

**THE GREAT PAGODA, ROYAL  
BOTANIC GARDENS, KEW,  
LONDON BOROUGH OF RICHMOND  
UPON THAMES**

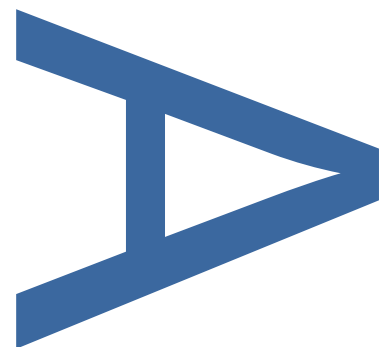
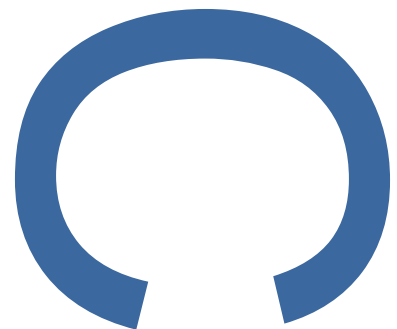
**PHASE III ARCHAEOLOGICAL  
EVALUATION**

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**HRP SITE CODE: KEW05**

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**SEPTEMBER 2016**




**PRE-CONSTRUCT ARCHAEOLOGY**

DOCUMENT VERIFICATION

THE GREAT PAGODA, ROYAL BOTANIC  
GARDENS, KEW

PHASE III ARCHAEOLOGICAL EVALUATION

Quality Control

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**An Archaeological Evaluation at The Great Pagoda  
(Phase III), Royal Botanic Gardens, Kew, London  
Borough of Richmond Upon Thames, TW9 3AB**

**HRP Site Code: KEW05**

**PCA Site Code: KEWP14**

**Central National Grid Reference: TQ 18471 76076**

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**Pre-Construct Archaeology Limited, September 2016**

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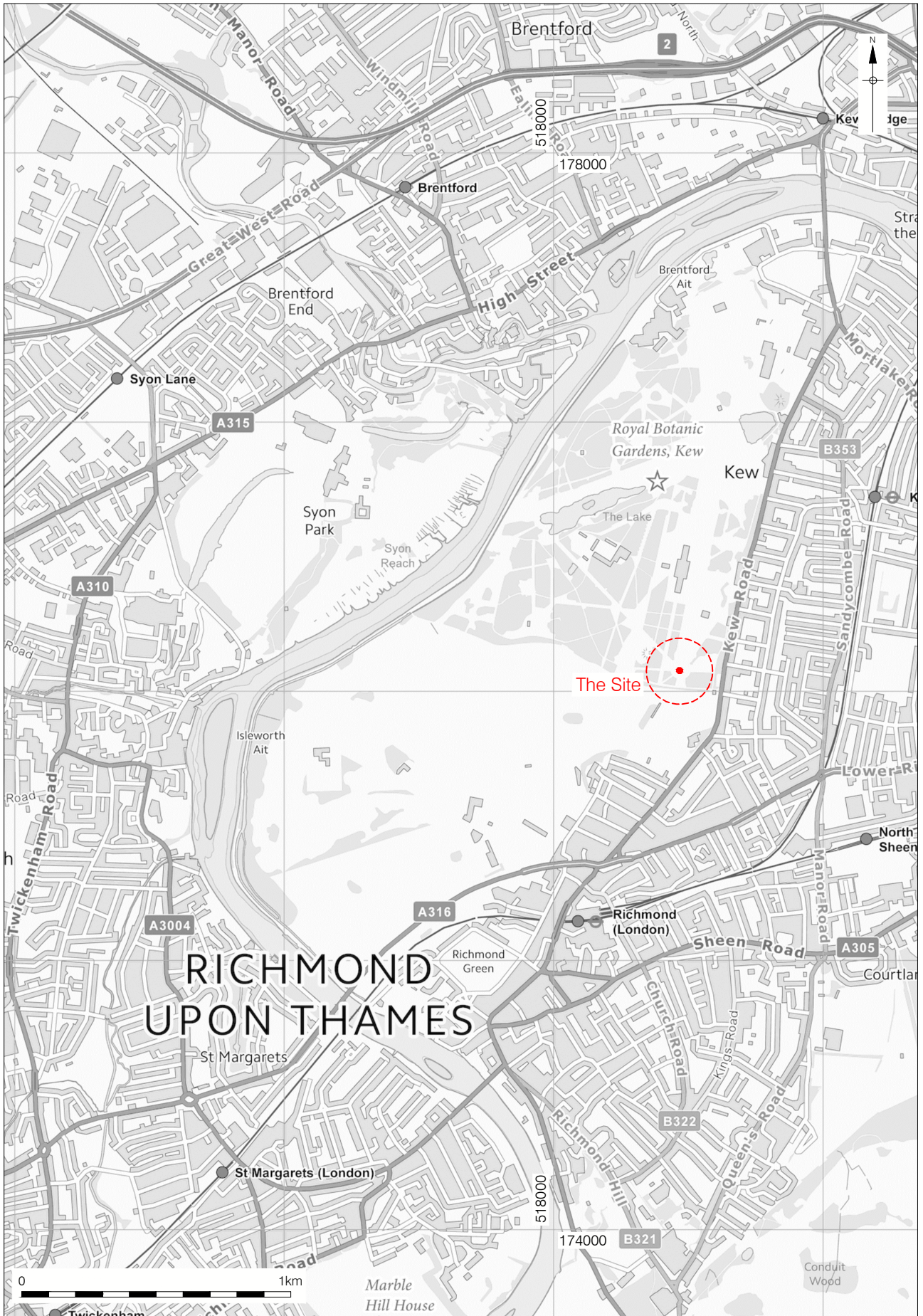
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## 1 ABSTRACT

- 1.1 This report details the results of an archaeological evaluation undertaken at The Great Pagoda, Royal Botanic Gardens, Kew, London Borough of Richmond upon Thames, TW9 3AB. The evaluation was commissioned by Historic Royal Palaces as part of initial investigation works prior to further conservation, and took place between the 30<sup>th</sup> August and the 2<sup>nd</sup> September 2016. This followed earlier investigations which took place between the 24<sup>th</sup> and 25<sup>th</sup> March 2014 and the 10<sup>th</sup> and 13<sup>th</sup> August 2015. These have previously been reported in Haslam 2014 and Haslam 2015. The Pagoda is located in the south eastern corner of Kew Gardens.
- 1.2 An evaluation comprising one trench was undertaken as part of the Phase II evaluation. This was located on the north-west side of the Pagoda, opposite one of the blind recesses.
- 1.3 The evaluation trench was excavated in an attempt to find a series of steps and/or other architectural or landscaping features depicted by Sir William Chambers in an elevation of the Pagoda dating to c. 1761. The Chambers image appears to show the former ground level surrounding the Pagoda at a lower height than the modern ground surface with a series of three access steps situated on four sides of the octagonal Pagoda base. A further drawing by George Scharf dating to 1820 also appears to show the Pagoda on a single raised plinth. The Chambers drawing also appears to suggest that the timber columns were closer to the main structure than the extant column line.
- 1.4 The trench was sealed by a modern path constructed from resin bonded gravel. This was underlain by an earlier modern tarmac surface which overlay a sandy bedding deposit.
- 1.5 The earliest deposit encountered at the base of the trench was the natural sand and gravel. This was overlain by a thick deposit of redeposited natural material. Cutting into the redeposited natural was a garden feature which extended into both the western and northern limits of excavation. Also overlying the redeposited natural was a large fragment of stone which appeared to have been dumped up against the footings of the Pagoda. An earlier topsoil deposit sealed the garden feature and the stone. This was sealed by a layer of mid brown pink sandy gravel which was interpreted as an earlier path associated with the Pagoda. Situated at a depth of 0.13m beneath the top of the Pagoda base, it is possible that this surface is depicted on George Scharf's sketch of the structure which dates to 1820. This appears to show the Pagoda base marginally elevated above the contemporary ground surface. The gravel surface was sealed by the make-up for the modern tarmac.

## **2 INTRODUCTION**

- 2.1 This report details the results and working methods of an archaeological evaluation (Phase III) undertaken by Pre-Construct Archaeology Ltd at The Great Pagoda, Royal Botanic Gardens, Kew, London Borough of Richmond upon Thames, TW9 3AB. The evaluation took place between the 30th of August and the 2nd of September 2016.
- 2.2 A single evaluation trench measuring 1m x 2m was excavated during the investigations. The trench was external and was situated on the north-west side of the Pagoda. The trench was sealed by resin-bonded gravel which was broken out with the use of electric hand held vibration dampened breaker fitted with a broad chisel.
- 2.3 The Pagoda itself is located in the south-eastern corner of Kew Gardens with Hoxton Lane situated to the south, the Japanese Gateway & Landscape to the west, the Pavilion Restaurant and Temperate House to the north and the Lion Gate on Kew Road to the east.
- 2.4 A Health and Safety Risk Assessment & Method Statement (Bradley 2016) was prepared prior to the fieldwork commencing. This was accompanied by a Brief for an archaeological investigation provided by Historic Royal Palaces (Drysdale 2016).
- 2.5 The National Grid Reference of the site is TQ 18471 76076.
- 2.6 The project was monitored for the client by Patricia Les (Head of Building Conservation - Historic Royal Palaces). Rob Umney (Conservation Building Surveyor - Historic Royal Palaces) also assisted with the coordination of the project. The fieldwork was project managed by Tim Bradley and was supervised by the author, Alexis Haslam, both of Pre-Construct Archaeology Limited.
- 2.7 The site archive will be deposited with the Historic Royal Palaces archive at Hampton Court under Site Code KEW05 as issued by Historic Royal Palaces.



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Figure 1  
Site Location  
1:20,000 at A4

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### 3 PLANNING BACKGROUND

- 3.1 On the 27th of March 2012 the Department for Communities and Local Government issued the National Planning Policy Framework (NPPF). Section 12 of this policy framework is entitled 'Conserving and Enhancing the Historic Environment' and replaces Planning Policy Statement 5 (PPS5), which had previously been adopted in March 2010. PPS5 replaced the earlier Planning Policy Guidance Note 16 (PPG16). As such, Section 12 provides guidance for planning authorities, property owners, developers and others on the preservation and investigation of archaeological remains.
- 3.2 In considering any planning application for development, the local planning authority will be guided by the policy framework set by government guidance, in this instance NPPF Section 12, by current Structure and Local Plan policy and by other material considerations.

#### **ARCHAEOLOGY IN THE LONDON BOROUGH OF RICHMOND UPON THAMES AND THE DEVELOPMENT MANAGEMENT PLAN**

- 3.3 The relevant Local Development Framework is provided by the Development Management Plan which was adopted in November 2011. This plan contains policy statements in respect of protecting the buried archaeological resource. The site is subject to the Council's Archaeology Policy:

##### **Policy DM HD 4**

##### **Archaeological Sites**

**The Council will seek to protect, enhance and promote its archaeological heritage (both above and below ground), and will encourage its interpretation and presentation to the public. It will take the necessary measures required to safeguard the archaeological remains found, and refuse planning permission where proposals would adversely affect archaeological remains or their setting.**

4.3.18 Archaeology can include industrial sites, buildings, machinery, artifacts, air raid shelters and modest domestic buildings. The preservation of archaeological remains is a material consideration when determining planning applications. As set out in PPS 5, there is a presumption in favour of preservation in-situ, where the remains are of national importance. While it is desirable to treat all remains in this manner, it is recognised that it may not always be practical to do so.

4.3.19 However, regardless of their status, established procedures of consultation



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and evaluation as set out in PPS 5 and other advice must be followed in preparing development proposals. Prospective developers should make an initial assessment of whether the site is known or likely to contain archaeological remains by consultation with the appropriate specialist bodies, normally English Heritage and the Greater London Archaeological Advisory Service. The Proposals Map identifies scheduled ancient monuments. The Archaeological Constraints map (Map 1) identifies areas with archaeological potential where sites of importance could exist, but not all sites of archaeological importance will necessarily be on the constraints map; developers should check the latest known information with English Heritage.

4.3.20 The Council wishes to endorse the spirit of the Code of Practice already established by The British Archaeologists and Developers Liaison Group and developers are also referred to advice published by English Heritage.

3.4 The Pagoda itself is a Grade 1 Listed Building and is therefore subject to the Council's policies regarding Listed Buildings and Scheduled Ancient Monuments:

#### **Policy DM HD 2**

##### **Conservation of Listed Buildings and Scheduled Ancient Monuments**

**The Council will require the preservation of Listed Buildings of special architectural or historic interest and Ancient Monuments and seek to ensure that they are kept in a good state of repair by the following means:**

- 1. consent would only be granted for the demolition of Grade II Listed Buildings in exceptional circumstances and for Grade II\* and Grade I Listed Buildings in wholly exceptional circumstances following a thorough assessment of their significance;**
- 2. retention of the original use for which the listed building was built is preferred. Other uses will only be considered where the change of use can be justified, and where it can be proven that the original use cannot be sustained;**
- 3. alterations and extensions including partial demolitions should be based on an accurate understanding of the significance of the asset including the structure, and respect the architectural character, historic fabric and detailing of the original building. With alterations, the Council will normally insist on the retention of the original structure, features, material and plan form or features that contribute to the significance of the asset. With repairs, the Council will expect retention and repair,**

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**rather than replacement of the structure, features, and materials of the building which contribute to its architectural and historic interest; and will require the use of appropriate traditional materials and techniques;**

- 4. using its legal powers to take steps to secure the repair of Listed Buildings, where appropriate;**
- 5. protecting the setting of Ancient Monuments and Listed Buildings where proposals could have an impact;**
- 6. taking a practical approach towards the alteration of Listed Buildings to comply with the Disability Discrimination Act 2005 and subsequent amendments, provided that the building's special interest is not harmed, using English Heritage advice as a basis.**

3.5 Since 2003 the Royal Botanic Gardens at Kew have been classed as a Unesco World Heritage Site:

**Policy DM HD 5**

**World Heritage Site**

**The Council will work with others, to protect, promote, interpret, sustainably use, conserve and where appropriate enhance the Royal Botanic Gardens Kew World Heritage Site and its setting including the buffer zone by conserving its Outstanding Universal Value, integrity, authenticity and significance. Development proposals should not cause adverse impact to the World Heritage Site or its setting that would compromise its Outstanding Universal Value, integrity, authenticity and significance, and give appropriate weight to the World Heritage Site Management Plan.**

4.3.21 The Royal Botanic Gardens Kew was inscribed on the UNESCO World Heritage Site List in 2003, in recognition of its outstanding and internationally significant universal value. In accordance with Planning Policy Statement 5: Planning for the Historic Environment (2010), the outstanding international importance of the World Heritage Site is a key material consideration to be taken into account by the Council when determining planning applications and listed building consents. The site should be protected for the benefit of future generations and development proposals affecting the site or its buffer zone will require careful scrutiny for their likely effect on the site or its setting.

4.3.22 The Royal Botanic Gardens, Kew World Heritage Site Management Plan (2003) and subsequent updates provides a framework for the activities that

take place in the site whilst ensuring that these activities do not conflict with the need to protect the qualities which make Kew Gardens such a special and unique place.

- 3.6 The Royal Botanic Gardens comprise Conservation Area 63, as designated by the London Borough of Richmond upon Thames.

## **4 GEOLOGY AND TOPOGRAPHY**

- 4.1 The Geological Survey of Great Britain (South London – Sheet 270) shows the site as lying upon Quaternary River Terrace 1. These gravels were most probably deposited during the Saalian or Wolstonian stadial between 380,000 and 130,000 BP. They are often capped by alluvial deposits along with Aolian or wind-blown sandy brickearths.
- 4.2 The Pagoda is situated within the south-eastern corner of Kew Gardens, a relatively flat parcel of land which is cradled in a wide meander of the River Thames. The area has been cultivated for almost 300 years as a botanical and ornamental garden, with the gardens themselves comprising paths, listed buildings, glasshouses and modern structures in the form of laboratories and amenities.

## 5 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

### Prehistoric

- 5.1 The early environment of the Thames Valley is well researched, principally due to the preservation of extensive undisturbed deposits. This has established that following 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. It was at this point that the first Palaeolithic hunters probably began to exploit the area, although evidence for the period is problematic. Many finds, which exclusively comprise stone tools, are often found as redeposited material, 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.
- 5.2 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 lived an itinerant lifestyle. This nomadic movement 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.
- 5.3 Along the Thames, the Neolithic period (7000 – 2500 BC) 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, although occupation is attested in Brentford and stone tools have been recovered at Kew Pond and from the river at Kew Bridge.
- 5.4 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, although 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.
- 5.5 The Iron Age (c.700 BC – 1st 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

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during evaluations to the north of the river, but otherwise the record is practically blank.

### **Roman**

- 5.6 Roman London is perhaps one of the best-known urban areas of the Roman Empire, yet even at a slight distance from the city walls the archaeological evidence diminishes. The heavy clays probably discouraged agriculture and large settlement, although 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 1st century, and roadside settlement in one form or another would be expected. Such settlement appears largely absent however. Even casual finds of scattered pottery or coins are not widely distributed across the western part of Greater London, suggesting a general paucity of activity.

### **Saxon**

- 5.7 When the region emerges into the historical record in the 7th century a series of large rural estates can be discerned, peppered with royal or ecclesiastical centres of some importance. These large villas often formed the basis for later expansion into towns and cities. The lands around Kew formed part of the great royal estate of Kingston, although archaeological finds in the vicinity have illuminated the earliest Saxon development in the area. A collection of 6th or 7th 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 19th 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.

### **Medieval**

- 5.8 From its earliest records, Kew or Cayho (from the Old English: a neck of land by a landing place – Weinreb *et al* 2008, 456) 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 14th century, reinforcing its primary agricultural, and peripheral nature. Field names in the area suggest the existence of heath and woodland, although a survey of the manor of Sheen taken in 1314 (PRO SC11/638)

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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 14th 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.

### **Post-medieval**

- 5.9 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.
- 5.10 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.
- 5.11 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.
- 5.12 The subsequent development of the gardens is attested as early as 1678 when John Evelyn mentioned both the orangerie and myrtetum whilst visiting Sir Henry Capel (Weinreb *et al* 2008, 711). It was however under Frederick, Prince of Wales, and his wife Augusta that the gardens really began to evolve. In 1731 Frederick leased the White House and the grounds from the Capel family, an area which forms the northern part of the present gardens. He introduced a pleasure garden to the grounds and following his death Augusta continued with further improvements. Under the guidance of Lord Bute and the head gardener, William Aiton, she created a botanic garden of 9 acres in 1759 (Weinreb *et al* 2008, 711). The successors of Frederick and Augusta ensured the continuing prosperity of Kew in the 18th 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

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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.

- 5.13 The western part of the gardens was attached to the now vanished Richmond Lodge, a residence of George II and the grounds had been laid out by his wife, Queen Caroline under the guidance of Charles Bridgeman. At around c. 1770 the grounds of the lodge were altered and improved by Lancelot 'Capability' Brown after the property had passed to George III. It was under George II that the Lodge grounds and gardens were united (Weinreb et al 2008, 711). The abandonment of Kew as a royal residence after 1818 resulted in a certain level of decline which, coupled with the rise of industrial blight in nearby Brentford, meant that the gardens were all but abandoned by the 1830's. In 1840 the gardens were handed over to the nation as a result of a Royal Commission which led to the establishment of the Royal Botanic Gardens (Prosser 2013, 9). The gardens were opened to the public in 1899 by Queen Victoria. The last quarter of the 19th 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. In 2003 the gardens were designated as a World Heritage site by UNESCO.

### **The Great Pagoda**

- 5.14 Based upon the Porcelain Pagoda at Nanking (Prosser 2013, 25), the Great Pagoda at Kew was designed by Sir William Chambers and was constructed within 6 months during the winter of 1761-1762 (Prosser 2013, 26). Construction of the building itself is likely to have been funded from the privy purse of Princess Augusta or of the King himself (Prosser 2013, 16) and according to Horace Walpole cost £12,000 (Prosser 2013, 26). Despite the importance of pagodas within Taoist and Buddhist theology, in Europe these structures came to represent the exotic nature of East Asia and were erected as ornamental buildings in the 'Chinoiserie' style. The Great Pagoda at Kew is no exception and was built as a folly; designed to amuse the eye, reflect the sophistication of royal patronage and to act as a prospect tower which afforded dramatic views from the top (Prosser 2013, 4).
- 5.15 The Pagoda is constructed of brick on an octagonal profile, rising through ten stories to a finial at a height of 163 feet (50m). It is punctuated at each level by glazed doors and timber balconies beneath roofs of grey slate. The brickwork is all by the noted bricklayer Solomon Brown, laid in a Flemish bond of yellow/pink fabric with fine Georgian struck jointing. The lowest roof is slightly swept at the eaves, and is supported by a colonnade of 24 slender columns. The Pagoda sits on a large plinth of

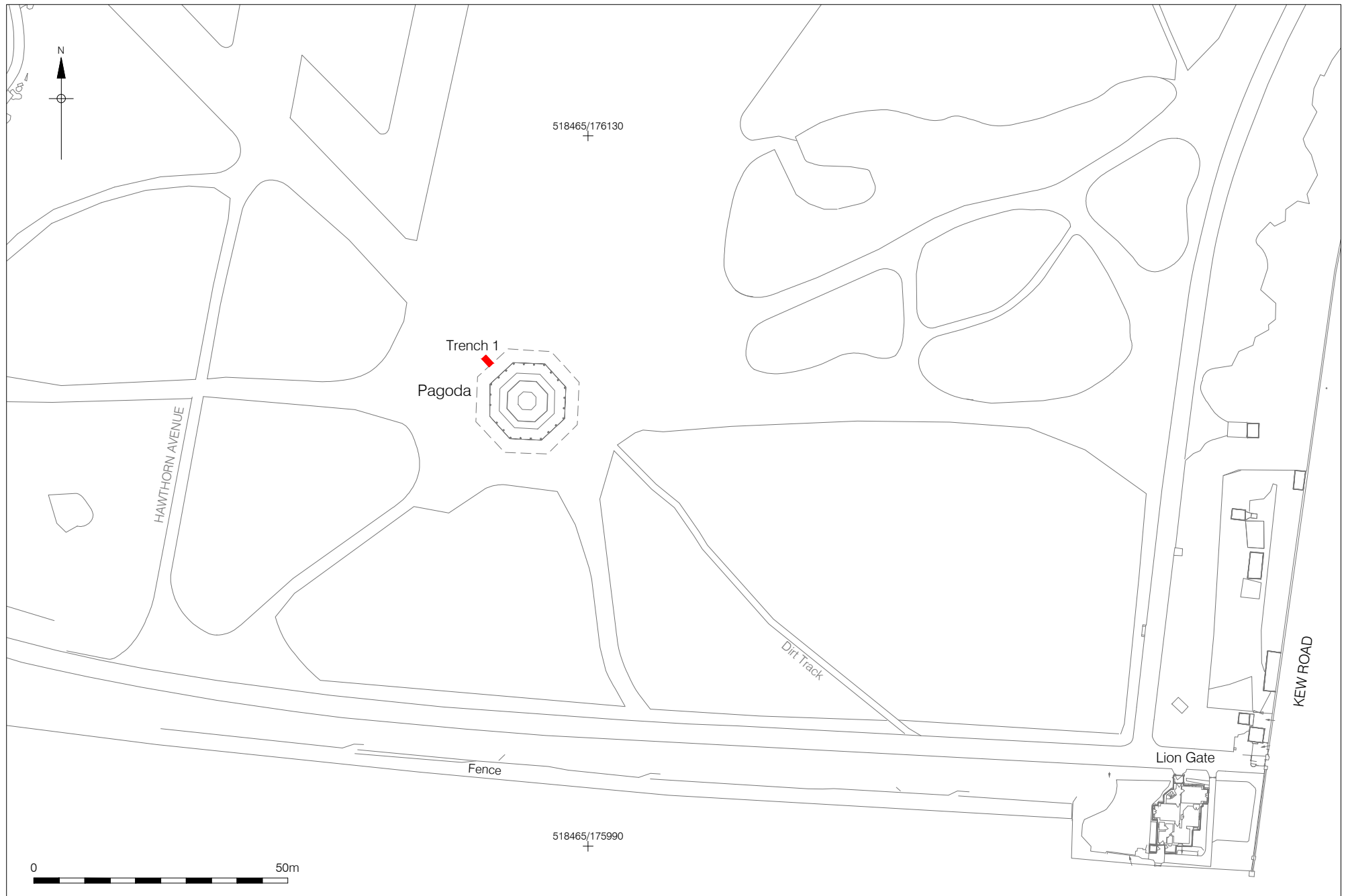


radiating Portland flags, and was once raised as a single step from the surrounding area (Prosser 2013, 11).

- 5.16 When first built, the Great Pagoda is believed to have been roofed with glazed or enamelled iron slates, with a total of 80 gilded or painted iridescent dragons individually positioned at the hips of each roof (Prosser 2013, 26). One of the earliest depictions in painting also suggests that balustrade was painted white. Change appears to have occurred quickly however, and in 1784 a coppersmith and tiler were employed to slate the roofs. It may have been during this episode of renovation that the dragons were removed (Prosser 2013, 26). Notably in February 1789 King George III, whilst suffering from his illness, attempted to ascend the Pagoda and had to be forcibly restrained by his attendants from doing so (Prosser 2013, 26).
- 5.17 Following the death of George III in 1820 the Pagoda, along with the rest of the estate was neglected. By the time the Royal Botanic Gardens were established in 1840 it was in desperate need of repair. The architect, Decimus Burton, who was working on the Palm House at the time, drew up a number of sketches and proposals, yet the estimated cost of £3,500 was deemed too dear. Some work was clearly undertaken however, as analysis of the paint suggests that it dates to this period and technical analysis implies that at least the lower two roof tiers were substantially reconstructed in the mid 19th century (Prosser 2013, 27).
- 5.18 The Pagoda was repainted in 1895 and the terminal pole was replaced in 1915. It was during this period that most of the existing red and vermilion colour schemes were first applied. During the Second World War permission was granted for the Royal Aircraft Establishment Armament Research Department to conduct model bomb dropping experiments. Holes were cut in each floor in order to facilitate the dropping of test bombs into a box of sand at the base of the tower. Research was completed in 1945 and the building was returned to the Royal Botanic Gardens. The building is believed to have again been repainted in 1953. In 1978 the Pagoda was again the subject of a restoration project but the plans did not proceed and a new coat of paint was deemed sufficient (Prosser 2013, 28). Although the building was accessible during 1960's and 1970's it has been largely closed since the 1980's. In 2006 it was briefly opened up to the public during the summer season but has not been so since (Prosser 2013, 13).

## **6 ARCHAEOLOGICAL METHODOLOGY**

- 6.1 In accordance with the Risk Assessment and Method Statement (Bradley 2016), a single evaluation trench measuring 1m x 2m was excavated in an attempt to identify a series of steps associated with the Great Pagoda. These steps are depicted on William Chambers' elevation of 1761. The trench was also excavated in order to determine the location, form, extent, date, character, condition, significance and quality of any surviving archaeological remains.
- 6.2 The trench was opened up by hand with the use of an electric hand held vibration dampened breaker fitted with a broad chisel. The breaker was used to remove the metallised gravel surface and underlying tarmac which sealed the evaluation trench. The trench was then hand excavated with the use of hand tools. Prior to breaking and excavation the evaluation trench was CAT scanned by a trained member of Pre-Construct Archaeology Ltd.
- 6.3 The trench was hand cleaned, examined and recorded in both plan and section.
- 6.4 The single context recording system was used for recording, developed out of the Department of Urban Archaeology Site Manual. Plans were recorded at a scale of 1:20, and sections were recorded at a scale of 1:10.
- 6.5 The trench was tied in to the Pagoda off architectural plans which were provided prior to the evaluation taking place. A Bench Mark with a value of 7.57m OD was located on the Pagoda itself and was used to level the evaluation trench.
- 6.6 Digital photographs were taken where relevant
- 6.7 No unusual health and safety issues were encountered during the evaluation. The steps for which the trench had been excavated were not identified, and once natural deposits had been reached excavation ceased. Following a request from Historic Royal Palaces the soft deposits and the broken hard standing were separated during the excavation process. When the site was vacated the trench was surrounded by sealed crowd barrier fencing panels with 'Danger, Deep Excavations' signs still in place.



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## 7 ARCHAEOLOGICAL PHASE DISCUSSION

### **Phase 1 - Natural**

- 7.1 Measuring 1m in width by 2m in length the evaluation trench was located on the outside of the Pagoda on the north-western side of the structure opposite a blind recess. The earliest deposit encountered at the base of the trench was the natural gravel and sand [23]. This was observed at a highest level of 6.36m OD.

### **Phase 2 – Historic Soil (18th century)**

- 7.2 Sealing [23] was [22], a soft deposit of mid orange yellow brown silty sand which contained occasional small sub angular and sub rounded pebbles along with occasional brick fragments and iron nails. This deposit extended up to 0.62m in thickness at 6.98m OD.

### **Phase 3 – Garden Feature**

- 7.3 Cutting into [22] along the western edge of the trench was garden feature [21]. This cut extended into the western and northern limits of excavation, but as far as could be determined it was rectilinear to oval in plan with steeply sloping sides and a concave base. As seen it measured 1.5m in length and 0.56m in width and extended up to 0.32m in depth at 6.98m OD. It was filled with [20], a soft to loose deposit of mid orange brown clay sand silt which contained occasional fragments of brick and slate.

### **Phase 4 – Late 18th to Early 19th century**

- 7.4 Abutting the brick Pagoda base at the southern end of the trench was [19], a large stone block which measured 0.33m by 0.42m and 0.22m in depth at 7.12m OD. The precise function of this piece of masonry was unclear. It was badly weathered and appeared to have been dumped. It was sealed by [18], a soft to friable deposit of mid to dark grey brown silty sand which was 0.12m thick at 7.12m OD. Interpreted as a former topsoil deposit, this layer also overlay garden feature [21].
- 7.5 Sealing [18] was [17], a well compacted deposit of mid brown pink sandy gravel which was up to 0.10m thick at 7.22m OD. This deposit is likely to represent a former surface around the Pagoda and may correlate with George Scharf's sketch of the structure which dates to 1820.



Plate 1 – Garden Feature [21] & stone [19]

### **Phase 5 - Modern**

- 7.6 Sealing [17] was a modern make up deposit of yellow sand and gravel [+] which was 0.09m thick at 7.31m OD. This was in turn sealed by modern tarmac [+] which was 0.03m thick at 7.34m OD. The modern resin-bonded gravel sealed the trench at 7.36m OD.

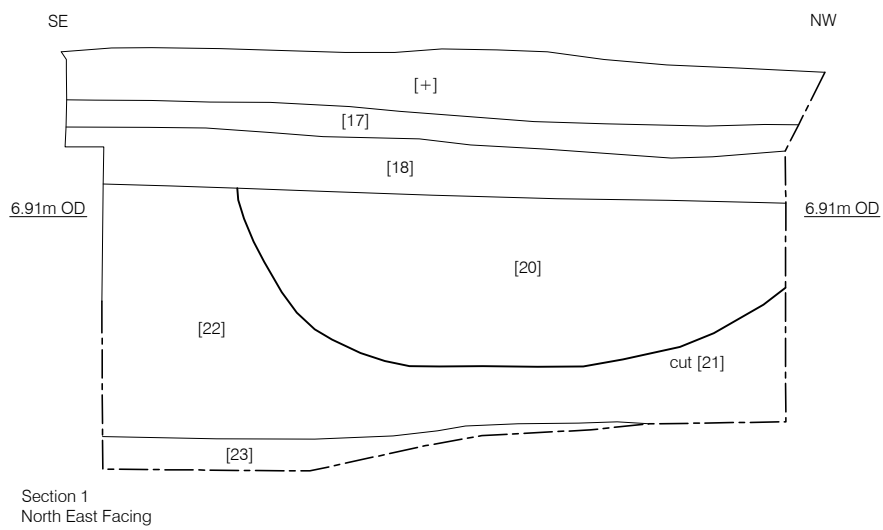
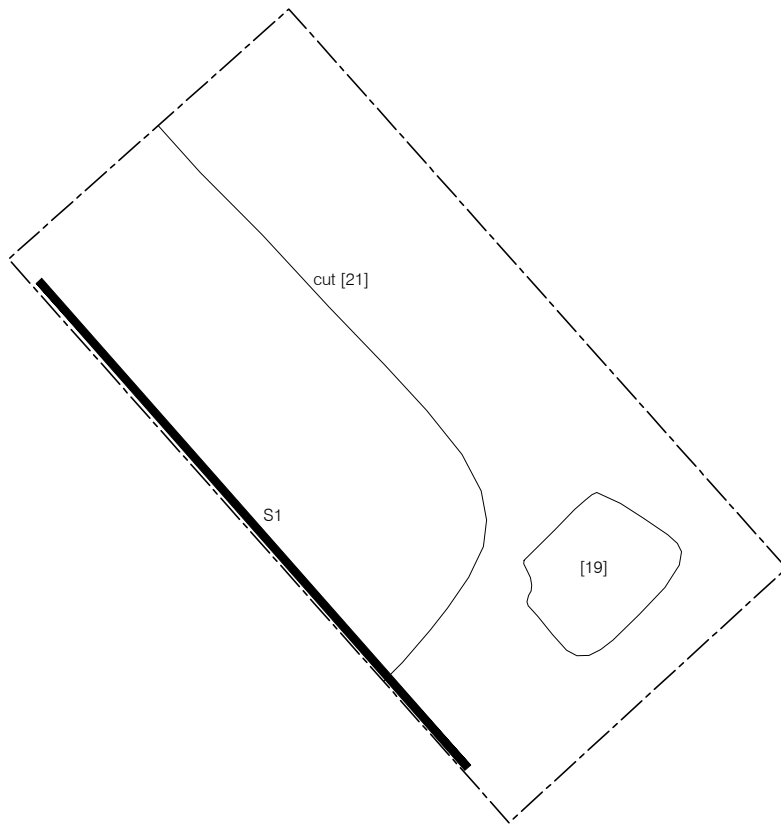


Figure 3  
Trench Plan and Section  
1:20 at A4

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## 8 INTERPRETATION AND CONCLUSIONS

- 8.1 One of the principal objectives of the archaeological evaluation was to determine whether or not the steps depicted on William Chambers' elevation of c. 1761 as descending from four sides of the pagoda base were still extant. These steps were not identified during the evaluation, which had been specifically positioned in front of one of the blind recesses. The location of the trench was chosen following previous excavations located in front of the Pagoda doorways which had also failed to identify these steps (as reported in Haslam 2014 and Haslam 2015). This evidence suggests that the steps had either been removed when the ground level was raised up, or that they simply never existed. If the latter interpretation is correct then the steps represent features on Chambers' design plan which were never introduced.
- 8.2 Further objectives of the evaluation were to determine the presence or absence of archaeological activity of any period. The earliest deposit encountered during the evaluation was the natural horizon of sands and gravels. This was sealed by a dirty sand deposit [22] which appeared, to all intents and purposes, to have been laid down in the form of redeposited natural. Given the limited size of the trench, identifying the precise origin of this context is problematic, yet it abutted the brick foundation of the Pagoda which extended up to a maximum of 0.41m in depth at 7.11m OD. With no construction cut observed in the evaluation trench this either meant that the foundation was cut flush against [22], or that [22] itself was the backfill of a far larger construction cut which extended beyond the trench limits to the south.
- 8.3 The latter interpretation in regard to [22] appeared to be discredited by the presence of the garden feature [21]. This cut is likely to have predated the erection of the Pagoda.
- 8.4 The function of the dumped stone [19] remains somewhat ambiguous. It was in poor condition and badly abraded suggesting that it had been backfilled and was not structurally associated with the Pagoda. This may have occurred during the construction process.
- 8.5 The layer of buried topsoil [18] is likely to have related to the original ground level surrounding the Pagoda. The mid brown pink sandy gravel represented a path or surface deposit and may well be contemporary with George Scharf's sketch of the structure which dates to 1820 and depicts the Pagoda base as slightly elevated above the contemporary ground surface.
- 8.6 The make up for the tarmac, the tarmac surface and the modern resin bonded gravel surface can be associated with late 20th century repairs and modifications to the upstanding structure.

## **9 ACKNOWLEDGEMENTS**

- 9.1 Pre-Construct Archaeology would like to thank Historic Royal Palaces for commissioning the work. Particular thanks are extended to Patricia Les, Head of Building Conservation – Historic Royal Palaces, Lee Prosser, Buildings Curator – Historic Royal Palaces and to Rob Umney, Conservation Building Surveyor - Historic Royal Palaces.
- 9.2 The author would like to thank Stacey Harris for all of her assistance on site. Thanks also to Charlotte Faiers for the illustrations, Tim Bradley for his project management and editing and Wayne Richards, Bruce Ferguson and John Joyce for technical and logistical support.



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## APPENDIX 1 – CONTEXT DESCRIPTIONS

Context	Phase	Type	Trench No.	Sec. No.	Description
17	4	Layer	Eval	1	Sandy gravel surface
18	4	Layer	Eval	1	Buried topsoil
19	4	Masonry	Eval	-	Dumped stone
20	3	Fill	Eval	1	Fill of [21]
21	3	Cut	Eval	1	Garden Feature
22	2	Layer	Eval	1	Subsoil
23	1	Natural	Eval	1	Natural

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## APPENDIX 2 – OASIS FORM

OASIS ID: preconst1-261811

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### Project details

Project name	The Great Pagoda (Phase III), Royal Botanic Gardens, Kew
Short description of the project	Pre-Construct Archaeology undertook an archaeological evaluation at the Great Pagoda, Kew. This comprised a single evaluation trench located outside the structure on the north-western side opposite one of the blind recesses. The trench was excavated in an attempt to find steps present on an elevation dating to 1761. Unfortunately the steps were not revealed. The archaeological sequence comprised natural sands and gravels sealed by a deposit of 18th century garden soil. This was cut by a garden feature and overlain by a stone block. A former topsoil surface sealed both the stone and garden feature and was in turn overlain by a gravel path. Modern make up, and tarmac sealed this path. Above the tarmac was the current gravel surface.
Project dates	Start: 30-08-2016 End: 02-09-2016
Previous/future work	Yes / Yes
Any associated project reference codes	KEW05 - Sitecode
Any associated project reference codes	KEWP14 - Sitecode
Type of project	Field evaluation
Site status	World Heritage Site
Current Land use	Other 5 - Garden
Monument type	PAGODA Post Medieval
Significant Finds	NAILS Post Medieval

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Significant Finds	CLAY TOBACCO PIPE Post Medieval
Significant Finds	POTTERY Post Medieval
Significant Finds	CBM Post Medieval
Significant Finds	ANIMAL BONE Post Medieval
Methods & techniques	"Targeted Trenches"
Development type	Estate management (i.e. maintenance of existing structures and landscape by capital works and on-going maintenance)
Prompt	Scheduled Monument Consent

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#### Project location

Country	England
Site location	GREATER LONDON RICHMOND UPON THAMES RICHMOND AND KEW The Grt Pagoda, Kew (Phase III)
Postcode	TW9 3AB
Study area	4 Square metres
Site coordinates	TQ 18471 76076 51.470733847363 -0.294109884531 51 28 14 N 000 17 38 W Point
Height OD / Depth	Min: 6.26m Max: 6.36m

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#### Project creators

Name of Organisation	Pre-Construct Archaeology Ltd.
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Project originator	brief	Historic Royal Palaces
Project originator	design	Tim Bradley
Project director/manager		Tim Bradley
Project supervisor		Alexis Haslam
Type of sponsor/funding body		Royal Botanic Gardens / Historic Royal Palaces

**Project archives**

Physical Archive recipient		Historic Royal Palaces
Physical Contents		"Animal Bones", "Ceramics", "Metal"
Digital Archive recipient		Historic Royal Palaces
Digital Contents		"Animal Bones", "Ceramics", "Stratigraphic"
Paper Archive recipient		Historic Royal Palaces
Paper Contents		"Animal Bones", "Ceramics", "Metal", "Stratigraphic"
Paper Media available		"Context sheet", "Diary", "Photograph", "Plan", "Report", "Section", "Unpublished Text"

**Project bibliography 1**

Grey literature (unpublished document/manuscript)

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Publication type

Title An Archaeological Evaluation at The Great Pagoda (Phase III), Royal Botanic Gardens, Kew, London Borough of Richmond Upon Thames, TW9 3AB

Author(s)/Editor(s) Haslam, A.

Date 2016

Issuer or publisher Pre-Construct Archaeology Ltd.

Place of issue or publication Brockley

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Entered on 6 September 2016

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