# KEW PALACE ROYAL BOTANIC GARDENS KEW LONDON BOROUGH OF RICHMOND

# Watching Brief

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|                              |                 |           |          |  |  |  |
|                              | Name & Title    | Signature | Date -   |  |  |  |
| Text Prepared by:            | John Brown      |           | May 2005 |  |  |  |
| Graphics<br>Prepared by:     | Josephine Brown |           | May 2005 |  |  |  |
| Graphics<br>Checked by:      | Josephine Brown | Jahnbei   | May 2005 |  |  |  |
| Project Manager<br>Sign-off: | Jon Butler      | Jabulle!  | May 2005 |  |  |  |
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| Revision No. | Date | Checked | Approved |
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Pre-Construct Archaeology Ltd Unit 54 Brockley Cross Business Centre 96 Endwell Road London SE4 2PD An Archaeological Watching Brief at Kew Palace, Royal Botanic Gardens, Kew, London Borough of Richmond upon Thames

Site Code: Kew 4

Central National Grid Reference: TQ 1847 7747

Written and Researched by John Brown

Project Manager: Jon Butler

Commissioning Client: Historic Royal Palaces

Contractor: Pre-Construct Archaeology Limited Unit 54 **Brockley Cross Business Centre** 96 Endwell Road **Brockley** London **SE4 2PD** 

Tel:

020 7732 3925

Fax:

020 7732 7896

E-mail: jbutler@pre-construct.com

Website:

www.pre-construct.com

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# CONTENTS

| 1    | ABSTI             | RACT  | 3  |  |  |  |  |  |
|------|-------------------|---|----|--|--|--|--|--|
| 2    | INTRO             | INTRODUCTION  |    |  |  |  |  |  |
| 3    | PLANI             | PLANNING BACKGROUND   |    |  |  |  |  |  |
| 4    | GEOL              | GEOLOGY AND TOPOGRAPHY                                      |    |  |  |  |  |  |
| 5    | ARCH              | AEOLOGICAL AND HISTORICAL BACKGROUND                        | 11 |  |  |  |  |  |
| 6    | METH              | ODOLOGY   | 17 |  |  |  |  |  |
| 7    | THE A             | THE ARCHAEOLOGICAL SEQUENCE                                 |    |  |  |  |  |  |
| 8    | CONC              | CONCLUSIONS   |    |  |  |  |  |  |
| 9    | BIBLIC            | BIBLIOGRAPHY  |    |  |  |  |  |  |
| 10   | ACKN              | OWLEDGEMENTS  | 32 |  |  |  |  |  |
| APPI | ENDICES           |   |    |  |  |  |  |  |
|      |                   | CONTEXT DESCRIPTIONS  | 33 |  |  |  |  |  |
| APPE | NDIX 2            | SITE MATRIX   | 35 |  |  |  |  |  |
| APPE | ENDIX 3           | ASSESSMENT OF THE BUILDING MATERIALS                        | 36 |  |  |  |  |  |
| APPE | NDIX 4            | OASIS DATA COLLECTION FORM                                  | 38 |  |  |  |  |  |
| FIGU | RES               |   |    |  |  |  |  |  |
| 1    | SITE L            | OCATION   | 7  |  |  |  |  |  |
| 2    | TREN              | CH LOCATIONS  | 8  |  |  |  |  |  |
| 3    | PRE-E             | XCAVATION PLAN OF STAIR WELL & PLATFORM LIFT                | 23 |  |  |  |  |  |
| 4    | MULTI             | -CONTEXT PLAN OF LIFT SHAFT, STAIR WELL & PLATFORM LIFT     | 24 |  |  |  |  |  |
| 5    | WEST              | FACING ELEVATION OF TUDOR FOUNDATIONS                       | 25 |  |  |  |  |  |
| 6    | EAST I            | FACING SECTION OF TRENCHES LS SW AND PL                     | 26 |  |  |  |  |  |
| 7    | LOCAT             | TION OF BLOCKED DOORWAY AND 17 <sup>TH</sup> CENTURY WINDOW | 27 |  |  |  |  |  |
| 8    | ELEVA             | TION BLOCKED DOORWAY AND 17 <sup>TH</sup> CENTURY WINDOW    |    |  |  |  |  |  |
|      | EMBR              | ASURE   | 28 |  |  |  |  |  |
| PLAT | ES                |   |    |  |  |  |  |  |
| 1    | 19 <sup>™</sup> C | ENTURY SOAKAWAY [112]                                       | 29 |  |  |  |  |  |
| 2    |                   | 17 <sup>TH</sup> CENTURY WINDOW EMBRASURE AND BLOCKING 29   |    |  |  |  |  |  |

#### 1 ABSTRACT

- 1.1 This report details the results and working methods of an archaeological watching brief undertaken at Kew Palace, Royal Botanic Gardens, Kew, London Borough of Richmond upon Thames. in advance of the construction of lift shafts and new stair well at the west façade of Kew palace for provision of disabled access. (Fig.1). The site is centred at National Grid Reference TQ 1847 7747. Lee Prosser (Curator Historic Buildings) commissioned the project on behalf of Historic Royal Palaces and between the 9<sup>th</sup> March and 20<sup>th</sup> April 2005 Pre-Construct Archaeology Ltd undertook the watching brief.
- 1.2 A trench was dug by contractors against the west façade of the Kew Palace, in three stages, corresponding to the positions of a platform lift, stairwell and lift shaft. These three areas were recorded as trenches PL (platform lift), SW (stairwell), and LS (Lift shaft). The separate trenches were consolidated into one continuous trench following the removal of the existing stairwell. Natural gravel layer was encountered in the northern part of the trench (trench PL). When natural gravel was not encountered this was a result of late 19<sup>th</sup> century or modern truncations obscuring or truncating the upper natural horizon and subsequent archaeological deposits.
- 1.3 Early post-medieval features were encountered on site, particularly the Tudor foundations upon which the extant 17<sup>th</sup> palace building was constructed. The majority of the features encountered were from the post-medieval period, mostly relating to the construction of an 18<sup>th</sup> century extension and its subsequent demolition in the late 19<sup>th</sup> century.
- 1.4 A number of features and archaeological deposits observed during the watching brief could be directly related to features observed during the previous archaeological evaluation undertaken by Pre-Construct Archaeology Ltd<sup>1</sup>.
- 1.5 The watching brief demonstrated that archaeological deposits survived primarily in the northern area of the trench up to a total of 0.95m in thickness and in one instance archaeological cut features continued beyond the depth of excavation c.1.07m below ground surface. The watching brief was intended as a complimentary phase of work to the previous evaluation of the archaeological deposits on site<sup>2</sup> and the consequent results suggest that limited archaeological remains exist on site. Areas to the south of the trench (LS) have clearly been

<sup>&</sup>lt;sup>1</sup> Bradley 2004

<sup>&</sup>lt;sup>2</sup> ibid.

impacted on by the construction of drains associated with the late 19<sup>th</sup> century and modern repairs and alterations to the extant Kew Palace. In this case most of the archaeological features have been truncated down to the level of the natural gravel.

#### 2 INTRODUCTION

- 2.1 This report details the results and working methods of an archaeological watching brief on the excavation of lift shafts and a stair well undertaken in advance of the development of disabled access at the western facade of Kew Palace, Kew Gardens, London (Fig. 1). The site is centred at National Grid Reference TQ 1847 7747. Lee Prosser (Curator Historic Buildings) commissioned the project on behalf of Historic Royal Palaces and between the 9<sup>th</sup> March and 20<sup>th</sup> April 2005 Pre-Construct Archaeology Ltd undertook the watching brief.
- 2.2 Kew Palace is a Scheduled Ancient Monument and is Grade 1 listed. In addition, it lies within the newly inscribed Royal Botanic Gardens World Heritage Site and has been designated as a Conservation Area under the Unitary Borough Local Plan.
- 2.3 A trench was dug by contractors against the west façade of the Kew Palace, in three stages, corresponding to the positions of a platform lift, stairwell and lift shaft (Fig. 2). These three areas were recorded as trenches PL (platform lift), SW (stairwell), and LS (Lift shaft). The separate trenches were consolidated into one continuous trench following the removal of the existing stairwell with dimensions c.5m x 2.5m with a maximum depth of 1.10m. The archaeological watching brief sought to monitor the survival of archaeological deposits close to the foundations of the Kew Palace, and to record any surviving features prior to ground removal and construction of the lift shafts and new stair well.
- 2.4 The fieldwork was conducted by Pre-Construct Archaeology Ltd (PCA), under the supervision of John Brown and the project management of John Butler (PCA).
- 2.5 A temporary benchmark was transferred by Mike Smith (Construction Manager) of Gardiner and Theobald LLP to a plinth course on the western façade from an Ordnance Survey Bench Mark located on the southeastern corner of Kew Palace and had a value of 6.18m OD. Measurements were also taken from the pavoir level on the western edge of the trench, established as 4.81m OD.
- 2.6 In August 2003 Historic Royal Palaces carried out an archaeological deskbased assessment at Kew Palace, prepared by Lee Prosser (Curator-Historic

Buildings), prior to fieldwork <sup>3</sup>. The assessment was carried out by the curatorial section of the Conservation Department, following a request by the Surveyor of the Fabric. The assessment was completed in order to support the Scheduled Ancient Monument Consent application for the construction of a lift-shaft adjacent to the historic building.

- 2.7 The assessment revealed the potential for abundant archaeological remains before the modern period to be low. Nevertheless, an archaeological evaluation in advance of the construction of the lift shaft was considered important as it would provide an opportunity to elucidate the date and fabric of the demolished service wing, illustrate the degree of survival, confirm the cartographic and documentary evidence and assess the general archaeological stratigraphy in the immediate environs of the house.
- 2.8 An archaeological evaluation was undertaken by Pre-Construct Archaeology Ltd. in 2004 supervised by Timothy Bradley. This revealed natural terrace gravel into which two broadly parallel N-S linear features had been cut. These features preceded the large-scale development of the area with the construction of a kitchen wing to the west of the main house in the early 18<sup>th</sup> century. A truncated drain was recorded which dated to the 18<sup>th</sup> century and was thought to be broadly contemporary with a foundation wall and the southern breast of a fireplace. The northern breast had been entirely removed by the later insertion of a brick soakaway in the 19<sup>th</sup> century, which may have been constructed immediately after the demolition of the service block in 1880. A further 19<sup>th</sup> century drain was recorded at the southern end of the trench, which may have partially reused an earlier 18<sup>th</sup> century wall. The existing courtyard surface and associated make-up and leveling layers were constructed in the 1960's.
- 2.9 The completed archive comprising written, drawn and photographic records and artefactual material will be deposited at the Historic Royal Palaces Archive at Hampton Court under the site code KEW 4.

<sup>&</sup>lt;sup>3</sup> Prosser 2003

<sup>4</sup> Bradley 2004

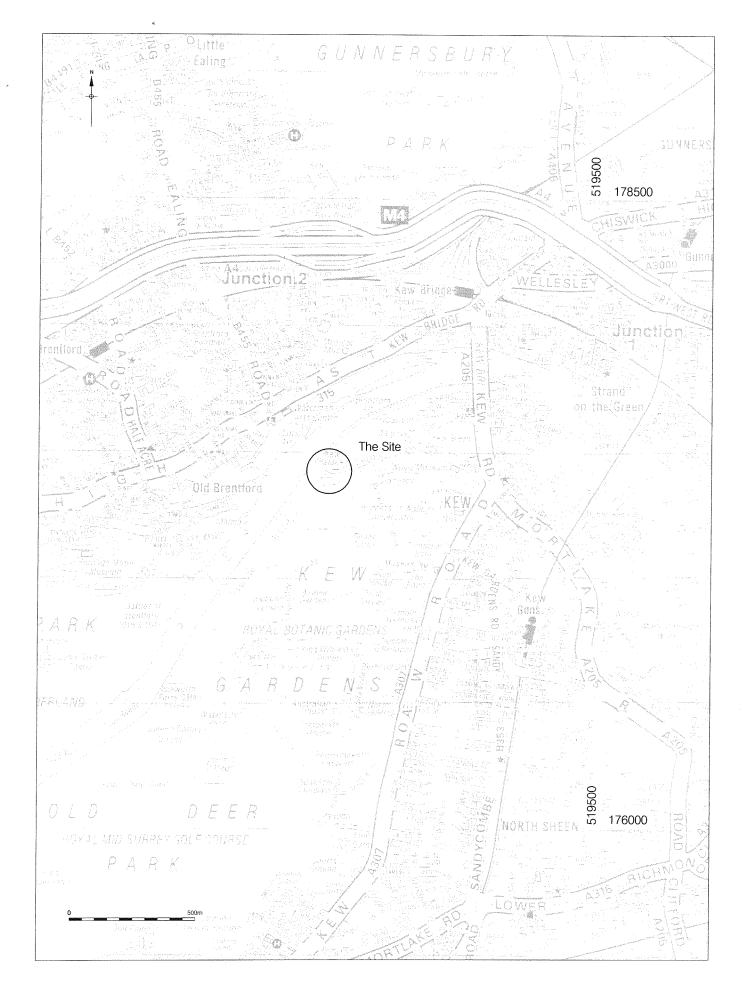
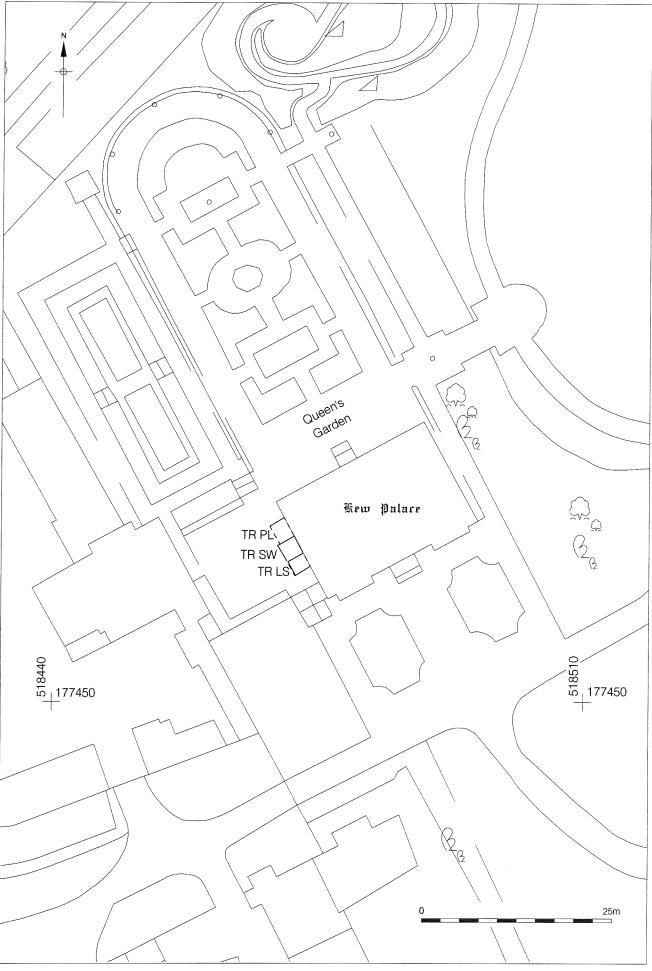


Figure 1 Site Location 1:15,000



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Figure 2 Trench Location 1:500

# 3 PLANNING BACKGROUND AND RESEARCH OBJECTIVES

- 3.1 The archaeological evaluation previously undertaken by Pre-Construct Archaeology Ltd. sought to address the following Research Questions, as identified in the method statement<sup>5</sup>:
  - Is there any evidence of settlement or other activity prior to the late 15<sup>th</sup> century?
  - Is there any evidence of the postulated two copyhold cottages?
  - Is there any evidence of ancillary structures or features associated with the mid 16<sup>th</sup> century building as represented by the existing brick cellars?
  - Is there any evidence of the ancillary kitchen buildings known to occupy the site in the 18<sup>th</sup> and 19<sup>th</sup> centuries?
  - What is the date of the construction of said buildings?
- 3.2 The watching brief was undertaken with the aim of further defining the archaeological record with regard to these research objectives.

9

<sup>&</sup>lt;sup>5</sup> Butler 2004

#### 4 GEOLOGY AND TOPOGRAPHY

- 4.1 The geological history of the area is covered in depth in the Desk Top Assessment (Prosser 2003). The following is a brief summary. The geology of the Kew area consists of lower Thames gravels probably laid down during the Saalian or Wolstonian stadial, dated to between 380,000 and 130,000 BP. Above this are alluvial deposits, coupled with Aeolian or wind-blown sandy brickearths.
- 4.2 Kew Palace lies close to the northern boundary of the Royal Botanic Gardens, some 80m to the south of the River Thames. The north side of Kew Palace is at a higher level than the south with steps leading down to the courtyard within which the evaluation trench is located.

#### 5 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

- 5.1 The archaeological and historical background of the site was covered in depth in the desktop assessment (Prosser 2003). It is repeated at length here.
- The early environment of the Thames Valley is perhaps one of the best researched in the world, principally due to the preservation of extensive undisturbed deposits. This has established that on the retreat of the ice sheets some 13,000 years ago, the Thames formed a braided river system with tundra-type vegetation, which gradually yielded to colonisation by herbaceous plants and grasses on an open steppe. In this context, the first Palaeolithic hunters probably penetrated the area, though evidence for the period is problematic. Many finds, which exclusively comprise stone tools, are often found as redeposited finds, while the brickearth deposits over much of the area post-date the period, and have thus obscured almost all primary contexts. A single flake has been recovered to the east within the Royal Botanic Gardens, but remains the only point of reference for a wide area.
- The Mesolithic period (c.10, 000-7000 BC) was probably one of greater activity. Pine and birch forests appeared, followed by mixed deciduous woodland as the climate became warmer. Mesolithic people hunted extensively along the Thames, but an itinerant lifestyle, coupled with a small population has left only the most ephemeral evidence. Occupation evidence is known from High Street, Brentford, with a flint-working site at Kew Bridge, but no evidence has been found within the immediate area of the site.
- Along the Thames, the Neolithic period (7000 2500) is characterised by a decline in elm and other woodland species coupled with an expansion of cereal cultivation, suggesting that localised areas were cleared for permanent occupation and agriculture. The wide meander which the Royal Botanic Gardens occupies is practically devoid of sites, though occupation is attested in Brentford, while stone tools have been recovered at Kew Pond and from the river at Kew Bridge.
- 5.5 Cultivation and development seems to have continued or even expanded into the Bronze Age, with the extensive utilisation of the river environment for food, transport and even for religious or ritual purposes. The earliest surviving evidence of permanent landscape features in the area have been dated to this time, though are confined to the north of the river. Scattered pottery to the east suggests that some occupation took place, while a founders' hoard to the south

and implements to the east indicate that there is still much to be found from the period.

- 5.6 The Iron Age (c.700 BC 1<sup>st</sup> century AD) is poorly known throughout the London region, and corresponds to a regeneration of some woodland species in the pollen record. Environmental evidence is still under-represented but it has been suggested that frequent and extensive inundation by the Thames discouraged or even drove off any pre-existing occupation in the area. A few ditches and pits have been discovered during evaluations to the north of the river, but otherwise the record is practically blank.
- 8.7 Roman London is perhaps one of the best-known urban areas of the Roman Empire, but even at a slight distance from the city walls, the evidence falls away dramatically. The heavy clays probably discouraged agriculture and large settlement, though extensive woodland may also be inferred by the widespread presence of tile and pottery manufactories, which needed almost inexhaustible supplies of wood for charcoal. Immediately to the north of the river, the road from *Calleva* (Silchester) to London was laid out in the 1<sup>st</sup> century, and road-side settlement in one form or another would be expected, but is largely absent. Even casual finds of scattered pottery or coins are not widely distributed across the western part of Greater London, suggesting a general absence of activity.
- When the region emerges into the historical record in the 7<sup>th</sup> century, a series of large rural estates can be discerned, peppered with royal or ecclesiastical centres of some importance. These large vills often formed the basis for later expansion into towns and cities. The lands around Kew formed part of the great royal estate of Kingston, though archaeological finds in the vicinity have illuminated the earliest Saxon development in the area. A collection of 6<sup>th</sup> or 7<sup>th</sup> century weapons has been recovered from the Thames at Brentford, which probably lay at the first fording site up-river from the City. Scramasaxes and swords, spears, a shield boss and other items form part of a highly important assemblage for the region, though the collection was discovered in the 19<sup>th</sup> century and its context is lost. At Strand-on-the-Green to the north of Kew Bridge, pottery has been found, while axes and spears have also been recovered from the Thames at the bridge site.
- 5.9 From its earliest records, Kew or Cayho (from the Old English: a spur of land) lay within the great royal patrimony of Kingston, which also included Maldon, Thames Ditton, Richmond and Petersham. Though it may have been an early

estate, no village or nucleated settlement is recorded until after the 14<sup>th</sup> century, reinforcing its primary agricultural, and peripheral nature. Field names in the area suggest the existence of heath and woodland, though a survey of the manor of Sheen taken in 1314 (PRO SC11/638) records large messuages or properties owned by tenants such as Richard of Cayho, Alice of Cayesho and John le Clerke of Cayesho, suggesting that a pattern of dispersed farmsteads or a small, discrete hamlet was in existence at this time. A short distance to the south, the royal palace of Sheen was to spring up in the 14<sup>th</sup> century, followed shortly by a Carthusian monastery, which in turn meant a substantial development of the landscape with deer parks and the squeezing of the agricultural land available for local farming tenants.

- 5.10 The proximity of Kew to Sheen and the Court meant that it became fashionable as a place of residence for the nobility, reinforced by the convenience of the river as the main route of transportation. Princess Katherine, daughter of King Edward IV (1461-1483) is the first notable person recorded as living at Kew, and many others followed.
- 5.11 It seems that houses were built as part of a speculative venture. One Thomas Byrkes divided a freehold into small plots for sale, and even sponsored the licensing of a chapel of ease for local, more convenient worship. Thereafter a number of prominent residences, all ringing the river devolved into the hands of noble families or individuals, including the Earls of Devon, Henry Norris, John Dudley and Charles Brandon, Duke of Sussex, with his wife, Mary, widow to King Louis XII of France.
- 5.12 The tenure and development of these properties is complex, and has not been completely deciphered (Cloake 2001), as many disappeared into obscurity within a relatively short space of time. Several survived however, and Kew itself continued to develop, even after the destruction of Richmond Palace and the monastery. Several families of note, including the Portman family built up consolidated estates from the various fragmented land-holdings, and the purchase of a lease by Queen Caroline in 1729 gave Kew a new social cachet which ensured success and development.
- 5.13 The subsequent development of the gardens under Frederick, Prince of Wales, his wife Augusta and their successors ensured the continuing prosperity of Kew in the 18<sup>th</sup> century, both as a place of recreation and an aristocratic residence. The Green developed, and became popular with French émigrés after the French Revolution, developing into an idyllic village environment, which was

greatly favoured by George III and his consort Queen Charlotte. Kew itself, always an adjunct of Richmond and Kingston was finally made into a separate parish in 1769.

- 5.14 The abandonment of Kew as a royal residence after 1818 resulted in a certain level of decline, but senior members of the Royal Family, including the Duke of Cumberland continued to live at Kew Green, and the Gardens, which now occupied most of the old parish, were constantly maintained. They were opened to the public in 1899 by Queen Victoria. The last quarter of the 19<sup>th</sup> century also witnessed an unprecedented expansion of suburban development at the fringes of the gardens, with the arrival of the railway, and the development of suburban life as London expanded to incorporate the formerly rural parish.
- 5.15 Kew Palace, or the Dutch House as it is also known originated as one of the many properties created by Thomas Byrkes at the end of the 15<sup>th</sup> century. Despite extensive research, it remains uncertain who owned several of the houses with any clarity. The site of the Dutch House may have been conveyed to Robert Dudley, Earl of Essex in 1558, though an alternative development is possible. John Cloake has suggested that the site of the Palace was originally two copyhold cottages, which were small tenements belonging, in 1500 to Robert Makyn and Robert Lydgold (*ibid*, 86). No archaeological evidence for any structure or occupation earlier than the mid-16<sup>th</sup> century has yet been found, however.
- The existing cellar of the house, which may be broadly dated on its fabric to the latter half of the 16<sup>th</sup> century is of a calibre which might suggest that a relatively pretentious house once stood on the site. This cellar now occupies three quadrants of the existing footprint, but is entirely absent on the south-east. Geophysical prospecting has established that no earlier in-filled cellar ever existed on this part of the site. The western side is occupied by large vaulted chambers, with a small passage leading to a well on the north-east. This may suggest that the original house was orientated east to west, with a service wing to the rear, and that the area to the west was a garden or approach. The nature of the earlier house is unknown. It may have been partly of brick, with perhaps other areas of timber-framing, but no evidence has yet emerged to elucidate any detail.
- 5.17 In 1630, when the estate was transferred from the Portman family to Sir Robert Carr of Ancrum, a small portion was reserved and leased to Samuel Fortrey,

junior. About ten years earlier, his uncle Peter Fortrey had been given a lease on the property, though redevelopment seems to have taken place by Samuel Fortrey senior and his wife Catherine. It is curious why Samuel himself did not take up the lease, but he may have been disqualified from holding property as a resident alien. The Fortreys were a prominent Protestant merchant family from the Low Countries, who fled to England in the later 16<sup>th</sup> century.

- 5.18 Samuel and Catherine constructed the house which exists today, as a double-pile house in brick of great virtuosity, which is a rare survival of its type, and unique for the London style which was once commonplace. Little is known about the setting and surrounding of the original gardens, though the diarist John Evelyn, who knew the adjoining Dairy House (later known as the White House) noted the fineness of the nearby formal gardens there.
- 5.19 In 1728, Queen Caroline took a lease on the Dutch House, which had latterly been occupied by Sir Richard Levett, formerly Lord Mayor of London. The house initially accommodated her three daughters, but with the passing of time, only Princess Amelia remained at the house. During this period, a number of other buildings were also pressed into use, creating a royal compound which included the Queen's House and the White House, occupied by Frederick, Prince of Wales. This period of residence was seminal in the development of the surrounding lands as a botanical and ornamental garden, with new features laid out by Capability Brown and William Chambers.
- 5.20 From 1751, with the death of Prince Frederick, the Dutch House became the established residence for the Prince of Wales. At some time during the 18<sup>th</sup> century the house had been augmented with the addition of buildings to the west, comprising a kitchen range and other ancillary buildings, which probably meant that the original kitchens of the house were moved out to lessen noise and smell for the occupants. When this occurred is difficult to say, but the buildings were already in place by 1734 when John Rocque made the first accurate map of the area (Fig. 2). Conceivably the additions may have been made for the earlier princesses. The refurbishment of the house with a new staircase, panelling and doors, all from around 1730 make this the most likely date, though some of the additions may be earlier.
- 5.21 After a gap following the succession of Prince George as King in 1760, the house was once again used as a school-room and residence for a new generation of princes, including George, Prince of Wales, later King George IV.

  The house was bought outright by the King in 1780. At the end of the 18<sup>th</sup>

century, as King George III began to suffer increasing bouts of porphyria, he was often sent for recuperation, or even incarceration at the nearby White House. The King initiated the construction of an enormous 'castellated palace' on an adjoining plot, and the White House was neglected, shifting the focus of royal residence to the Dutch House. The grand new palace was destined never to be completed, and the White House was demolished, leaving the Dutch House as the principal royal building on the site. It is now known that the adjoining kitchen block was at some stage converted for use as accommodation for the King himself, where he could be kept at a safe distance from his family during the darker moments of his illness.

- 5.22 After 1806, visits by the King ceased, and less frequent residence by the Queen and princesses is recorded in the accounts. In 1818, Queen Charlotte was taken ill *en route* from London to Windsor, and after a few months at Kew, died in the house.
- 5.23 For the rest of the 19<sup>th</sup> century, the house was maintained at a very basic level, and gradually plundered by the Sovereign for paintings and furniture, so that by the 1870s, little remained and the house was no longer considered fit as a royal residence. The ancillary buildings were allowed to fall into disrepair, so that in 1880, Queen Victoria ordered the demolition of the service wing to the west. By 1899, the Queen, in a pragmatic move, opened the gardens and palace to the public, setting an important precedent.
- 5.24 Over many years, the palace has continued to serve as an important public monument, though various restorations and presentation schemes. It closed to the public for major renovation and remedial work in 1996.

#### 6 METHODOLOGY

- 6.1 A trench was dug by contractors against the west façade of the Kew Palace, in three stages, corresponding to the positions of a platform lift, stairwell and lift shaft. These three areas were recorded as trenches PL (platform lift), SW (stairwell), and LS (Lift shaft). The separate trenches were consolidated into one continuous trench following the removal of the existing stairwell with dimensions c.5m x 2.5m with a maximum depth of 1.10m. The archaeological watching brief sought to monitor the survival of archaeological deposits close to the foundations of the Kew Palace, and to record any surviving features prior to construction of the lift shafts and new stair well.
- All digging and breaking out of in situ masonry was done by hand with efforts made by the contractors to maintain and reuse the historic bricks where salvageable. Initially this material was stored to the west of the trench on pallets and boards, but was subsequently transferred to rubble sacks and removed from site during the course of the watching brief. Soft stripping of the interior of the house in the position of a previously blocked up doorway was undertaken by contractors to provide access for the lift shaft to the first floor.
- All investigation of archaeological levels was by hand, with cleaning, examination and recording in both plan and section and partial excavation of some features to obtain dating evidence or to elucidate the stratigraphic sequence. The structures themselves were cleaned, recorded, photographed and the bricks were examined onsite to determine fabric types.
- Recording on site was undertaken using the single context recording system as specified in the Museum of London Site Manual. Plans were drawn at a scale of 1:20, and full or representative sections at a scale of 1:10. Contexts were numbered sequentially and recorded on *pro-forma* context sheets.
- 6.5 The site was given the code: KEW 4, conforming to HRP's in-house site sequence
- On completion of the fieldwork the construction of a new stair well and lift shafts will be undertaken and the concrete and bricks will be reinstated by a contractor.

#### 7 THE ARCHAEOLOGICAL SEQUENCE

#### 7.1 Phase 1 – Natural

7.1.1 The earliest deposit encountered was a loose mid yellowish brown sandy gravel [121] identified in pockets across the base of the trench PL and SW at heights of between 4.05m OD towards the south of the trench and 3.91m OD towards the north. This layer was thought to be equivalent to the evaluation natural layer [22]. It was interpreted as forming part of the natural river terrace gravels, with the gradual slope from south to north across the area of the trench reflecting the natural topography of the area, sloping down towards the river to the north. The natural was not observed in the south of trench LS due to modern truncations and less deep excavation.

# 7.2 Phase 2 – 16<sup>th</sup> century (Tudor) foundations Figs. 3, 4, 5

- 7.2.1 The natural gravel [121] was cut into by a construction cut [106]/[118] for the foundations of Kew Palace. The fill [105]/[117] was partially excavated and produced brick fragments of Tudor type bricks in a local sandy fabric (Museum of London fabric 3033), and one small fragment of green glazed Border ware (Museum of London fabric BORD). The sherd was glazed on the interior and sooted on the exterior and may have come from a pipkin (B Sudds pers. comm.). A date range of 1550 to 1700 is suggested by the pot, and a date of 1450-1700 by the brick fragments.
- 7.2.2 The foundation [101]/[111] was revealed along the west façade in the north (trench PL) and stair well area (Trench SW), but was partially obscured to the south by the later addition of a drain run [20] identified in the evaluation. The total visible dimensions of [106]/[111] were 5.82m N/S along the eastern limit of excavation, O.51m E/W and a maximum depth of c.0.87m with a highest level of 4.58m OD. The bricks were laid in irregular header/English bond, and bonded with off-white, lime and sand mortar. The bricks were of unfrogged, local orange-firing sandy fabric 3033, with dimensions of 205-210 x 98-100 x 50-54mm. The construction of the 'Dutch House' in 1631 entailed cutting into the Tudor foundations to provide access into the Tudor period cellar. This suggests an exit was not here previously, and may indicate a change of alignment for the main façade of the house from an E/W axis in the Tudor period to the current N/S axis, as suggested in the Desk-based Assessment<sup>6</sup>.

<sup>&</sup>lt;sup>6</sup> Prosser 2003, 8

# 7.3 Phase 3 – 18<sup>th</sup> Century

- 7.3.1 A friable mid to dark brown silty gravelly sand [13] with a highest level of 4.09m OD and a maximum thickness of 0.20m was recorded during the evaluation. This deposit was recorded across the area of the evaluation trench, and appears to have been laid down in order to raise and level the area prior to the 18<sup>th</sup> century development of the site. This layer was not clearly observed in the area of the watching brief due to truncation of the made ground layers by the construction cut for the modern stair well [113] and other features.
- 7.3.2 A number of brick structures were recorded during the evaluation cut into this consolidation layer. Two of these features were found to continue into the area of the watching brief. A foundation wall in trench SW was identified as the evaluation phase foundation wall [4]. The wall was quickly sketched in plan immediately prior to demolition and therefore its recorded position may be slightly awry. It was also recorded in section however (Fig. 6). When compared to the location in plan the wall does not share the same alignment, but the fabric and method of construction is the same and there is no doubt it is the same wall. It is possible given the later truncations in the area that the wall as seen represent a section that has become detached from the in situ wall and shifted to the south. The wall extended E-W across the centre of the trench for approximately 0.46m and survived to a maximum height of 4.33m OD. The eastern edge of the wall was truncated by the construction cut [113] of the modern stairwell [102]. The bottom course of wall [4] was edge laid, with the second course consisting of stretcher laid bricks in fabrics 3032 & 3034. The presence of fabric 3034 suggests that this wall may be slightly later in date and may belong to the 19<sup>th</sup> century. The function of the wall is not clear, however. It is known that a staircase was situated on or near this area of the site immediately prior to the demolition of the service block, and the wall may form part of this structure. Its form, however, is more suggestive of a sleeper wall for a timber floor, and if this is the case, it is likely that the staircase is situated slightly further to the east.

# 7.4 Phase 4 – 19<sup>th</sup> Century

7.4.1 In trench SW a mid to dark brown sandy silt containing frequent ceramic building material and mortar fragments was recorded in section (Fig. 6) dumped around wall [4]. It was identified as evaluation phase fill [8], and had a maximum thickness of 0.22m and a highest level of 4.32m OD, and is likely to be associated with the demolition of the service wing in the later 19<sup>th</sup> century. Overlaying this dump was a layer of mortar and Flemish-type unglazed floor tiles [123], laying on bed but probably not in situ. This layer spread for approximately 1.30m N/S and 0.78m E/W with a thickness of c.0.11m and a

- maximum height of 4.52m OD. It probably represents a demolished floor and was considered to be part of the demolition layer [123] for the service wing.
- 7.4.2 At the southern end of the trench LS an E-W orientated brick wall [124] was identified as a brick and tile drain [7] recorded in the evaluation. This extended across the width of the trench LS, and could be seen tied into the foundations of the Kew Palace, although it had been truncated across the centre of the trench for a distance of 1.37m by a drain run [19]. The surviving masonry extended from the western L.O.E. for a length of 0.67m, and measured 0.210m wide x 0.28m high with a highest level of 4.52m OD. The northern course of the drain [7], not observed in trench LS, was constructed of frogged bricks in fabric 3034 suggesting a late 18<sup>th</sup> or 19<sup>th</sup> century date. However, the southern course appeared to be constructed in fabric 3032, and may therefore be slightly earlier in date. It may be that after the demolition of the service block the exterior wall, known to be in this area of the trench, was reused in the construction of drain [7]. This would explain the apparent variation in fabrics between the northern and southern elements of the drain.
- To the north in trench PL a 19<sup>th</sup> century domed brick soakaway [112] (fabric 7.4.3 3034 nr. 3035, 3032, 3033) was excavated through earlier deposits and structures, possibly contemporary with a similarly constructed structure [18] uncovered to the southwest during the evaluation. The exposed elements of the soakaway had a diameter of approximately 0.97m; it was excavated to a depth of approximately 0.47m, and had a highest level of 4.38m OD. The position of the soakaway is problematic. Structure [18] appears to have been constructed after the demolition of the service block and privy shaft in the later 19<sup>th</sup> century in order to drain the roof of the palace through feeding pipe [19]. However the construction of soakaway [112] entailed cutting into the foundations of the extant building, with a reasonable amount of effort expended in neatly rounding off the Tudor brickwork to form a circular cut [116] for the soakaway. If the service wing had already been demolished it is difficult to see why the soakaway would have been constructed so close to the foundations. A demolition layer [114] of mortar and CBM fragments with a maximum thickness of 0.27m and maximum height of 4.21m OD overlaying the top of soakaway [112] was interpreted as belonging to the destruction phase of the west wing in the late 19<sup>th</sup> century, so it is thought that the soakaway [112] was constructed in the mid- to late 19<sup>th</sup> century, just prior to the demolition of the west wing.
- 7.4.4 The demolition layer [114] was truncated in the northwest corner of trench PL by a cut [120]. The dark grey gravely silty fill [119] contained CBM and mortar fragments, and some roots. This feature is thought to represent a pit cut for the disposal of demolition rubble, or possibly for planting. It was overlain by a layer

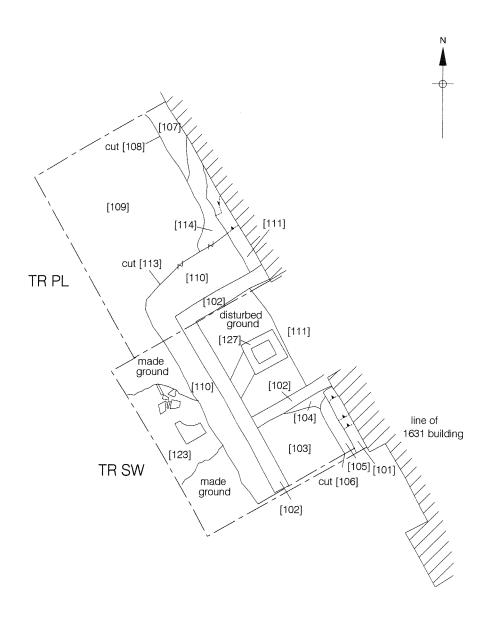
of dark brown sandy silt [109] representing made ground, probably dating to the late 19<sup>th</sup> century.

Exploration of the intended area of access for the lift shaft to the 1st floor of the 7.4.5 Kew Palace revealed a blocked doorway (Fig. 7). This was bricked up following the demolition of the service wing in the late 19th century. Mortar impressions of the door and frame revealed moulding patterns consistent with an 18th century date. This doorway had previously provided access to the service wing. Closer inspection revealed that the 18th century doorway had itself utilised an earlier window embrasure, approximately 0.95m from floor level, likely to belong to the 17<sup>th</sup> century build of the house, with bricks laid in Flemish bond. The bricks were in local sandy fabric 3033 and sandy silty fabric 3039, with dimensions c.210-218 x 98-105 x 60-64mm. The window embrasure was lined with cut bricks chamfered to create a splay with an angle of approximately 70°. The interior width of the embrasure was approximately 1.10m, with a wall thickness of approximately 0.46m (2 brick lengths). Thus the angle of the splay, if continued through the wall, would suggest an exterior width of c.0.75m or c.2½ feet. The maximum height of the window was obscured by render and paint higher up the wall surface, but it would have to be below the level of the timber joists running into the wall (Fig. 8). A typical ratio for windows on the first floor of a classically proportioned house might be in the order of 1:3 width: height on the façade, therefore an estimated height would be approximately 2.25m or 7½ feet. This would indicate the height of the window to have been about 0.10m (or one on edge brick course) below the ceiling joists. A second window embrasure was also noted to the south, of similar construction, although the level of the embrasure was slightly higher, approximately 1.14m from floor level. Timber studding and lathes forming the plasterwork render for the stateroom to the south obscured both the width and height of this window.

# 7.5 Phase 5 – Late 19<sup>th</sup>/20<sup>th</sup> Century

7.5.1 From the area of the stairwell southwards the 19<sup>th</sup> century demolition dumps were cut by construction cuts for drains [19] recorded during the evaluation, and [127], constructed probably at the same time as the stair well. in order to drain it and prevent flooding into the basement. These drains all converged onto the soakaway [18] recorded during the evaluation and reused as a soakaway for down pipes carrying rainwater from the Kew Palace. The construction cut [113] for a stairwell structure [102] was cut into the backfill of [127] but is likely to be contemporary and probably dates to the period of repair to the western façade following the demolition of the service wing. The makeup for the stairs consisted of a dark greyish brown gravelly sandy silt [103] with a highest level of 4.59m OD. The feeding pipe [20] attached to soakaway [18]

to provide further drainage to the Palace may have been an addition made during the 1960's presentation scheme that also created the existing brick courtyard and associated make-up layer [2]. At this time the height of the retaining wall for [102] was raised by four courses of machine-made Fletton type bricks.





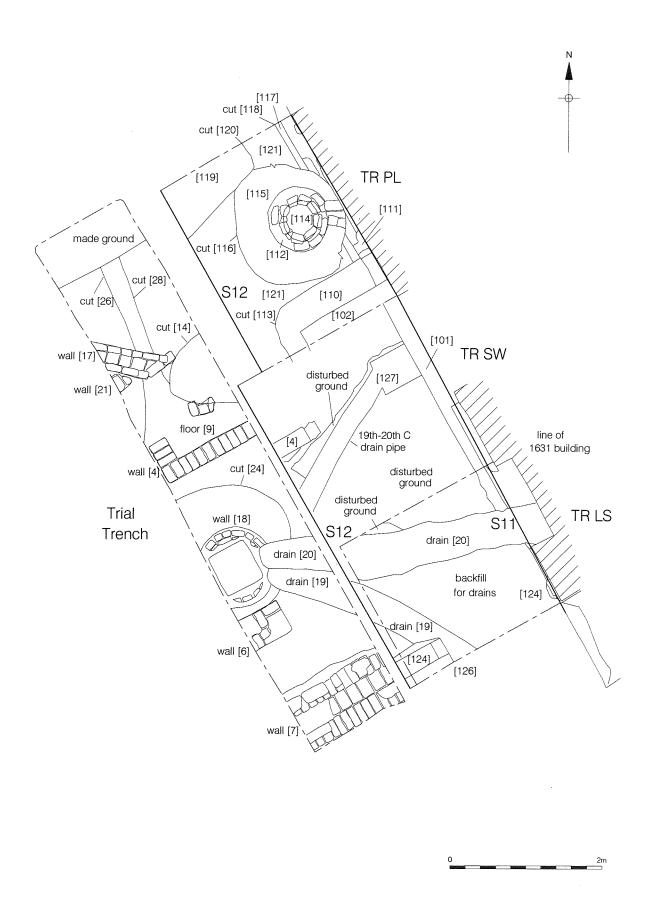
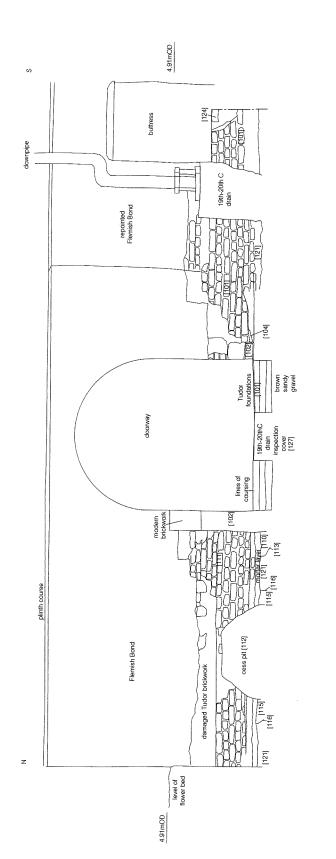


Figure 4 Multi-context plan of lift shaft, stiarwell and platform lift, in relation to previous Trial Trench 1:50



West facing elevation of Tudor foundations

2.5m

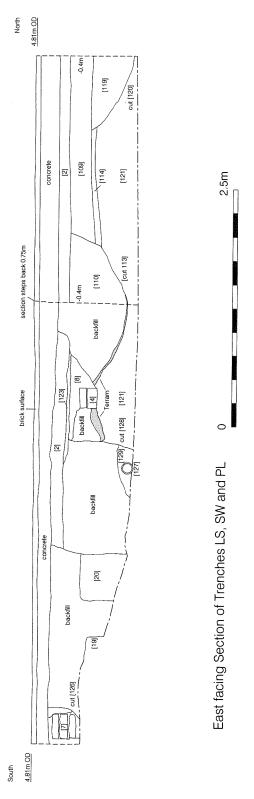
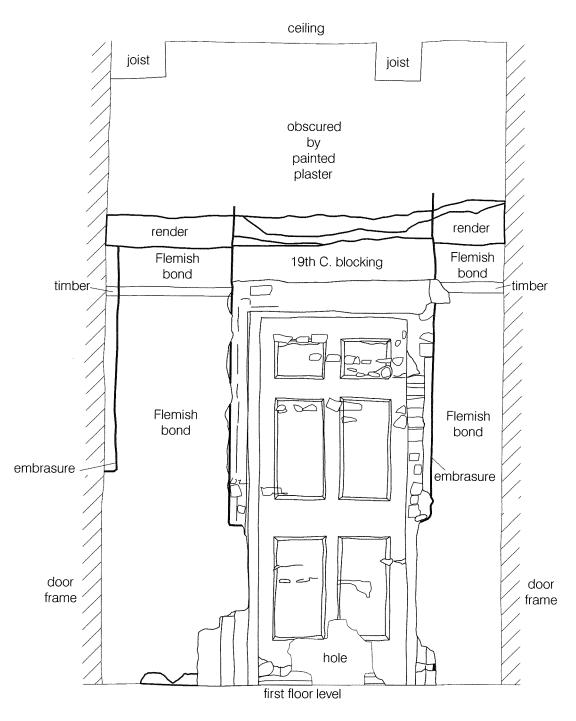


Figure 6 Section 12 1:40

Figure 7 Plan of first floor showing location of blocked doorway and 17th century window 1:100



Measured elevation of blocked doorway on first floor



Figure 8 Elevation of blocked doorway and 17th century window embrasure 1:20



Plate 1: 19<sup>th</sup> century soakaway [112]

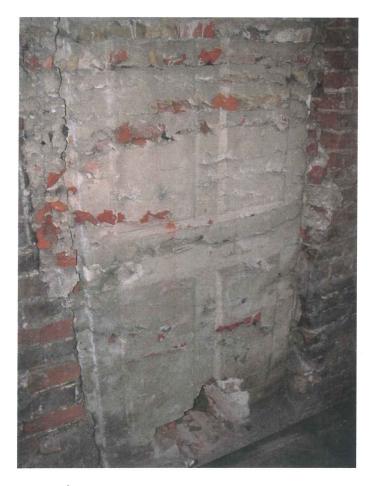


Plate 2: 17<sup>th</sup> century window embrasure and blocking

# 8 CONCLUSIONS

- The archaeological watching brief revealed evidence of natural river terrace gravels, into which construction cuts for the Tudor foundations of the Kew Palace had been dug. A fragment of green glazed border ware recovered from the backfill of the construction cut provided a possible date of construction of 1550 to 1700. This supports a postulated date of the latter half of the 16<sup>th</sup> century for extant brick fabrics utilized in the cellar of the Palace. A *terminus ante quem* is provided by the construction of the 'Dutch House' in 1631. The creation of an arched doorway to provide access to the cellar, by cutting into the foundations of the Tudor building on the west façade, supports the theory that the orientation of the building's main axis changed from EW to NS at this time.
- 8.2 During the early 18<sup>th</sup> century a kitchen wing was built to the west of the main house, which is shown on Rocque's map of 1734. Elements of a drain found tied into the wall of the main house are likely to form an original portion of this service block, although a small wall bisecting the centre of the trench cannot be so easily placed. Some of the brick fabrics recorded in its make-up are more typical of a late 18<sup>th</sup> / 19<sup>th</sup> century date, and as such suggest this foundation may represent a later addition or alteration to the service wing. It may form part of a staircase, which is known to be situated on or near this area of the site, leading down to the cellar of the palace. In form it is more typical of a sleeper wall for a timber floor, however, which would suggest that the staircase was situated slightly further to the east.
- A doorway on the first floor of the western façade situated between the two staterooms was bricked up following the demolition of the service wing in the late 19<sup>th</sup> century. Mortar impressions of the door and frame revealed moulding patterns consistent with an 18<sup>th</sup> century date. This doorway had previously provided access to the service wing. Closer inspection revealed that the 18<sup>th</sup> century doorway had itself utilised an earlier window embrasure, likely to belong to the 17<sup>th</sup> century build of the house.
- 8.4 A domed brick soakaway was cut into the earlier (Tudor) foundations probably during the late 18<sup>th</sup> or 19<sup>th</sup> centuries. The cement-like mortar and brick fabrics used in construction indicate a mid to late 19<sup>th</sup> century date as more probable.
- 8.5 Deposits of demolition material around the walls and soakaway are likely to date to the final demolition of the service block in the later 19<sup>th</sup> century. It may also have been at this time that the modern drains collecting the runoff from the building were constructed.

# 8 BIBLIOGRAPHY

- Bradley, T, 2004; An archaeological evaluation at Kew Palace, Royal Botanic Gardens, Kew, London Borough of Richmond upon Thames, Pre-Construct Archaeology Ltd. Archive report.
- Butler, J, 2004; 'A method statement for an archaeological evaluation at Kew Palace, Royal Botanic Gardens, Kew, London Borough of Richmond upon Thames', Pre-Construct Archaeology Ltd. unpublished archive report.
- Prosser, L., 2003; Kew Palace: An Archaeological Desk-Based Assessment, Historic Royal Palaces unpublished report.

# 8 ACKNOWLEDGEMENTS

- 9.1 Pre-Construct Archaeology Ltd. and the author would like to thank all those involved in the project. Particularly we wish to thank Lee Prosser and Jo Thwaite from the Historic Royal Palaces for commissioning the project and Mike Smith of Gardiner & Theobald LLP for onsite assistance and a sympathetic approach to the ground works that respected the nature of the monument as a Grade 1 listed building.
- 9.2 The author would also like to thank Neil Hawkins (PCA) for assisting on the Watching Brief, Berni Sudds for looking at the pottery. Thanks also to Josephine Brown and Adrian Nash for preparing the site plans and illustrations. Gratitude is also expressed to the staff of the Royal Botanic Gardens for their cooperation.

APPENDIX 1a CONTEXT INDEX watching brief phase

| CONTEXT | PLAN     | SECTION | РНОТО | PHASE | TYPE    | DESCRIPTION  | LEVEL (m OD) |
|---------|----------|---------|-------|-------|---------|--|--------------|
| 101     | SW multi | 11      | YES   | 2     | Masonry | Tudor foundation   | 4.58         |
| 102     | SW multi | 11      | NO    | 5     | Masonry | Modern stair well  | 4.91         |
| 103     | SW multi | 11      | YES   | 5     | Fill    | Make-up for modern stair well  | 4.59         |
| 104     | SW multi | 11      | NO    | 5     | Fill    | Bedding layer for modern stair well                                  | 4.60         |
| 105     | SW multi | *       | NO    | 2     | Fill    | Backfill of construction cut [106]                                   | 4.20         |
| 106     | SW multi | *       | NO    | 2     | Cut     | Construction cut for [101]   | 4.20         |
| 107     | PL multi | 1       | NO    | 5     | Fill    | Fill of cut [108]  | 4.90         |
| 108     | PL multi | 1       | NO    | 5     | Cut     | Cut for bedding plants   | 4.90         |
| 109     | PL multi | *       | NO    | 4     | Layer   | Sandy silty made ground  | 4.44         |
| 110     | PL multi | 1       | NO    | 5     | Fill    | Backfill of cut [113]  | 4.91         |
| 111     | PL multi | 1       | YES   | 2     | Masonry | Tudor foundation = [101]   | 4.51         |
| 112     | PL multi | 1       | YES   | 4     | Masonry | 19 <sup>th</sup> C soakaway  | 4.38         |
| 113     | PL multi | 1       | NO    | 5     | Cut     | Construction cut for 19 <sup>th</sup> /20 <sup>th</sup> C stair well | 4.91         |
| 114     | PL multi | 11      | NO    | 4     | Layer   | Demolition layer   | 4.21         |
| 115     | PL multi | 1       | NO    | 4     | Fill    | Backfill for cut [116]   | 4.36         |
| 116     | PL multi | *       | NO    | 4     | Cut     | Construction cut for [112]   | 4.36         |
| 117     | PL multi | *       | NO    | 2     | Fill    | Backfill of cut [118] = [105]  | 4.21         |
| 118     | PL multi | *       | NO    | 2     | Cut     | Construction cut for [111] = [106]                                   | 4.21         |
| 119     | PL multi | 1       | NO    | 4     | Fill    | Sandy gravel silt fill of [120]                                      | 4.21         |
| 120     | PL multi | 1       | NO    | 4     | Cut     | Pit cut for demolition debris?                                       | 4.21         |
| 121     | PL multi | *       | NO    | 1     | Layer   | Natural gravel = [22]  | 4.19         |
| 122     | PL multi | 1       | NO    | 4     | Fill    | Silty fill of soakaway [112]   | 4.28         |
| 123     | LS multi | *       | YES   | 4     | Layer   | Mortar & tile spread – demolition layer? -                           | 4.52         |
| 124     | LS multi | *       | NO    | 4     | Masonry | E-W brick & tile drain, ?reused wall = [7]                           | 4.56         |
| 125     | LS multi | *       | NO    | 4     | Fill    | Backfill of construction cut [124] = [29]                            | 4.60         |
| 126     | LS multi | 1       | NO    | 4     | Cut     | Construction cut for wall [124] = [30]                               | 4.60         |
| 127     | SW2      | 1       | NO    | 5     | Masonry | Late 19 <sup>th</sup> /20 <sup>th</sup> C Drain pipe                 | 3.87         |
| 128     | SW2      | 1       | NO    | 5     | Cut     | Construction cut for drain pipe [127]                                | 4.44         |
| 129     | SW2      | *       | NO    | 5     | Fill    | Backfill of cut [128]  | 3.94         |

APPENDIX 1b CONTEXT INDEX Evaluation Phase

| CONTEXT | PLAN      | SECTION | РНОТО | PHASE | TYPE    | DESCRIPTION                                  | LEVEL (m OD) |
|---------|-----------|---------|-------|-------|---------|--|--------------|
| 1       | pre-ex    | 1       | yes   | 5     | Layer   | gravelly sandy silt ground raising           | 4.32         |
| 2       | *         | 1       | no    | 5     | Layer   | dark greyish brown levelling layer           | 4.38         |
| 3       | pre-ex/17 | 1       | yes   | 5     | Fill    | mixed silty sand & CBM infilling of [7]      | 4.51         |
| 4       | pre-ex/17 | 1       | yes   | 3     | Masonry | brick foundation for floor or steps          | 4.33         |
| 5       | pre-ex/17 | *       | yes   | 4     | Masonry | york stone slab over soakaway [18]           | 4.33         |
| 6       | pre-ex/17 | *       | yes   | 3     | Masonry | southern brick buttress of fireplace         | 4.39         |
| 7       | pre-ex/17 | 1       | yes   | 4     | Masonry | E-W brick & tile drain, possibly reused wall | 4.56         |
| 8       | pre-ex    | 1       | yes   | 4     | Fill    | dark brown sandy silt infill around [4]      | 4.32         |
| 9       | 9         | *       | no    | 3     | Masonry | truncated tile surface, associated with [17] | 4.09         |
| 10      | *         | 1       | no    | 4     | Fill    | dark brown sandy silt fill of [11]           | 4.09         |
| 11      | 11        | 1       | no    | 4     | Cut     | rounded partially exposed pit (diam.0.50m)   | 4.09         |
| 12      | *         | 1       | no    | 5     | Fill    | dark brown sandy silt fill of [14]           | 4.32         |
| 13      | *         | 1       | no    | 3     | Layer   | silty gravelly sand ground consolidation     | 4.09         |
| 14      | 14        | 1       | no    | 5     | Cut     | rounded partially exposed pit (diam.0.74m)   | 4.32         |
| 15      | 15        | 1       | no    | 3     | Layer   | silty sand bedding for [4] & [9]             | 4.06         |
| 16      | *         | *       | yes   | 4     | Fill    | mixed silty sand & CBM infilling of [17]     | 4.21         |
| 17      | 17        | *       | yes   | 3     | Masonry | truncated brick & tile drain                 | 4.22         |
| 18      | pre-ex/17 | *       | yes   | 4     | Masonry | domed brick soakaway                         | 4.23         |
| 19      | 17        | 1       | yes   | 4     | Masonry | concrete cased pipe feeding [18]             | 4.19         |
| 20      | 17        | 1       | yes   | 5     | Masonry | concrete cased pipe feeding [18]             | 4.31         |
| 21      | 17        | *       | yes   | 3     | Masonry | neavily truncated brickwork, part of [17]    | 4.2          |
| 22      | post-ex   | 1       | yes   | 1     | Layer   | natural sandy gravel                         | 4.05         |
| 23      | post-ex   | *       | no    | 4     | Fill    | silty sand backfill of soakaway [18]         | 4.05         |
| 24      | post-ex   | *       | no    | 4     | Cut     | construction cut for soakaway [18]           | 4.05         |
| 25      | post-ex   | *       | no    | 2     | Fill    | silty sandy gravel fill of linear cut [26]   | 3.97         |
| 26      | post-ex   | 1       | no    | 2     | Cut     | N-S linear cut                               | 3.88         |
| 27      | post-ex   | 1       | no    | 2     | Fill    | silty sandy gravel fill of linear cut [28]   | 3.88         |
| 28      | post-ex   | 1       | no    | 2     | Cut     | N-S linear cut                               | 3.88         |
| 29      | *         | *       | no    | 4     | Fill    | silty sand backfill of construction cut [30] | 4.56         |
| 30      | *         | *       | no    | 4     | Cut     | construction cut for wall/drain [7]          | 4.56         |
| 31      | *         | 1       | no    | 4     | Fill    | sandy silt backfill of construction cut [32] | 4.52         |
| 32      | *         | 1       | no    | 4     | Cut     | constuction cut for pipe [19]                | 4.52         |
| 33      | *         | 1       | no    | 5     | Fill    | sandy silt backfill of construction cut [34] | 4.51         |
| 34      | *         | 1       | no    | 5     | Cut     | constuction cut for pipe [20]                | 4.51         |

MATRIX APPENDIX 2 Site Matrix KEW4 watching brief

#### **APPENDIX 3**

#### **BUILDING MATERIALS ASSESSMENT**

John Brown BA MA

The following is an assessment of the building materials exposed during evaluation work at the Kew Palace, compiled during fieldwork undertaken from 09 March 2005.

#### Wall Foundation [4]

A foundation wall was recorded extending E-W into the section of trench SW, and identified as evaluation phase wall foundation [4]. Although in the approximate location of a staircase, the form of the foundation was more suggestive of a sleeper wall for a timber floor. The fabrics comprising the wall were 3032 & 3034, and suggested a slightly later 18<sup>th</sup> or early 19<sup>th</sup> century date for the foundation.

Fabric 3034 - Length 222-230mm, Width 90-104mm, Thickness 62-66mm.

# Tudor Wall Foundation [101]/[111]

The extant building was found to be constructed upon earlier foundations of brick fabric 3033, unfrogged, narrow bricks with uneven bases and rounded arrises.

Fabric 3033 - Length 205-210mm, Width 98-100mm, Thickness 50-54mm.

Fragments of render were observed below the current ground level on the Tudor foundations and a sample taken for closer examination. One small fragment of lime-based mortar was taken from [111], but most of the render was determined (by eye) to be of a type similar to Portland cement or 'Roman' cement, and most likely relates to the re-facing of the Western facade in the late 19<sup>th</sup> century following the demolition of the service wing.

# Stair Well [102]

The stainwell and retaining wall were constructed of 'London stock' type bricks (fabric 3034nr3035), with a later addition of four courses of machine-pressed orange-firing Fletton type bricks probably added in the 1960's. Brick measurements were not taken.

# Soakaway [112]

A domed brick soakaway was constructed of 19<sup>th</sup> century fabric 3034 near 3035 and reused bricks of fabric 3032 and 3033. The structure was bonded with cement-like mortar suggesting a construction date of mid- to late 19<sup>th</sup> century date.

Fabric 3034 – Length c.210mm, Width c.100mm, Thickness c.64mm.

Drain [124] = [7]

An E-W orientated brick and tile drain was recorded in trench LS, extending into the section at the south of the trench. The feature was identified as evaluation phase drain [7]. The southern side of the drain appeared to be entirely comprised of bricks in fabric 3032, which suggested that this side of the drain may have been associated with the exterior wall of the 18<sup>th</sup> century service wing.

Fabric 3032 - Length 224-229mm, Width 100-103mm, Thickness 68mm

Loose material contained recovered from the demolition layers included bricks of fabric 3032, 3033 and 3034. Two fragments of roof tiles, one of peg tile fabric 2276, and one of pan tile fabric 2279, were also recovered. Also recovered from a layer [123] were fragments of Flemish type, unglazed floor tiles of fabrics prominent from 1640 to 1800 AD. It is likely that these tiles were original flooring for the 18<sup>th</sup> century service wing. One complete (broken) fragment had dimensions of 290x284x40mm.

The assemblage recovered from the excavation was small and considered to be only of low significance. Bricks observed in situ help to establish the dates of individual contexts, but do not dramatically alter or refine the chronology of the site. No further work is therefore recommended for the assemblage as recovered.

# **APPENDIX 4 OASIS DATA COLLECTION FORM**

# a. OASIS ID: preconst1-7932

Project details

Project name

Kew Palace Watching Brief

Short description of the project

An archaeological watching brief and building recording undertaken during construction of disabled access at western facade of Kew Palace

Project dates

Start: 09-03-2005 End: 20-04-2005

Previous/future work

Yes / Not known

Any associated project reference

codes

KEW4 - Sitecode

Type of project

Recording project

Site status

Listed Building

Site status

Scheduled Ancient Monument (SAM)

Site status

World Heritage Site

Current Land use

Other 5 - Garden

Current Land use

Other 2 - In use as a building

Current Land use

Other 8 - Land dedicated to the display of a monument

Monument type

ROYAL PALACE Post Medieval

Monument type

ROYAL GARDEN Post Medieval

Significant Finds

**CBM Post Medieval** 

Significant Finds

POT Post Medieval

Investigation type

'Watching Brief'

Prompt

Listed Building Consent

**Prompt** 

Direction from Local Planning Authority - PPG16

**Project location** 

Country

England

Site location

GREATER LONDON RICHMOND UPON THAMES RICHMOND AND KEW Kew

Palace, Royal Botanic Gardens, Kew

Study area

12.00 Square metres

National grid reference

TQ 1847 7747 Point

Height OD

Min: 3.74m Max: 4.19m

**Project archives** 

Physical Archive recipient

Local museum

**Physical Contents** 

'Ceramics', 'Glass'

Physical Archive

Exists?

Yes

Digital Archive recipient

Local museum

Digital Media available

'Spreadsheets','Text'

Digital Archive Exists?

Yes

Paper Archive recipient

Local Museum

Paper Media available

'Context

sheet', 'Diary', 'Drawing', 'Matrices', 'Photograph', 'Plan', 'Report', 'Section', 'Unpublished

Text'

Paper Archive Exists?

Yes

Project bibliography 1

Grey literature (unpublished document/manuscript)

Publication type

Title

An archaeological Watching Brief at Kew Palace, Royal Botanic Gardens, Kew,

London Borough of Richmond upon Thames

Author(s)/Editor(s)

'Brown, J. E.'

Date

2005

Issuer or

publisher

Pre-Construct Archaeology Ltd.

Place of issue or

publication

London

Description

archive report ring-bound

Entered by

John Brown (jeb@pre-construct.com)

Entered on

26 April 2005

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