

# Park Street Multi-storey Car Park, Cambridge

Archaeological Monitoring and Recording



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**Iona Robinson**

With contributions by Lawrence Billington, Craig Cessford and Vida Rajkovača

Illustrations by Bryan Crossan

**UNIVERSITY OF CAMBRIDGE**

Cambridge Archaeological Unit

May 2014

Report No. 1242

Event Number: ECB4029

## **Summary**

*Archaeological monitoring of six geotechnical boreholes was undertaken at the Park Street Multi-storey Car Park, Cambridge. Monitoring revealed that within the area of the car park's ground floor level archaeological strata survived beneath the building's foundations. An archaeological sequence between 1.8 and 2.5m in depth was recorded. Beneath a substantial modern levelling deposit, a horizon of Late Medieval/Post-Medieval garden soil was identified, as well as strata which may represent the fills of archaeological features and Late Medieval land reclamation. No surviving archaeological deposits were observed during the monitoring of boreholes within the area of the car park's lower, basement level.*

## **1 Introduction**

This report details the archaeological monitoring of the hand digging and machine drilling of six exploratory boreholes on the upper and lower levels of the ground floor of the Park Street Multi-storey Car Park, Cambridge (TL 4489 5890; Figures 1 and 2). This work was undertaken in order to identify the presence, and assess the scope, of archaeological remains within the proposed development area (PDA). This work was undertaken by the Cambridge Archaeological Unit (CAU) on behalf of Cambridge City Council between the 12<sup>th</sup> of August and the 5<sup>th</sup> of September 2013.

Archaeological monitoring was carried out in accordance with the Written Scheme of Investigation set out by the CAU (Dickens 2013), in response to a brief produced by Andy Thomas of the Cambridgeshire Historic Environment Team (Thomas 2013).

### **1.1 Topography and Geology**

The Park Street Multi-storey Car Park is located on the eastern edge of the historic city centre of Cambridge. The PDA lies on low-lying land to the east and south of the modern course of the River Cam. The surface height of the upper level of the ground floor of the car park is between 7.0 and 7.3m OD, while the height of the lower level is just over one metre deeper, with surface heights between 5.8 and 6.1m OD.

The PDA is situated on 1<sup>st</sup> Terrace river gravels (British Geological Survey 1976), which were deposited by extensive glacial outwash. Recent archaeological investigations in this area of the floodplain of the River Cam, to the north and west of the PDA, have revealed evidence of a relict braided river-system with which can be associated alluvial overflow deposits and episodes of peat formation, as well as relict channels proper and low ridges of surviving 1<sup>st</sup> Terrace gravels (Pollard 1995; Davenport et al. 2008; Newman 2008a, 2013a, 2013b). The gravels are underlain by Gault Clay.

### **1.2 Archaeological and historical background**

Evidence of prehistoric activity in the vicinity of the PDA is extremely limited. Excavations in the immediate area have either produced residual worked flints only, and these in very small numbers (e.g. Zone 6, Jesus Green (Davenport et al. 2008) or St John's College Corfield Court, Divinity and Pythagoras sites (Newman 2008b; 2013b; Cessford 2012)), or no prehistoric finds at all (Newman 2008a). This sparse evidence of infrequent activity accords with the palaeo-environmental record revealed at these sites, which points to a damp landscape subject to episodes of flooding associated with slow-moving broad river channels (Pollard 1995; Davenport et al. 2008; Newman 2008a; 2013a; 2013b). The only exception to this pattern is the evidence of Middle/late Iron Age ditches, perhaps constituting an enclosure, found at Jesus Close to the northwest of the PDA (Williams & Evans 2004), which suggest the beginnings of agricultural land-use in the area.

By the Roman period, the environmental evidence indicates that the floodplain in the area of the PDA had become drier (Newman 2008a, 9–10). As such, it was an increasingly suitable locus for sustained activity and, while the high ground of Castle Hill to the northwest was the focus the Roman town proper (Alexander & Pullinger 2000), there is also extensive evidence of extramural settlement,

cemeteries, industry and agriculture in the surrounding countryside during the Roman period, including on the floodplain below Castle Hill on either side of the *Via Devana* (the Cambridge to Godmanchester road). Indeed, the area immediately around Park Street appears to have seen quite intense activity at this time (Figure 1). Repeated observations of Roman finds were made during building in the area in the 19<sup>th</sup> and 20<sup>th</sup> century. Digging of a sewage shaft on Park Street in 1848 (Babington 1883), just a few metres to the southeast of the PDA produced Roman pottery, while large quantities of Roman pottery and bone were also observed during the construction of the Union Building at the end of the 19<sup>th</sup> century, less than 50m to the south of the PDA (Hughes 1898, 375; 1907, 410). Further Roman material was encountered in the 1970s in the area of the Round Church, adjacent to the Union Building (Lobel 1975, 3). Pottery wasters with a probable 3<sup>rd</sup> century date, indicative of pottery production in that vicinity, were discovered at the crossroads of Park Street and Jesus Lane, c.100m southeast of the PDA (Hughes 1903; Hartley 1960). Recent excavations on Park Street have corroborated the evidence of Roman activity provided by these antiquarian and observational records. An evaluation at the ADC theatre on Park Street revealed a substantial ditch of 2<sup>nd</sup> to 3<sup>rd</sup> century date (Whittaker 2002, 3–6), while excavations at 11 Park Street, directly opposite the PDA, uncovered two further ditches of the same date (cf. 2<sup>nd</sup>–3<sup>rd</sup> century property boundaries at Corfield Court (Newman 2008b)), as well as a group of 3<sup>rd</sup>–4<sup>th</sup> century burials (Alexander et al. 2004, 91). Contemporary Roman burials at 35–37 Jesus Lane may indicate that these burials were part of a more extensive cemetery (Alexander et al. 2004, 67–8). Although the evidence for settlement in the Park Street area is somewhat piecemeal, cumulatively there is clear indication of Roman property boundaries and industry from the 2<sup>nd</sup> century, as well as the later mortuary activity.

After the Roman period, activity in the Park Street area appears to have ceased, with almost no Early or Middle Saxon finds recovered, the foci of dispersed occupation in this period having moved to other parts of the immediate and wider landscape (Newman 2013a, 6–7). In the 10<sup>th</sup> and 11<sup>th</sup> century, Cambridge began to grow as a centre of river trade. Excavations at St John's Divinity School and Corfield Court to the southwest of the PDA uncovered evidence of occupation in this period (Newman 2008b; Cessford 2012), but there is no indication that this Late Saxon settlement spread as far as the Park Street area, which may well have continued to be uninhabited (Newman 2013a, 7). In 1133, a Benedictine nunnery (St Mary and St Radegund) was founded on land to the east and the western extent of this foundation's boundary ditch (the Jesus Ditch (Figure 1)), reached as far as the Park Street area (Newman 2013a, fig. 2). Modern Park Street is believed to closely follow the alignment of this boundary, thus the PDA either directly adjoins, or even partially overlaps, the line of this substantial ditch. In the 12<sup>th</sup> century, the centre of medieval Cambridge was enclosed by a boundary ditch, known as the King's Ditch. This boundary incorporated the short western (Park Street) stretch of the Jesus Ditch, as part of a wider arc that swung northwest to meet the river (Newman 2013a). A small section of a substantial medieval feature, interpreted as possibly part of the King's Ditch boundary work, was excavated at the junction of Portugal Place and New Park Street in the 1990s (Regan 1997). While the course of the King's Ditch to the north, appears to have been altered over time (Newman 2013a, fig. 2), the Park Street stretch is thought to have remained a consistent boundary throughout the Late Medieval and Post-Medieval period, until the construction of Park Street in the 19<sup>th</sup> century.

Although the location of the PDA was enclosed within the King's Ditch, the area did not become a site of sustained urban development. To the north and northwest the southern bank of the river saw gradual development associated with river trade (Davenport et al. 2008; Newman 2013a, 8), while evidence of much more rapid development was encountered to the southwest at the Divinity School and Corfield Court excavations, which fell within the urban core of the medieval city. However, it

appears that the area covered in the PDA remained peripheral to these developments with a lack of building construction, although land improvements on the old floodplain were ongoing. Excavation at 5 Thompson's Lane, c. 50m to the west of the PDA uncovered a substantial layer of made ground containing 12<sup>th</sup> to 14<sup>th</sup> century potsherds (Baker & Kenny 2004). Cartographic evidence suggests that the PDA may have been orchards or gardens with some small associated structures from the 16<sup>th</sup> century, abutting the orchards and later formal gardens on the site of St Clements Gardens (Figure 3a; see also Newman 2013a). In the 19<sup>th</sup> century the area was transformed with the construction of Park Street and its associated terraced dwellings and premises (Figure 3b and 3c). Within the area of the PDA, these buildings were demolished prior to the construction of the multi-storey car park in 1962–3.

## **2 Research aims**

Given the pre-construction excavation and levelling which would have taken place during the construction of the car park, the aim of the archaeological monitoring was to establish the extent to which archaeological features and/or broader archaeological strata, such as soils, might survive beneath the car park foundations. On the identification of archaeological features/layers, the object was to determine the character of the deposit, as seen within the narrow window of the boreholes and to retrieve any material culture present within the deposits with a view to assessing the level of preservation of remains and to ascribing a date, where possible. Further to this, should archaeological remains be identified, the aim was to place these findings within their regional context and to approach their interpretation by relation to national research questions.

## **3 Methodology**

The digging of each geotechnical borehole took place in two phases: I) the excavation of a hand-dug 'launch pit' and additional guide hole for the installation of the boring rig (see Figure 5); II) machine boring to retrieve soil samples using a percussive hammer technique.

- I) The hand-digging of the 'launch pit' of each borehole was monitored. Each launch pit incorporated an approximately 0.75m by 0.8m wide and 0.5–0.8m deep pit, with a 0.35–0.4m diameter 'guide-hole' in its base, in which the depth of hand-digging was extended to between 1.3 and 1.75m below the ground surface. The character of each deposit encountered during the hand excavation of both pit and guide-hole was investigated and the spoil was separated by context and surveyed for finds. Log sheets were used to record the depths and description of each context using the CAU's modified version of the MoLAS recording system (Spence 1994), with each sub-car park foundation context being ascribed a context number (e.g. **[001]**). A photographic record, comprised of digital images of each launch pit at the culmination of the hand-dug phase, was also made.
- II) The machine boring of each borehole was monitored to a depth where the presence of natural geology was established. Further coring of the deep geological deposits was not observed. The process of using the boring rig (0.12m bore) to obtain soil samples for subsequent laboratory analysis also produced, as a by-product, small amounts of spoil, brought up in approximately 0.2m spits. As above, the sedimentological characteristics of this spoil were described and any material culture identified was retained. Although the

removal of spoil in spits made for rather crude measurements when defining contextual boundaries, stratigraphic changes in the composition of the sediment were identified and their depths measured with as great an accuracy as was possible. The potential to describe the composition of sediment retrieved during the machine boring process was further affected by the height of the water table, which in combination with the admixture caused by the hammering action of the drill, resulted in some of the lower samples being retrieved in a state of partial suspension. In these circumstances, an effort was made to find a small intact block of unaffected sediment within the greater sample from which the soil composition could be ascertained.

All work was carried out in strict accordance with statutory Health and Safety legislation and within the recommendations of FAME (Allen & Holt 2010).

## **4 Results**

The results of the archaeological monitoring of Boreholes 1–6 are presented below. Information on the material culture within deposits is included within the tables. Spot dating of the pottery was provided by David Hall. These tables are supplemented by Figures 2, which shows the borehole locations and Figure 4, which depicts the six borehole profiles together for comparison.

A brief summary of the faunal remains, as an indicator of their quantity and level of preservation, is also presented below, with additional comment on the worked bone.

BOREHOLE 1		Surface height 7.18m OD		
Methodology	Depth	Deposit		Material Culture
Hand-dug test pit (0.77 x 0.79m) to a depth of 0.54m	0.0–0.22m	Car park floor/ foundations	Concrete	
	0.22–0.34m		Hardcore	
Hand-dug bore guide-hole (0.32 x 0.39m) to a depth of 1.59m	0.34–0.72m	Modern made ground	<b>[002]</b> Dark, slightly greenish-grey silty-clay flecked with white mortar pieces, frequent small gravels and occasional pieces of clunch. Compacted.	Pottery (19 <sup>th</sup> century industrial refined whiteware), animal bone, oyster shells, ceramic building material (CBM)
	0.72–1.16m		<b>[006]</b> Pale to mid grey clayey silt with frequent soft white clunch and mortar pieces and occasional small gravels. Compacted.	
	1.16–1.37m		<b>[003]</b> Mid greyish-brown slightly clayey sand-silt of loose compaction with occasional small gravels. Soil-like.	
	1.37–c.1.8m		<b>[004]</b> Dark blackish-brown slightly clayey sandy-silt of loose compaction with occasional small gravels. Soil-like.	Animal bone
	c.1.8–c.2.1m		<b>[005]</b> Mid grey-brown sandy-silt with frequent small and medium-sized gravels	Worked clay/pottery
Machine drilled (0.12m diameter bore). Spoil observed in c. 0.2m spits to a depth of c.2.3m	c.2.1m+		Small and medium gravels in a yellow-grey slightly clayey, sandy matrix. Natural.	
Summary:	Below the car park foundations and two modern made-ground deposits, three archaeological layers were present. The upper two layers had characteristics suggestive of garden soils, although they could also represent horizontal strata in a wider archaeological feature. The lowest layer appeared to be a mixture of redeposited natural gravels with simultaneous silt accumulation and may represent the fill of an archaeological feature. Natural gravels were observed from a depth of c. 2.1–2.3m.			



BOREHOLE 2			Surface height 7.21m OD	
Methodology	Depth	Deposit		Material Culture
Hand-dug test pit (0.74 x 0.85m) to a depth of 0.48m	0.0–0.18m	Car park floor/ foundations	Concrete	
	0.18–0.29m		Hardcore	
	0.29–0.48m	Modern made ground	[007] Dark grey-black clay-sand-silt with edge of possible <i>in situ</i> late 19 <sup>th</sup> /20 <sup>th</sup> century brick wall. Very compacted.	CBM fragments
Hand-dug bore guide-hole (0.35 x 0.39m) to a depth of 1.74m	0.48–0.74m		[008] Concrete floor with adjacent deposit of dark greyish-black clay-sand-silt flecked with white mortar/clunch fragments. Very compacted.	Pottery (16 <sup>th</sup> /17 <sup>th</sup> century slip trailed glazed red earthenware, rim), tobacco pipe, CBM fragments
	0.74–1.15m		[009] Very dark brown-black clay-sand-silt with occasional gravels. Quite compacted.	CBM fragments
	1.15–1.55m		[010] Dark grey-brown clay-sand-silt with occasional small gravels and oyster shell fragments. Soil-like.	CBM fragments
	1.55–1.68m		[011] Slightly yellowish brown-grey sandy-silt with frequent gravels	
Machine drilled (0.12m diameter bore). Spoil observed in <i>c.</i> 0.2m spits to a depth of <i>c.</i> 2.4m	1.68– <i>c.</i> 2.0m	[012] Mid orange clayey-sand with occasional small gravels.	Worked flint	
	<i>c.</i> 2.0– <i>c.</i> 2.2m	[013] Pale to mid brown clayey-sand with frequent pea grit, small gravels and white chalky flecks. May be natural.		
	<i>c.</i> 2.2m+	Small and medium gravels in a yellow-brown sandy-clay matrix. Natural.		
Summary:	Below the car park foundations and a series of three modern levelling deposits incorporated around the remains of a demolished late 19 <sup>th</sup> /20 <sup>th</sup> century building, an intermixed made-ground/archaeological layer may represent an earlier phase of levelling. Underlying this were two gravelly sand-silt layers, which may be fills of a larger feature and, below them, a further gravelly-clayey deposit which may represent a primary fill of the feature or the uppermost horizon of the river-terrace gravels. Natural gravels were observed from a depth of <i>c.</i> 2.2–2.4m.			

BOREHOLE 3		Surface height 5.97m OD		
Methodology	Depth	Deposit		Material Culture
Hand-dug test pit (0.8 x 0.8m) to a depth of 0.8m	0.0–0.2m	Car park floor/ foundations	Concrete	
	0.2–0.36m		Hardcore	
	0.36–0.8m	Modern made ground	[001] Dark, slightly brownish-grey sandy-silt with frequent gravels. Very compacted.	Animal bone
Hand-dug bore guide-hole (0.36 x 0.37m) to a depth of 1.3m	0.8m+	Small and medium gravels in a coarse yellow-orange sandy-silt matrix. Natural.		
Summary:	A single layer of modern made ground was identified below the car park foundations. This layer appeared to be a levelling deposit, laid directly onto the (truncated?) natural gravels prior to construction of the car park building. Natural gravels were observed from a depth of 0.8–1.3m.			

BOREHOLE 4		Surface height 5.97m OD		
Methodology	Depth	Deposit		Material Culture
Hand-dug test pit (0.7 x 0.93m) to a depth of 0.82m	0.0–0.26m	Car park floor/ foundations	Concrete	
	0.26–0.55m		Orange sand and gravel	
	0.55–0.82m		Layer of grey sand, gravel and soft thin layers of grey mortar/clayey material	
0.82m+		Small and medium gravels in a coarse yellow-orange sandy-silt matrix. Natural.		
Summary:	The concrete car park floor and its two underlying foundation layers of builder’s sand and gravels directly overlaid the (truncated?) natural gravels. Natural gravels were observed from a depth of 0.82–1.49m.			

BOREHOLE 5			Surface height 7.15m OD	
Methodology	Depth	Deposit		Material Culture
Hand-dug test pit (0.75 x 1.1m) to a depth of 0.63m	0.0–0.22m	Car park floor/ foundations	Concrete	
	0.22–0.27m		Hardcore	
	0.27–0.55m	Modern made ground	[014] Dark grey sandy-silt with frequent gravels and demolition rubble. Very compacted.	CBM fragments
	0.55–0.77m		[015] Dark grey sandy-silt with frequent white mortar flecks and occasional small gravels. Very compacted. <i>In situ</i> cast iron pipe with a clay surrounding fill at a depth of <i>c.</i> 0.63m.	Animal bone, tobacco pipe
Hand-dug bore guide-hole (0.35 x 0.35m) to a depth of 1.69m	0.77–1.55m	[016] Dark slightly brownish grey-black sandy-silt with occasional small gravels and oyster shell fragments. Soil-like.		Pottery (16 <sup>th</sup> /17 <sup>th</sup> century plain red coarseware), animal bone, worked bone, oyster shell
	1.55–1.75m	[017] Mid to dark brown sandy-silt with frequent small and medium gravels. Moderately compacted, soil-like.		Animal bone
	Machine drilled (0.12m diameter bore). Spoil observed in <i>c.</i> 0.2m spits to a depth of 3.4m	1.75– <i>c.</i> 2.1m	[018] Mid brown sandy-silt with frequent of mid greenish-brown (cessy?) sandy-silt patches and occasional small gravels. Moderately compacted.	
<i>c.</i> 2.1– <i>c.</i> 2.3m		[019] Proto peat. Mid to dark brown organic silt with occasional white, coarse sand grains visible.		
<i>c.</i> 2.3– <i>c.</i> 2.7m		[020] Pale brownish-grey clayey silt with small mid-orange sandy patches and occasional small and medium gravels.		
<i>c.</i> 2.7– <i>c.</i> 3.1m		[021] Proto peat. Mid to dark brown organic silt with occasional white, coarse sand grains visible.		
<i>c.</i> 3.1m+		Yellow orange gravels in coarse-grained sandy-silt. Natural.		
Summary:	Below the car park foundations and two layers of modern made-ground, incorporating an <i>in situ</i> cast iron pipe, an earlier, intermixed made-ground/archaeological layer was present. Beneath this were two archaeological layers (the lower with a cessy component) which may represent the fills of a feature. Underlying these layers there was over a metre of deposits relating to alluvial action and peat formation in swampy, waterlogged conditions. A thin ‘proto’ peat, rich with organics, overlaid a very mixed clayey silt and sandy deposit suggestive of a reasonably high energy alluvial episode. This in turn overlaid a thicker peat layer. Natural gravels were observed from a depth of <i>c.</i> 3.1–3.4m.			

BOREHOLE 6			Surface height 7.20m OD	
Methodology	Depth	Deposit		Material Culture
Hand-dug test pit (0.75 x 96m) to a depth of 0.57m	0.0–0.22m	Car park floor/ foundations	Concrete	CBM fragments
	0.22–0.48m		Hardcore	
	0.48–0.87m	Modern made ground	[022] Dark grey-black clay- sand-silt with frequent small and medium gravels and frequent white mortar flecks. Very compacted.	
Hand-dug bore guide-hole (0.38 x 0.40m) to a depth of 1.54m	0.87–1.11m	[023] Dark brownish-grey clay-sand-silt with occasional small gravels and oyster shell fragments. Moderately compacted. Quite soil-like.		Pottery (15 <sup>th</sup> century greyware), animal bone, oyster shell
	1.11–1.39m	[024] Dark brownish-grey clay-sand-silt with rare small gravels. Moderately compacted. Soil-like.		
	1.39–c.1.6m	[025] Dark brownish-black clay-sand-silt with frequent gravels and white chalk/clunch/mortar flecks. Very compacted.		Animal bone, oyster shell, tile, CBM fragments
Machine drilled (0.12m diameter bore). Spoil observed in c. 0.2m spits to a depth of 4.1m	c.1.6–c.2.4m	[026] Greenish-grey, slightly sandy clayey-silt with occasional tiny white chalk/clunch/mortar pieces. Very compacted.		Pottery (Roman Samian ware; 18 <sup>th</sup> century green glazed stoneware), animal bone
	c.2.4–c.3.0m	[027] Slightly greenish, grey-brown sandy-silt with occasional gravels. Very compacted.		Pottery (15 <sup>th</sup> century greyware; 16 <sup>th</sup> century greyware; 16 <sup>th</sup> century pinkware)
	c.3.0–c.3.1m	[028] Pale to mid yellowish-brown clayey silt with very small white chalky flecks.		
	c.3.1–c.3.3m	[029] Mid greyish-brown clayey silt with black organic material in horizontal bands. An alluvial (palaeochannel?) deposit.		
	c.3.3–c.3.5m	[030] Dark greyish-brown sandy-silt with lenses of small gravels and occasional black organic material.		
	c.3.5m+	Mottled yellow-grey and orange clayey sandy-silt with quite frequent small, medium and large gravels. Natural.		
Summary:	Below the car park foundations and modern made-ground, a further two layers which may represent earlier levelling or horizontal strata of ‘garden soil’ were present. Beneath these layers, a series of three very compacted and material culture-rich layers suggest the presence of an archaeological feature or an earlier episode of concerted ground consolidation/improvement. Underlying these layers were a series of three strata which may have related to alluvial action. The uppermost, a clayey silt, may be an alluvial layer or the base of sediment of the overlying consolidation deposits. The mid layer is a banded organic-rich alluvially-derived deposit with the appearance of a palaeochannel sediment laid down in very slow moving conditions. Beneath this, a slightly thicker alluvial deposit combined lenses of small gravels, indicating slightly higher energy water flow, with occasional organics. Natural gravels were observed from a depth of c.3.5–4.1m.			

### *Faunal remains* (Vida Rajkovača)

Investigations at Park Street Multi-storey Car Park resulted in the recovery of an assemblage totalling 21 assessable specimens and weighing 353g. The preservation of the bone is quite good with minimal surface weathering or surface exfoliation. Two main food species were identified, cow and sheep/goat, as well as mallard. Butchery was recorded on five specimens and actions identified include disarticulation and meat and marrow removal. One cattle-sized rib was cut to pot size. Sawing was also recorded on a sheep/goat tibia from Borehole 1; the location of the mark suggesting a saw was used in gross disarticulation.

<b>Taxon</b>	BH1	BH3	BH5	BH6	<b>Total NISP</b>
Cow	2	.	1	.	3
Sheep/ goat	3	1	3	.	7
Mallard	.	.	1	.	1
<b>Sub-total to species</b>	<b>5</b>	<b>1</b>	<b>5</b>	<b>.</b>	<b>11</b>
Cattle-sized	3	.	2	3	8
Sheep-sized	.	.	1	1	2
<b>Total</b>	<b>8</b>	<b>1</b>	<b>8</b>	<b>4</b>	<b>21</b>

Table 1. Number of Identified Specimens for all species from all contexts.

In addition, two pieces of worked bone (<017a>, <017b>) were recorded (see Cessford, below).

(<017a>) is a proximal end of pig 3<sup>rd</sup> metacarpus, with a perforation drilled through the mid-shaft.

(<017b>) appears to be an 'inlay' with a surviving length of 55mm, fashioned from a medium-sized rib, sawn off and highly polished. Two perforations c.5mm in diameter were drilled into the fragment 35mm apart.

### *Worked bone* (Craig Cessford)

Two pieces of worked bone were recorded from [016], Borehole 5. One item (<017a>) is a 'toggle' or 'buzz bone' with a perforation in the middle of the shaft. The function of these items is uncertain and a range of possibilities have been suggested. This includes the idea that they were simple musical instruments. The earliest examples of such items date to the 10th century; they are particularly common finds of the 11th and 12th centuries and continue throughout the medieval period and beyond. The other item (<017b>) with two perforations may be a fragment of inlay of some kind, however given the lack of decoration and its shape it is more probably one side of a scale-tanged knife. Although the item is difficult to date a Late Medieval or Post-Medieval attribution is likely.

### *Worked flint* (with Lawrence Billington)

Four unabraded non-diagnostic small flakes and chips, none larger than 20mm, were recovered from context [012] near the base of Borehole 2. All four are fresh and unpatinated with no obvious edge-damage or rounding. This suggests that they may not be residual material, in the manner of other worked flints identified in the area (e.g. Beadmoore in Davenport et al. (2008, 36)), but may rather have come from a sealed context. The presence of four flints within a single context in such a narrow diameter bore would also suggest that this potentially *in situ* material occurs in high concentration.

## 5 Discussion

The borehole survey demonstrated that archaeological deposits were present in four of the six boreholes excavated within the PDA (Figure 4). The results from these four boreholes can be further divided into two groups based on the presence/absence of deposits, creating a three-fold pattern in the sort of sediment sequences encountered during the survey.

### *Boreholes 3 and 4*

These two boreholes did not reveal the presence of archaeological deposits. Modern car park foundations and a modern levelling deposit interfaced directly with the natural gravels, with no intermediate archaeological horizons present. Both boreholes were located in the car park's lower (basement) level, at the southeast side of the building. This suggests that, during the excavation of the basement level of the car park in the mid-20<sup>th</sup> century, the archaeological strata, encountered elsewhere, in the boreholes in the car park's ground floor, were entirely removed. The top of the natural gravel may have been slightly truncated by this procedure, although comparison of the height of the natural gravel in these boreholes with that in Boreholes 1 and 2 would suggest that little truncation had taken place.

### *Boreholes 1 and 2*

Boreholes 1 and 2, excavated from the ground floor level, at the western side of the PDA, both demonstrated surviving archaeological strata with a depth of around one metre. These strata were overlain by quite thick modern made ground deposits containing both 19<sup>th</sup> and 20<sup>th</sup> century material and some Post-Medieval ceramics. It is assumed that these layers originated from the levelling of the site following the demolition of the 19<sup>th</sup>/20<sup>th</sup> century buildings on the site. The archaeological strata beneath these modern deposits were quite different in nature. Several of the layers had the quality of garden soil and contained a small amount of material culture, including Post-Medieval tile and animal bone. Beneath the garden soils were more compacted sandy-silts and, in Borehole 2, some clayey-sand layers which may have been alluvial in origin. Small worked flint chips and flakes were recovered from a clayey-sand basal layer in Borehole 2. The natural gravel was encountered at around 5m OD in both boreholes.

### *Boreholes 5 and 6*

The upper strata of Boreholes 5 and 6, located at the northern end of the ground floor level of the PDA corresponded to those seen in Boreholes 1 and 2. Both contained soil-like horizons beneath the compacted layers associated with mid-20<sup>th</sup> century demolition. Unlike in Boreholes 1 and 2, these layers contained a relatively large amount of material culture, with Late and Post-Medieval pottery (15<sup>th</sup>–17<sup>th</sup> century), animal bone and oyster shell. In Borehole 5, these soil-like deposits overlaid a short series of proto-peats and alluvial sediments, with the natural gravel encountered around 4m OD. In Borehole 6, there was just one soil-like horizon, under which several more compacted archaeological deposits were identified. These layers contained further 15<sup>th</sup> and 16<sup>th</sup> century coarseware, tile and ceramic building material, animal bone and oyster shell as well as a few very small sherds of abraded Roman pottery. One sherd of 18<sup>th</sup> century stoneware within the lowest of these horizons may point to a late date for this entire sequence, although, given the 'blind' methodology of the machine boring process, it is also possible that this sherd was dislodged from higher within the sequence during core extraction. Alluvially-derived layers were

found beneath these compacted horizons, with the underlying natural gravels present from about 3.7m OD.

The sediment sequences revealed in Boreholes 1–2 and 5–6, dug from the ground floor level of the car park, indicate that across this area a horizon of garden soil of a probable Late and Post-Medieval date survives beneath modern levelling deposits. The quantity and quality of this soil varies across the area. Archaeological features within this horizon may account for some of this variation, although no features could be apprehended within the narrow aperture of the boreholes. The lower levels of these layers may also constitute or incorporate late or Post-Medieval land reclamation or improvement. The presence of this soil horizon agrees with expectations based on the archaeological and historical evidence outlined above, which suggested that throughout the medieval and Post-Medieval periods the Park Street area had been used as orchards and gardens, behind the dwelling and commercial properties which lined Bridge Street and the quayside area. On the eastern side of the site, there was no evidence of archaeological activity pre-dating this horizon.

Comparison of the height of the natural gravel in Boreholes 1 and 2 with that in Boreholes 5 and 6 showed over a metre of difference and would suggest that the underlying 1<sup>st</sup> Terrace gravels slope towards the north or northeast. Alluvial deposition and peat formation had taken place on these lower gravels, as observed in the more northerly boreholes (5 and 6). These sediments indicate that the north/north-eastern part of the PDA was on the edge of the area subject to the sort of floodplain inundation episodes that have been well documented at 24 Thompson's Lane (Newman 2008a) and 1–8 St Clements Gardens (Newman 2013a) to the north of the PDA. The presence of worked flint in Borehole 2 demonstrates, albeit in a limited manner, prehistoric activity on the floodplain.

No clear evidence of the presence of the King's Ditch was identified in this borehole survey. Boreholes 4, 5 and 6 were the sample points located nearest to the presumed line of the ditch. Of these, Borehole 4, in the car park's basement level, did not contain any surviving archaeological strata, while in Borehole 5 1.33m of garden soil-like layers overlaid floodplain deposits. In Borehole 6, the archaeological profile was deeper than that observed elsewhere, with a series of three or possibly four archaeological deposits situated between the Late Medieval/Post-Medieval garden soil and the floodplain deposits. These deposits could relate to the edge of the ditch or, given the presence of Post-Medieval pottery, to the backfilling of the ditch. However, it seems more likely that these layers represent land reclamation or belong to a more minor Post-Medieval feature.

## **6 Statement of potential**

### *Car park basement level*

Neither borehole located within the basement level of the car park indicated the presence of archaeological strata. Although this suggests that the Late Medieval/Post-Medieval garden soil horizon does not survive under the basement level, this does not preclude the presence of any deep cut archaeological features within this area. Boreholes 3 and 4 revealed that the natural gravels, lying above the Gault Clay, were only slightly truncated by the excavation of the car park foundations and therefore any features dug to the depth of the clay, i.e. a watering hole or well, could survive in a truncated form.

### *Car park ground floor level*

A demolition layer incorporating some structural elements of the demolished 19<sup>th</sup>/early 20<sup>th</sup> century buildings is present across the area of the ground floor of the car park. Beneath this, a Late Medieval/Post-Medieval garden soil horizon between 0.52–0.98m in depth covers the same area. The potential for archaeological features within this layer should be recognised, although no specific features could be identified in this survey. This layer contained material culture in varying concentrations with well-preserved animal bone, including worked bone (see Rajkovača above), 15<sup>th</sup>–17<sup>th</sup> century pottery, ceramic building material and oyster shells all observed.

Beneath the soil horizon, the extent of evidence for earlier archaeological features varied between boreholes, with the best evidence for a pre-garden soil feature identified in Borehole 6 at the northern end of the PDA. There is a high probability that any archaeological feature which cuts through or underlies the garden soil horizon would survive throughout the area of the ground floor level of the car park. This would include the King's Ditch which, although not identified here, could still pass within the eastern extent of the PDA. At the northern end of the site, the occurrence of alluvial deposits indicative of wet conditions probably limited the extent of earlier (i.e. pre-medieval) activity in that particular area. However, the presence of residual Roman potsherds within pre-garden soil strata in Borehole 6 points to evidence of Roman activity in the wider area. The unabraded worked flint chips and flakes from the base of Borehole 2 on the western side of the site may point to the survival of a sealed, potentially undisturbed prehistoric context at this locale and more generally can be taken as evidence of prehistoric activity in the area.



## Acknowledgments

Archaeological monitoring at Park Street Multi-storey Car Park was commissioned by Cambridge City Council. The execution of the project was monitored by Andy Thomas of Cambridgeshire Historic Environment Team. On-site observation and recording was undertaken by Iona Robinson. Information on wider site context was provided by Craig Cessford and Richard Newman. Spot dating of ceramics was undertaken by David Hall. Lawrence Billington commented on the worked flint. Report graphics were produced by Bryan Crossan. The project was managed by Alison Dickens.

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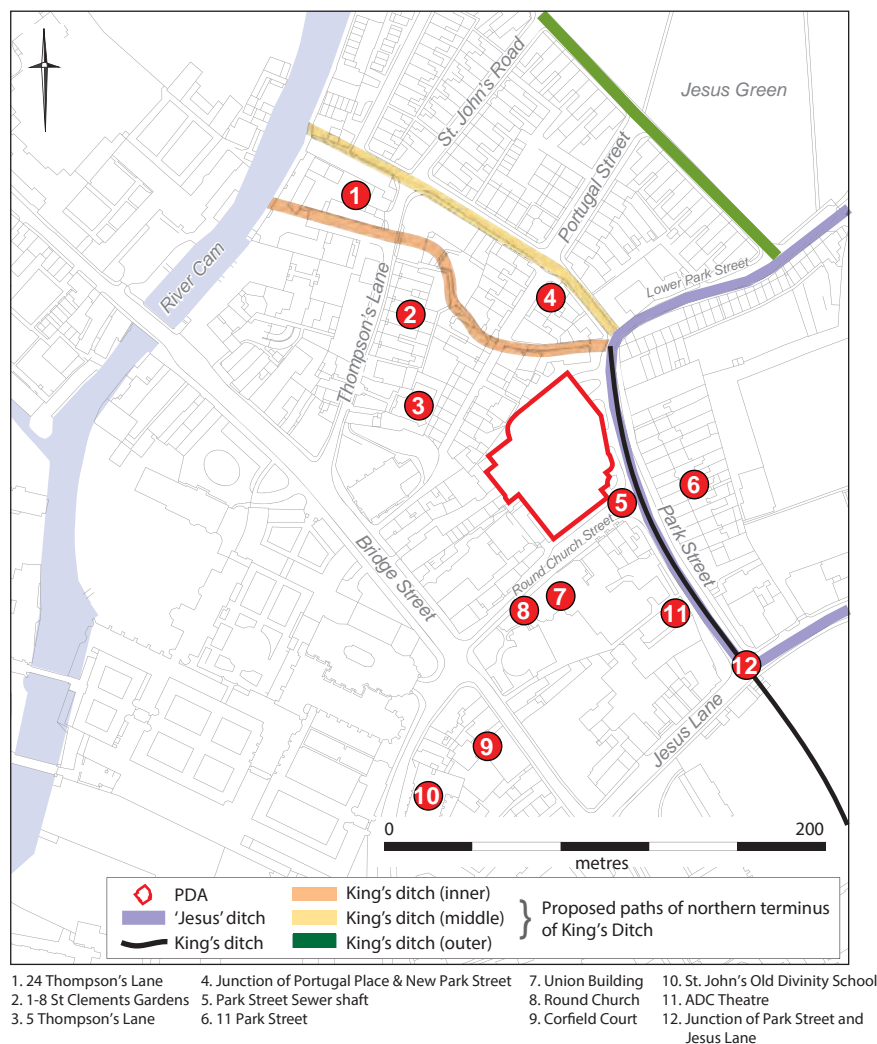
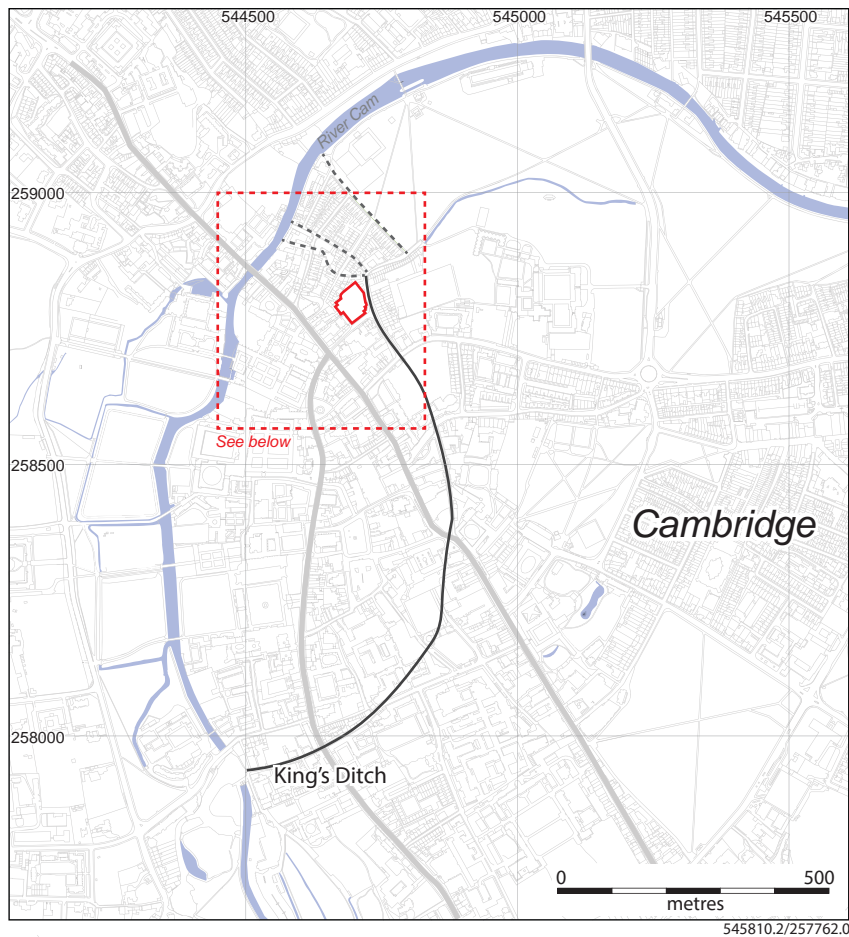


Figure 1. Location Plan

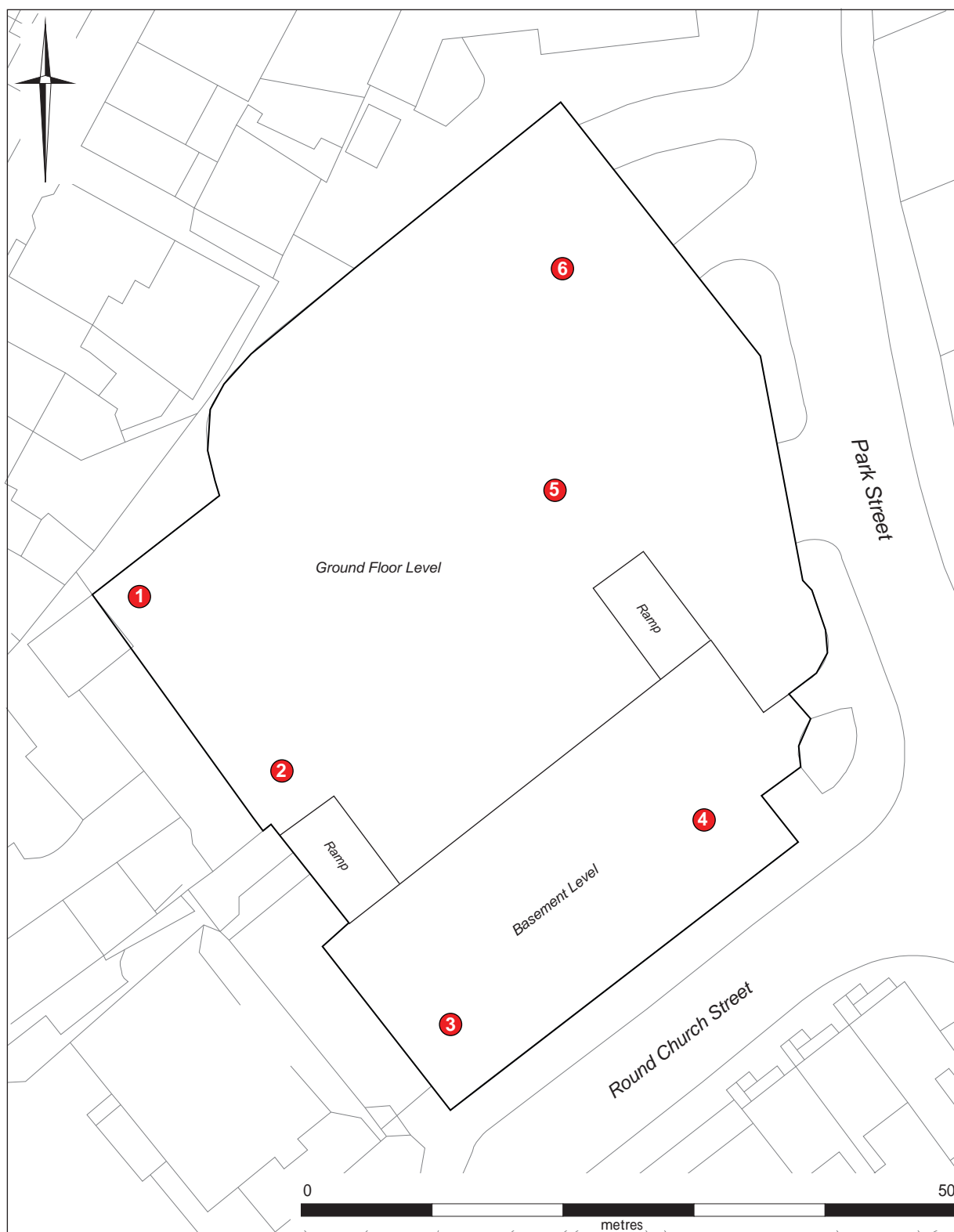


Figure 2. Park Street Multi-storey Car Park, Cambridge: Plan of development area showing location of boreholes 1-6





Figure 3a. David Loggan, 1688

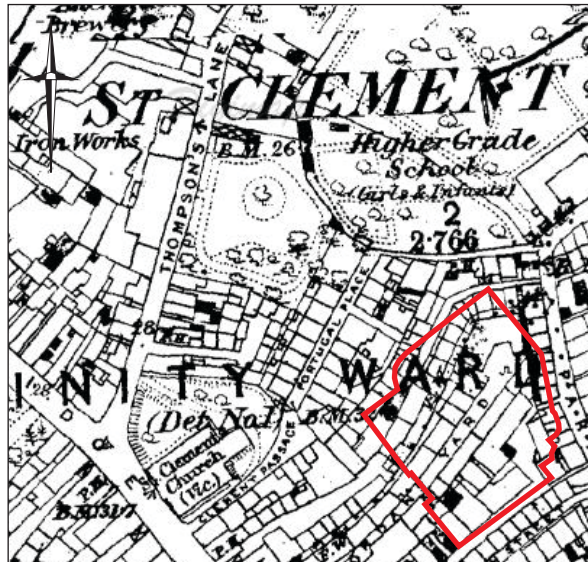


Figure 3b. 1886 1st Edition OS map



Figure 3c. 1:2500 2nd Revision

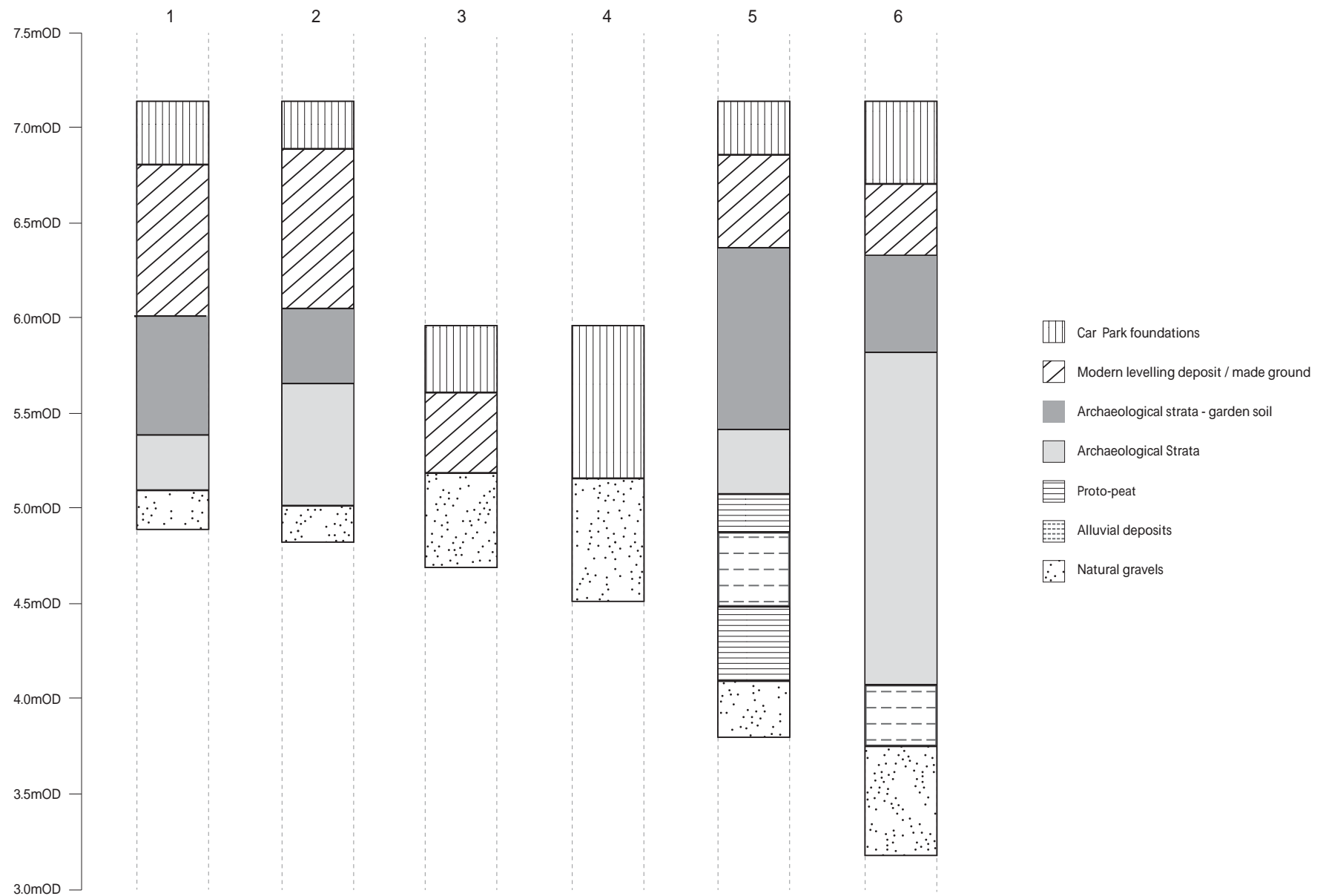


Figure 4. Profile of Boreholes 1-6





(a.



(b.

Figure 5a and 5b. Photographs of Boreholes 1 and 2

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Project details

Project name	Park Street Multi-storey Car Park, Cambridge, Archaeological Monitoring and Recording
Short description of the project	Archaeological monitoring of six geotechnical boreholes was undertaken at the Park Street Multi-storey Car Park, Cambridge. Monitoring revealed that within the area of the car park's ground floor level archaeological strata survived beneath the building's foundations. An archaeological sequence between 1.8 and 2.5m in depth was recorded. Beneath a substantial modern levelling deposit, a horizon of Late Medieval/Post-Medieval garden soil was identified, as well as strata which may represent the fills of archaeological features and Late Medieval land reclamation. No surviving archaeological deposits were observed during the monitoring of boreholes within the area of the car park's lower, basement level.
Project dates	Start: 12-08-2013 End: 05-09-2013
Previous/future work	No / Not known
Any associated project reference codes	PSM13 - Sitecode
Any associated project reference codes	ECB4029 - HER event no.
Type of project	Recording project
Site status	None
Current Land use	Other 2 - In use as a building
Monument type	NONE None
Significant Finds	POTTERY Post Medieval
Significant Finds	ANIMAL REMAINS Uncertain
Significant Finds	POTTERY Post Medieval
Significant Finds	WORKED FLINT Uncertain
Significant Finds	POTTERY Medieval
Significant Finds	POTTERY Roman
Significant Finds	WORKED BONE Uncertain
Investigation type	"Field observation","Recorded Observation"
Prompt	Direction from Local Planning Authority - PPG16



Project location

Country	England
Site location	CAMBRIDGESHIRE CAMBRIDGE CAMBRIDGE Park Street Multi-storey Car Park
Postcode	CB58AS
Study area	6.00 Square metres
Site coordinates	TL 4489 5890 52.2088212107 0.12075063678 52 12 31 N 000 07 14 E Point
Height OD / Depth	Min: 5.80m Max: 7.30m

Project creators

Name of Organisation	Cambridge Archaeological Unit
Project brief originator	Local Authority Archaeologist and/or Planning Authority/advisory body
Project design originator	Alison Dickens
Project director/manager	Alison Dickens
Project supervisor	Iona Robinson
Type of sponsor/funding body	Landowner
Name of sponsor/funding body	Cambridge City Council

Project archives

Physical Archive recipient	Cambridge Archaeological Unit
Physical Archive ID	PSM13
Physical Contents	"Animal Bones","Ceramics","Worked bone","Worked stone/lithics"
Digital Archive recipient	Cambridge Archaeological Unit
Digital Archive ID	PSM13
Digital Contents	"Animal Bones","Ceramics","Worked bone","Worked stone/lithics"
Digital Media available	"Images raster / digital photography","Text"
Paper Archive recipient	Cambridge Archaeological Unit
Paper Archive ID	PSM13
Paper Contents	"Animal Bones","Ceramics","Worked bone","Worked stone/lithics"
Paper Media available	"Diary","Drawing","Map","Report","Section"

Project  
bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	Park Street Multi-storey Car Park, Cambridge, Archaeological Monitoring and Recording
Author(s)/Editor(s)	Robinson, I.
Other bibliographic details	CAU Report No. 1242
Date	2014
Issuer or publisher	CAU
Place of issue or publication	Cambridge
Description	A4 wire bound with plastic laminate front, 13 pages and 6 colour plates

Entered by	Iona Robinson (ihr22@cam.ac.uk)
Entered on	10 July 2014