardens located on the South Wing, West Front of Hampton Court Palace in advance of a railings conservation project and the reconfiguration of the garden. A total of 7 trenches were hand excavated. The trenches located along the West Front revealed both the Portland stone baluster plinths and the brick foundation of the first phase of the 18th century railings. However, some of the plinths were composed of Derbyshire Fossil Limestone suggesting later repairs and replacement. The existing railing plinth and foundation extend 19.5m to the west before being truncated at the point where the structure curves towards the south, and where the second phase of railings intervenes. The second phase of railings is composed of a simple cross rail supporting a line of pickets and a double-pronged upright driven into the ground at regular intervals, probably erected during the 1880's. A narrow north-west/south-east aligned trench-built brick wall was uncovered directly below the foundation of the first phase of the railings. Based on the general morphology of the bricks, which, was somewhat obscured, it could have been constructed as early as the 16th century and may be either the remains of a small temporary building constructed when the West Front was home to Wolsey's temporary workshops and storehouses, or it may represent the evidence of the earlier crenelated wall that appears to surround the West Front in the Stoop drawing of 1662. In front of the west-facing elevation of apartment 39 the presence of demolition rubble used as levelling material was revealed as well as a small section of stone paving pre-dating the current pathway.
Project dates	Start: 16-03-2016 End: 18-03-2016
Previous/future work	Yes / Yes
Any associated project reference codes	HCP144 - Sitecode
Type of project	Field evaluation
Site status	Scheduled Monument (SM)
Current Land use	Other 5 - Land dedicated to the display of a monument
Monument type	RAILINGS Post Medieval
Significant Finds	POTTERY Modern

<http://oasis.ac.uk/form/print.cfm>

30/09/2016



Significant Finds CBM Post Medieval  
 Methods & techniques ""Targeted Trenches""  
 Development type Building refurbishment/repairs/restoration  
 Prompt Research  
 Position in the planning process Not known / Not recorded

## Project location

Country England  
 Site location GREATER LONDON RICHMOND UPON THAMES RICHMOND UPON THAMES Apartment 39, Hampton Court Palace  
 Postcode KT8 9AU  
 Study area 0 Square metres  
 Site coordinates TQ 515615 168452 50.9305434159 0.157025816156 50 55 49 N 000 09 25 E Point  
 Site coordinates TQ 515587 168456 50.930547748419 0.156966163013 50 55 49 N 000 09 25 E Point  
 Site coordinates TQ 515593 168426 50.930522426791 0.156993531358 50 55 49 N 000 09 25 E Point

## Project creators

Name of Organisation Historic Royal Palaces  
 Project brief originator Historic Royal Palaces  
 Project design originator Historic Royal Palaces  
 Project director/manager William Page  
 Project supervisor Alexandra Stevenson

## Project archives

Physical Archive recipient Historic Royal Palaces  
 Physical Archive ID 3910023  
 Physical Contents "Animal Bones", "Ceramics", "Glass"  
 Digital Archive recipient Historic Royal Palaces  
 Digital Archive ID 3910023  
 Digital Contents "Animal Bones", "Ceramics", "Glass"  
 Digital Media available "Images raster / digital photography", "Spreadsheets", "Text"  
 Paper Archive recipient Historic Royal Palaces





Paper Archive ID 3910023  
 Paper Contents "none"  
 Paper Media available "Context sheet", "Correspondence", "Drawing", "Miscellaneous Material", "Plan", "Report", "Section", "Unpublished Text"

## Project bibliography 1

Publication type Grey literature (unpublished document/manuscript)  
 Title HCP144, Apartment 39 Railings Conservation Project - An Archaeological Evaluation  
 Author(s)/Editor(s) Stevenson, A  
 Other bibliographic details HCP144  
 Date 2016  
 Issuer or publisher Historic Royal Palaces  
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