

**An Archaeological Watching Brief and Excavation at the Sensory Gardens Site,  
Transport Quarter, Gravesend, Kent.**

**Planning Ref: 20100098**

**NGR 564740 173990  
(TQ 64740 73990)**



**Project No: 4567  
Site Code: SGG10**

**ASE Report No. 2011033  
OASIS id: 93788**

**Sarah Porteus  
With contributions by  
Karine Le Hégarat, Luke Barber, Lucy Sibun, Elke Raemen and Dylan Hopkinson**

**May 2011**

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**Abstract**

*Archaeology South-East undertook an archaeological watching brief and excavation during the ground works associated with the development of the Sensory Gardens site, Gravesend. A hill wash deposit containing finds of Neolithic/Mesolithic, Roman and Saxon date was uncovered. No other archaeological periods were represented until the later post-medieval period when remains associated with housing previously occupying the Civic Centre site were identified along with the Woodville Cemetery wall and burials.*

*Analysis of the 91 articulated burials, was carried out in the field and has identified that the burial ground contained a mixed population of men, woman, children and babies but had a bias towards males, possibly reflecting the population of Gravesend in the early 19<sup>th</sup> century. It also provided some artefactual evidence to suggest a maritime connection with at least some of the individuals. It is likely the cemetery contained individuals of mixed status. Human remains were reinterred within the cemetery close to the original burial location.*

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## **1.0 INTRODUCTION**

### **1.1 Site Background**

- 1.1.1 Archaeology South-East, the contracting division of the Centre for Applied Archaeology, Institute of Archaeology, UCL, were commissioned by Gravesend Borough Council to undertake a programme of archaeological monitoring during groundworks associated with the construction of the new Sensory Gardens at the junction of Wrotham Road and Windmill street, Gravesend (Fig. 1, NGR 564740 173990).

### **1.2 Geology and Topography**

- 1.2.1 The underlying geology of the site is made up by the Seaford Chalk and Newhaven Chalk formations. Geotechnical investigations revealed that the natural chalk was overlain in places by a deposit of Thanet Sand.
- 1.2.2 The site lies between 20 and 21 metres AOD and is relatively flat with an increasing slope southwards up Windmill Hill.
- 1.2.3 The land is currently under tarmac and pavement with some architectural landscaping features. The area to the north was previously in use as a cemetery, but is now disused.

### **1.3 Planning Background**

- 1.3.1 The works were undertaken to fulfil conditions arising from planning application 20100098.
- 1.3.2 The following condition was attached to the planning consent:

*AR1 No development shall take place until the applicant, or their successors in title, has secured the implementation of a programme of archaeological work in accordance with a written specification and timetable which has been submitted to and approved by the Local Planning Authority.*

*Reason: To ensure that features of archaeological interest are properly examined and recorded.*

- 1.3.3 The excavations within the burial ground were also subject to the conditions of Faculty (number 0923) granted by the Diocese of Rochester.

### **1.4 Aims and Objectives**

- 1.4.1 The objectives of the archaeological works as detailed in the site specification (KCC 2010 and 2011) were:

*To contribute to heritage knowledge of the area through the recording of the archaeological remains exposed as a result of excavations in connection with the ground works*

- 1.4.2 The specific aims of the archaeological investigations were

*To clarify the nature and extent of any archaeological remains that would be affected by the development.*

*Identification and recording of any areas of modern disturbance, features associated with World War II activity and any evidence of grave cuts, burial vaults or associated features, in addition to identification and recording of any previously unknown archaeological remains encountered.*

- 1.4.3 The specific aims of archaeological works within the area of the former burial ground included:

*Appropriate investigation of specific inhumations leading to greater understanding of the character of the individuals buried*

*Understanding the chronological development of the burial ground and reasons for its establishment*

*Contributing to the understanding of burial practices during the post-medieval period in Gravesend*

*Recording and archaeological removal of inhumations or archaeological remains which will be affected by the development*

## **1.5 Scope of Report**

- 1.5.1 This report represents the findings of the archaeological investigations undertaken by Sarah Porteus, Liane Peyre and Sam Whitehead (archaeologists) between the 20<sup>th</sup> of October 2010 and the 22 of March 2011. The project was managed by Darryl Palmer (fieldwork) and Jim Stevenson (post-excavation).

## **2.0 ARCHAEOLOGICAL BACKGROUND**

### **2.1 Introduction**

- 2.1.1 An Historic Environment Record (HER) search has been undertaken for the area within 500m of the site; this includes some general find-spots from Gravesend where exact location is unrecorded,. A full inventory of HER entries for the area is given in Appendix 1 and summarised below (unique identifiers are given in brackets).

### **2.2 Prehistoric 450 000BC-AD42**

- 2.2.1 Evidence for human activity in the vicinity of the site stretches back to the Palaeolithic with find-spots of axes (TQ67SW435, TQ67SW436). Lithics of Mesolithic date (TQ67SW379) and a Neolithic flint axe (TQ67SW26) have also been found within the area. Human activity continues into the Bronze Age with a find of a looped and socketed axe (TQ67SE4). Archaeological evidence of settlement in the Iron Age includes both settlement activity in the form of pits and ditches (TQ67SW424, TQ67SW378) and artefactual evidence including a coin (TQ67 SE5).

### **2.3 Roman AD43-409**

- 2.3.1 An occupation site of Roman date has been recorded in the area (TQ67SW110) along with pits, ditches and an inhumation burial (TQ67SW374). Samian ware has also been recovered in the vicinity (TQ67 SE3).

### **2.4 Early Medieval AD410-1065**

- 2.4.1 Limited early medieval (Saxon) activity has been identified through the excavation of pits (TQ67 SW375).

### **2.5 Medieval AD1066-1539**

- 2.5.1 The town appears to expand in the later medieval period with the town itself being recorded in documentary sources (TQ67SW172). Also recorded are a manorial complex (TQ67SW233), cess pits (TQ67SW232) and further undefined pits (TQ67SW131).

### **2.6 Post-medieval AD1540-1900**

- 2.6.1 Numerous buildings are recorded within the vicinity of the site during the post-medieval period, including breweries and house foundations. The railway also passed close by.
- 2.6.2 The site itself occupies the former Woodville burial ground, used as an extension to the cemetery of St George's Church between 1799 and 1855. The majority of headstones have been removed from the site though a small number have been retained and placed along the north wall of the cemetery. The disused burial ground was acquired by the Gravesend Urban Sanitary Authority in 1888 and became a public open space.

- 2.6.3 The area currently occupied by the civic centre is depicted on the historic map of 1866 as having been previously occupied by terraced housing and a public house.

## **2.7 Modern AD1900-present**

- 2.7.1 Features relating to World War II, including an emergency water tank, were located on the Sensory Gardens site; in addition, air raid shelters, firewatchers' headquarters, a police telephone box and a civil defence control centre were all located in the vicinity.

### **3.0 ARCHAEOLOGICAL METHODOLOGY**

#### **3.1 Introduction**

- 3.1.1 The aim of the archaeological work was to monitor the groundworks to ensure that any human remains, structures, grave stones, features, artefacts or ecofacts of archaeological interest exposed or disturbed by the excavations were recorded and interpreted to appropriate standards. The monitored areas are shown on Figure 2.

#### **3.2 General Methodology**

- 3.2.1 Excavations were undertaken using a mini digger or 13 tonne machine fitted with a flat bladed ditching bucket.
- 3.2.2 Groundworks were monitored by an appropriately qualified archaeologist until/unless it became clear beyond reasonable doubt that no archaeological remains were present (i.e. once excavation reached undisturbed natural geology).
- 3.2.3 Where excavations revealed significant archaeological features or deposits, machine or hand excavation by the contractor's staff ceased, and these were hand excavated and recorded to archaeological standards by the archaeologist in attendance. Exposures were hand cleaned by the archaeologist as necessary to clarify the presence/absence and nature of any features. Adequate time was made available for appropriate archaeological hand excavation and recording in order to extract archaeological and environmental information.
- 3.2.4 Kent County Council was kept informed of progress at all times so that the County Archaeologist could monitor the archaeological work as necessary.
- 3.2.5 All archaeological features and deposits encountered were recorded in line with the site specifications prepared by KCC (2010 & 2011) and according to accepted professional standards (IfA 2008). Archaeological features and deposits were recorded using the standard context record sheets used by Archaeology South-East. A full photographic record was kept of the work as appropriate. The locations of the excavated areas were surveyed by Global Positioning System and are located according to the National Grid
- 3.2.6 All artefacts/ecofacts of archaeological interest were bagged according to their context and retained for analysis by Archaeology South-East specialists.

#### **3.3 Human Remains**

- 3.3.1 Human remains and associated coffin furniture uncovered were excavated by hand and recorded on standard ASE pro-forma recording sheets; they were hand planned at 1:20 scale. Articulated remains were individually recorded; details of age, sex and pathology were recorded on site by a trained osteoarchaeologist.
- 3.3.2 All the human skeletal remains, associated finds and coffin furniture were

reburied in a recorded location as close as possible to their original burial location. Reburial was monitored by the onsite archaeologist; remains were interred within a single pit, measuring 1.5m in depth, which was covered with 1 metre of sand to protect the remains.

### **3.4 Site Archive**

3.4.1 The archive is currently housed at the offices of Archaeology South-East, Portslade, pending deposition with a suitable museum. The archive is quantified in Table 1.

Number of Contexts	202
No. of files/paper record	2
Plan and sections sheets	10
Bulk Samples	1
Photographs	3 colour slide and black and white films, 1 cd of digital images
Bulk finds	1 box
Registered finds	6
Environmental flots/residue	1

Table 1: Quantification of site archive

## **4.0 RESULTS**

### **4.1 Introduction**

- 4.1.1 A summary of the archaeological remains in the cemetery area and in the area of ground reduction around the Civic Centre is given below. A full list of contexts appears in Appendix 2. Detailed analysis of the skeletal remains was carried out by on site and the results of this work are presented in Appendix 3 along with a full burial register and a list of heights AOD for each skeleton (Appendixes 4 and 5).

### **4.1 Prehistoric to Medieval**

- 4.1.1 Within the cemetery area, natural chalk substrate [061] was encountered at variable depths of around 18.00m AOD. A relatively complex geoarchaeological sequence was encountered with a Thanet Sand or Loess deposit overlying the natural chalk. Overlying the Thanet Sand, at a depth of 18.72m AOD, was deposit [196] (Fig. 3), a 0.35m thick loose dark orange brown silty sand colluvium deposit, containing moderate charcoal flecking, with occasional artefacts and the partial skeleton of a cow. Artefacts recovered from the colluvium included flintwork of Mesolithic or Neolithic date, ceramic building material of Roman date and a sherd of pottery of likely Saxon (5<sup>th</sup> to 6<sup>th</sup> century) date. This sherd is relatively large and unabraded, so it is considered possible (but not certain) that it is contemporary with the final deposition of the layer. Overlying this deposit was a subsoil deposit of further hill wash, [203], in a clean orangish brown colour.

### **4.2 Post-medieval (Figs. 3 and 4)**

- 4.2.1 The in situ cemetery wall [014] was identified enclosing the cemetery and extending beneath the modern road. The wall was constructed of red brick of 0.40m width at the top and widening below the soil line, the total depth of the wall was not ascertained and the brick is broadly contemporary with the date of the cemetery.
- 4.2.2 Overlying and intruding into subsoil deposit [203] was a disturbed general cemetery soil deposit [010] of up to 2.50m thickness, containing the burials (generic cut number [018] was given for unconfirmed burial cuts seen during stripping of the site, a brick tomb [020] and burial marker [012] were also identified). A total of 91 articulated burials were identified. When the burial density is multiplied to take in the entire area covered by the cemetery, this suggests it may hold around 2500 burials. Further detailed analysis of the human remains is provided in Appendix 3
- 4.2.3 Overlying the cemetery soil, [010], was a dark brown silty clay buried topsoil deposit, [013], of 0.10m thickness containing clay tobacco pipe and occasional disarticulated bone. The buried topsoil was overlain by a 0.35m thick made ground deposit, [009], of brown silty clay mottled with chalk, possibly serving as a sealing deposit over the closed burial ground. This deposit contained 19<sup>th</sup> century CBM and pottery dated to the range 1840-1880.
- 4.2.4 The area of ground reduction around the Civic Centre revealed a 45m long

north to south running wall [001] (cut [002]) of 0.40m width and uncertain total depth. The wall consisted of bricks in the Museum of London fabric 3035 and retained shallow rectangular frogs stamped with '2W' and 'W', dating to between 1770 and 1940 (most likely the first half of this date bracket). Abutting wall [001] was a sticky brown silty clay garden soil, [003], of 2m width east to west and 30 metres length north to south and of uncertain depth. A circular brick soak-away or septic tank, [005], (cut [007]) of 1m diameter was also noted; this appears to be of similar date to wall [001] as it is in an identical brick fabric. Covering the brick structures was blackish brown silty clay made ground deposit, [006], of variable thickness up to 0.30m, which is of probable 19<sup>th</sup> or early 20<sup>th</sup> century date. Truncating this deposit was the cut for the construction of the Civic Centre and other modern services, [004]. The area was sealed by a 20<sup>th</sup> century tarmac and concrete deposits of up to 0.30m thickness. The brick features correspond with structures depicted on the 1866 Ordinance Survey map.

### **4.3 Modern AD 1900 to present (Fig. 3)**

- 4.3.1 Overlying the made ground in the cemetery area, [009], was a deposit of compacted chalk, [011], of 0.10m thickness, possibly representing a surface for a path of later 19<sup>th</sup> or 20<sup>th</sup> century date. Cut into this deposit was the base of a possible lamp or water feature in the centre of the cemetery site. The Ordinance Survey map of 1902 shows that the gardens were divided by footpaths. At the time of the 1902 map, these crossed diagonally with a path around the edge of the area and a number of trees. Later, on the 1932 map, the trees appear to have been removed and finally, in 1936, only a single diagonal path running north-west to south-east remained. The site was capped by a sequence of modern tarmac surfaces, [008], with intrusive foundations for decorative 20<sup>th</sup> century planters.

## 5.0 THE FINDS

**5.1** A small assemblage of finds was recovered during the archaeological work (Table 2). An additional six finds were assigned unique registered finds numbers (Table 3). Finds were all washed and dried or air dried as appropriate. They were counted, weighed and bagged by context and by material. None of the finds require further conservation.

Context	Pottery	wt (g)	CBM	wt (g)	Bone	wt (g)	Flint	wt (g)	CTP	wt (g)
9	16	826	1	900	1	16			3	8
10					31	1248	1	<2	3	16
14			2	4610						
196	1	24	5	1342	120	2312	2	18		

Table 2. Quantification of the finds

RF no	Context	Object	Material	Period	Wt (g)
1	10	CTP	CERA	PMED	4
2	9	CTP	CERA	PMED	2
3	9	CTP	CERA	PMED	4
4	9	CTP	CERA	PMED	2
5	10	MOUN	COPP	PMED	4
6	196	UNK	COPP	MED	<2

Table 3. Summary of the Registered Finds

## 5.2 The Clay Tobacco Pipe by Elke Raemen

**5.2.1** A small assemblage, consisting of seven stem and three bowl fragments, (total weight 41g) was recovered from two individually numbered contexts, [009] and [010] (Table 4). Four pieces were decorated or marked and were therefore assigned a registered finds number.

**5.2.2** The earliest stem fragment dates to c. 1620-1660 and was recovered from cemetery soil, [010]. The remaining stem fragments all date between c. 1750 and 1920. A fragment from context [009] contains 'BISHOP.[...]' moulded in relief along the stem, with 'GRAVESEND' moulded on the reverse. This refers to Henry Bishop, recorded in 1847 in Gravesend.

**5.2.3** Bowls include a fluted fragment displaying oak leafs and acorns ([009], RF <2>) moulded on the seams. The fragment, a type AO28 (Atkinson and Oswald 1969), dates between c. 1820 and 1840. A bowl of the same type and with similar, though slightly cruder, decoration was recovered from [010]. Marked "IS" on the spur, the pipe was manufactured by John Sloper (2), recorded in Gravesend between 1841 and 1875. Slightly earlier is an undecorated type AO25 ([009]; c. 1700-1770) fragment, likely to date to the mid to later 18<sup>th</sup> century. The maker's marks, moulded in relief on the stem,

point towards Thomas Johnson, recorded between 1733 and 1764 in Gravesend. This piece is likely to be one of his later pipes.

Context	RF no	B	S	Form	ED	LD	Dec	Mark	Comments
9			3		1750	1920			
9	2	1		AO2 8	1820	1840	Fluted; oak leaf and acorn on seam	-	
9	3	1		AO2 5	1700	1770		TI	Thomas Johnson rec. 1733- 1764 Gravesend
9	4		1		1840	1900		BISHOP. /GRAVESEND	Henry Bishop rec. 1847 Gravesend
10			1		1620	1660			
10			2		1750	1920			
10	1	1		AO2 8	1820	1840	Fluted; oak leaf and acorn on seam	IS	John Sloper (2) rec. 1841- 1875 Gravesend

Table 4: Overview of the clay tobacco pipes

### 5.3 The Metalwork by Elke Raemen

5.3.1 Two pieces of metalwork were assigned registered finds numbers (Table 3). RF <6>, recovered from hill-wash deposit [196], consists of a narrow, rectangular-sectioned strip fragment, possibly from a belt fitting. Too little survives for the piece to be intrinsically dateable; however, the latest pottery from this rather mixed deposit dates to the 5<sup>th</sup> to 6<sup>th</sup> centuries. Cemetery soil, [010], contained a circular mount (RF <5>) with raised centrepiece, containing a moulded floral motive. The fragment is likely to be of late medieval to early post-medieval date and represents a decorative mount possibly for leatherwork or furniture.

5.3.2 In addition, a single iron stud with domed head was recovered from hill-wash [196]. Some mineralised wood survives in situ. This fragment may be an intrusive coffin stud from the cemetery soil above.

### 5.4 The Ceramic Building Material by Sarah Porteus

5.4.1 A total of eight pieces of ceramic building material (CBM) were recovered from three contexts and had a combined weight of 6852g.

5.4.2 The earliest material was recovered from deposit [196] which contained a fragment of brick, three conjoining *tegula* fragments and a fragment tile, all of Roman date. The Roman material was all in a fine sandy orange fabric with moderate fine quartz and sparse white flecking. The *tegula* has a squared flange of 23mm thickness. The brick fragment is of 35mm thickness and has two finger imprints in the upper surface and an indented margin underneath, possibly suggesting the brick had been laid overlapping with others during the drying phase.

5.4.3 A sample of brick from the cemetery wall, [014], was also recovered. The 18<sup>th</sup> century bricks are both unfroged and slightly warped, measuring 220 by 105

by 65mm and mortared with coarse sandy lime mortar. They are in a purplish fabric with ashy inclusions similar to Museum of London fabrics MoL3032 and 3034. The most recent fragment was a piece of decorative edging tile with a barley twist top from context, [009], the fragment is in a purple coloured hard-fired engineering style fabric and is probably of later 19<sup>th</sup> to mid 20<sup>th</sup> century date.

## **5.5 The Flintwork by Karine Le Hégarat**

- 5.5.1 Four struck flints, weighing 20g, were recovered during the evaluation. Three were collected during fieldwork and the remaining artefact was found in the residue of environmental sample <1>. Three pieces originated from hill wash deposit [196], which predates the cemetery and does not contain any finds post-dating the Saxon period; one piece was recovered from the disturbed cemetery soil (deposit [010]). All of the pieces are manufactured from fine grained almost translucent light brown to dark brown flint with a thin abraded outer surface. They display light edge chipping which implies that the material has undergone a small degree of post-depositional disturbance. The small assemblage consists of pieces of debitage including two flakes and two flake fragments. They exhibit flake scar removals on their dorsal face. None of the struck flints are diagnostic of a particular period. Nonetheless, they indicate prehistoric activities in the vicinity of the site and based on technological aspects of the pieces of debitage, the small assemblage could well indicate early prehistoric activities (Mesolithic and Neolithic).

## **5.6 The Animal Bone by Lucy Sibun**

### **5.6.1 Introduction**

Two contexts produced animal bone: hill wash deposit [196] and cemetery soil [010]. The bone is in a moderate to good state of preservation. Environmental sample <1>, from [196], produced a small quantity of bone in addition to the hand collected sample.

### **5.6.2 Methodology**

Wherever possible, bone fragments have been identified to species and the skeletal element represented. The bone was identified using the in-house reference collection and Schmidt (1972). Where bone fragments were not identifiable to species, they have been recorded as cattle or sheep-sized. Complete bones were absent from the assemblage and no measurements were possible. Each fragment has been studied for signs of butchery, burning, gnawing and pathology.

### **5.6.3 Results**

The identified assemblage from both contexts has been fully quantified and recorded in an Excel spreadsheet. Table 5 below shows the Number of Identified Specimens (NISP) from the hand collected sample, divided by context. The minimum number of individuals (MNI) is shown in brackets. For the purposes of this report, fragments recorded as cattle or sheep sized have been included in the cattle and sheep totals respectively.

	Context [010]	Context [196]
Cattle	15 (2)	71 (1)
Sheep	1 (1)	4 (1)
Pig	3 (2)	
Horse		1 (1)
Dog	1 (1)	
Bird		3 (1)
Fish		3 (1)
<i>Total</i>	<i>20</i>	<i>82</i>

*Table 5: NISP counts by context (MNI in brackets)*

Context [010] produced 20 fragments of bone. The three main domesticated species were identified as well as a single fragment of dog. Evidence of butchery consistent with jointing was found on a cattle humerus and femur, both meat producing elements.

Context [196] produced a larger assemblage comprising 82 fragments. The majority of fragments represent cattle but this number is biased by the large quantity of fragmentary rib shafts. The cattle assemblage also included metapodials and vertebrae as well as cranial fragments, mandibles and loose teeth. The sheep assemblage included mandibles, teeth and a single long bone fragment. Pig was represented by cranial fragments and teeth whereas horse was represented by a single vertebra. A small quantity of unidentified bird and fish was also present. Additional small mammal and fish bone was recovered in small quantities (0.3 grams in total) from environmental sample <1>.

#### 5.6.4 Discussion

The small size of the assemblage hinders meaningful interpretation of the results. In the case of cemetery soil [010] this is combined with difficulties resulting from the longevity of the context. A lack of precise dating for the hill wash deposit makes this assemblage less meaningful. Although it produced a larger quantity of bone, nothing of significance was noted and the majority of fragments originate from the articulated remains of a partial skeleton identified as cattle.

### 5.7 The Post-Roman Pottery by Luke Barber

#### 5.7.1 Introduction

The archaeological work recovered a very small assemblage of post-Roman pottery from two different contexts. All of the pottery is in a fresh unabraded condition with the majority of sherds being of medium to large size (40 to 150mm across). As such, the material does not appear to have been subjected to any significant reworking.

#### 5.7.2 Anglo-Saxon

The earliest pottery present consists of an Early Anglo-Saxon sherd (5<sup>th</sup> to 6<sup>th</sup> century) from context [196]. The piece is from a quite crudely formed hand-made small bowl (diameter 100-110mm) in a dense fine sandy fabric with rare vegetable inclusions (voids). The piece, which is quite large (24g) and

unabraded, has been low-fired and reduced black throughout. The interior is heavily sooted. This sherd's presence certainly suggests Saxon activity close-by.

#### 5.7.3 Post-medieval

The remainder of the assemblage is all from context [009], which overlies the cemetery, and suggests a date range of around 1840 to 1880. This is consistent with documentary sources, suggesting that the cemetery went out of use by 1855. The earliest vessel consists of the rim and part of the handle from a low-fired London stoneware bottle of 18<sup>th</sup>- century date. The size of the sherd (209g), together with its freshness, suggests it was in contemporaneous use with the 19<sup>th</sup>- century vessels with which it was found. Four other stoneware vessels are represented in the group. These consist of a bodysherd from a large salt-glazed bottle, the rim of another large bottle with tan top and Bristol glaze, the top of a ginger beer bottle and a near complete flat bottle/spirit flask. The latter vessel is impressed with the retailer's name: T.B.C. MEADER, WINE & SPIRIT MERCHANT, 40 LEATHER LANE, HOLBORN. Other wares include two sherds from a yellow ware bowl with black-slipped line decoration, part of a hand-painted refined white earthenware saucer and a number of sherds from blue transfer-printed wares. The latter include a dish with Wild Rose pattern, a serving dish with Chinese landscape, a bowl with floral design and two cups with foliage designs. The presence of both coarse kitchen wares and table/tea wares shows the assemblage to be of a domestic character.

## **6.0 THE ENVIRONMENTAL SAMPLES by Karine Le Hégarat**

### **6.1 Introduction and Methodology**

6.1.1 A single 20L bulk soil sample was taken to establish evidence for environmental indicators such as wood charcoal, charred macrobotanical remains, fauna and mollusca, with the aim of recovering information regarding the past vegetation and the activities taking place in the area. The sample was extracted from charcoal-rich hill wash deposit [196], which might be of Saxon date. It was processed in a flotation tank and the residue and flot were retained on 500µm and 250µm meshes and air dried. The residue was passed through graded sieves (4 and 2mm) and each fraction sorted for environmental and artefact remains (Appendix 6, Table 1). The flot was scanned under a stereozoom microscope at x7-45 magnifications and its content recorded (Appendix 6, Table 2).

### **6.2 Results**

6.2.1 A relatively diverse assemblage of environmental remains and artefacts has been recorded in the sample extracted from hill wash deposit, [196]. Sampling produced a moderate assemblage of wood charcoal, including several well preserved fragments of >4mm in size. Charred macrobotanical remains were also present; however the assemblage was very limited. It consisted of infrequent charred crop remains including caryopses of wheat (*Triticum* sp.), barley (*Hordeum* sp.), indeterminate grains (Ceralia) and a single grass seed (Poaceae). The sample also contained a small assemblage of unburnt mammal bones, some infrequent fish bones and land snail shells. A small amount of fired clay, a single piece of flint debitage and a single iron stud with domed head were also evident in the residue.

### **6.3 Discussion**

6.3.1 Unfortunately the charred macroplant remains are too limited to examine the agriculture or vegetation environment. Several of the charcoal fragments are well enough preserved for identification; however the origin of these fragments, in the 0.35m thick hill-wash deposit, is uncertain and the assemblage may have accumulated over an extended period of time. Alternatively, it might correspond with a major erosive event. As the primary context/s of these fragments is unknown the assemblage has little potential for characterising the vegetation or for dating.

## **7.0 DISCUSSION**

### **7.1 Deposits Pre-dating the Cemetery**

7.1.1 At the limit of excavation, colluvium deposit [196], which had collected in a natural hollow in the chalk, incorporated material of prehistoric Roman and Saxon date. The rate of deposition of this deposit is uncertain; however, the large quantity of charcoal and charred remains within it may indicate a period of increased activity and deforestation associated with human activity, leading to greater run off and build-up of colluvium. Given that the most recent find from deposit [196] is of 5<sup>th</sup> to 6<sup>th</sup> century date, it may be postulated that the period of greater deforestation uphill is of Saxon or medieval date, perhaps coinciding with the growth of the town in the medieval period and a greater demand for wood for timber framing. Deposits overlying [196] were broadly sterile and devoid of finds, perhaps suggesting a decrease in human activity uphill from the site during the later medieval to early post-medieval period. An alternative possibility is that the increase in hill-wash, represented by [196], resulted from deforestation of the area to serve the increasing maritime activities along the Thames and its estuary in the later post-medieval period, which could have had the effect of destabilising the soils.

7.1.2 Although no in situ features were identified, evidence was found of possible Mesolithic or Neolithic, Roman and Saxon activity in the area. Ceramic building material from Roman structures, likely to have been situated uphill to the south of the site, appear to have been washed downhill into the valley. No evidence was found of post-Saxon activity until later post medieval period.

### **7.2 The Burial Ground**

#### **7.2.1 *Chronological development and reasons for establishment of the burial ground***

Prior to the construction of Tilbury port in 1882, Gravesend was the first port of entry along the Thames and also served as the last port of embarkation for emigrants. It is therefore likely that the population of Gravesend had experienced a dramatic increase towards the end of the 18<sup>th</sup> century, necessitating the increase in burial space. As the port at Gravesend served both emigrating and presumably immigrating populations, it is possible that a number of individuals were interred about whom little was known. This may explain the apparent disparity between the recorded and actual number of burials. As one of the first ports on the Thames, it may also have served as a place for passengers, who had fallen ill on voyages, to disembark for treatment, or for the burial of individuals who had died at sea. An individual buried with a line of cannonballs had possibly been prepared for burial at sea but had reached dock before this occurred (Fig. 6). Historically, cannon balls were placed in the canvas with the body to weight it during burial at sea (Fisher 2004). It is also interesting to note that Kent, including Gravesend, was hit by the cholera epidemic of 1832 and again more severely by the 1849 epidemic (Price 2009). This falls within the time in which the cemetery was in use and may have been a cause of death for many individuals. The same national cholera epidemics led to the development of the Burial Act 1852, which resulted in a number of cemeteries which were deemed 'full' being closed to protect public health. It seems likely that the Woodville burial

ground was one such ground, given its location within an increasingly urban area.

#### 7.2.2 *Burial practice*

Burials broadly appear to have been organised in rows with fairly regular spacing. Within many of the grave locations, stacking of burials had occurred; some stacks containing up to five individuals. Minimal intercutting of burials was observed; the majority of disarticulated remains apparently came from the disturbance of skeletons within a burial stack by grave-diggers excavating to insert the more recent burials. Two different alignments were identified, east-west and north-west-south-east. Stratigraphically, it cannot be ascertained whether either of these positions is earlier or later than the other and it is probable that they are contemporary. The vast majority of individuals were interred in coffins.

#### 7.2.3 The character of the individuals interred

General observations on the cemetery population reveal that it was dominated by males with a little over two thirds of the excavated individuals being male, or probably male. However, men, women, children and infants were all represented. The prevalence of males may reflect the wider population of Gravesend during the first half of the 19<sup>th</sup> century, being dominated by the port and maritime activities which would have attracted a large number of male workers to the area. A possible hooped copper alloy earring was also found near the head of a middle aged adult male. This may suggest maritime associations, following the naval superstition that 'pierced ears would improve their eyesight and make them more lively' (Fisher 2004). In addition to the artefactual evidence, the skeletal remains also suggest that many of the males were involved in heavy work; development of extra articular facets on acromion and pronounced arm and shoulder musculature and humeral fractures were all observed. Degenerative joint disease of the shoulder articulations was also noted on a number of individuals and could relate to occupations with intense shoulder activity.

The status of the individuals cannot be accurately ascertained, though it would appear that a range of statuses are represented. Both the large brick vault and one individual with dentures (Figure 6), representing expensive dental work, seem to suggest the presence of higher status individuals; however, the general musculature of other individuals suggests a high degree of manual labour, indicating people of lower status.

## **8.0 CONCLUSION**

### **8.1 Introduction**

- 8.1.1 The archaeological watching brief and excavation during the ground works associated with the development of the Sensory Gardens site, Gravesend have contributed to the heritage knowledge of the area through recording of the archaeological remains and features impacted upon by the development.

### **8.2 Archaeological Deposits and Structures**

- 8.2.1 The discovery of hill wash deposits has added to our understanding of the geoarchaeological development of the town. The location and nature of post-medieval remains encountered confirmed the locations of buildings depicted cartographically and confirmed the extent and boundary of the cemetery.

### **8.3 The Cemetery**

- 8.3.1 The analysis of the human remains in the field has identified that the burial ground contained a mixed population of men, woman, children and babies but had a bias towards males, possibly reflecting the population of Gravesend in the early 19<sup>th</sup> century. It also provided some artefactual evidence to suggest a maritime connection with at least some of the individuals. It is likely the cemetery contained individuals of mixed status. The cemetery is also likely to have been opened as a response to increasing population and traffic through Gravesend port in the later 18<sup>th</sup> century. Later, the cemetery may have closed in response to the increasing health concerns associated with overcrowded urban cemeteries.
- 8.3.2 The archaeological monitoring also confirmed that the cemetery wall remains in situ though slightly reduced in height beneath the new development and that the majority of burials in the graveyard remain undisturbed.

### **8.4 Summary**

- 8.4.1 The archaeological methodology has effectively mitigated against the loss of information during the construction of the Sensory Gardens and has effectively recorded the information where preservation in situ was not possible.

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## **ACKNOWLEDGEMENTS**

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### SMR Summary Form

Site Code	SGG10					
Identification Name and Address	Sensory Gardens, Gravesend					
County, District &/or Borough	Gravesham, Kent					
OS Grid Refs.	564740 173990					
Geology	Seaford and Newhaven Chalk formations					
Arch. South-East Project Number	4567					
Type of Fieldwork	Eval.	Excav. ✓	Watching Brief ✓	Standing Structure	Survey	Other
Type of Site	Green Field	Shallow Urban ✓	Deep Urban	Other		
Dates of Fieldwork	Eval.	Excav. 24/1/11-11/2/11	WB. 20/10/10-22/3/11	Other		
Sponsor/Client	Gravesend Borough Council					
Project Manager	Darryl Palmer					
Project Supervisor	Sarah Porteus					
Period Summary	Palaeo.	Meso. ✓	Neo. ✓	BA	IA	RB ✓
	AS ✓	MED	PM ✓	Other Modern ✓		
<p>100 Word Summary.</p> <p><i>A hillwash deposit containing Mesolithic/Neolithic flintwork, Roman ceramic building material and a sherd of Saxon pottery was uncovered in a natural chalk hollow on site. Overlying the hill wash was a further colluvial deposit into which was cut a post-medieval cemetery dating from 1799 to 1855. Remains associated with landscaping of the cemetery following its closure was also uncovered.</i></p>						

## OASIS Form

### OASIS ID: archaeol6-93788

#### Project details

Project name Archaeological watching brief and eval at Sensory Gardens, Gravesend

Archaeology South-East undertook an archaeological watching brief and excavation during the ground works associated with the development of the Sensory Gardens site, Gravesend. A hill wash deposit containing finds of Neolithic/Mesolithic, Roman and Saxon date was uncovered. No other archaeological periods were represented until the later post-medieval period when remains associated with housing previously occupying the Civic Centre site were identified along with the Woodville Cemetery wall and burials. The in field analysis of the 91 articulated burials has identified the burial ground contained a mixed population of men, woman, children and babies but had a bias towards males, possibly reflecting the population of Gravesend in the early 19th century. It also provided some artefactual evidence to suggest a maritime connection with at least some of the individuals. It is likely the cemetery contained individuals of mixed status. Human remains were reinterred within the cemetery close to the original burial location.

Project dates Start: 20-10-2010 End: 22-03-2011

Previous/future work No / No

Any associated project reference codes SGG10 - Sitecode

Type of project Recording project

Site status None

Current Land use Other 4 - Churchyard

Monument type NONE None

Significant Finds BURIAL Post Medieval

Significant Finds POTTERY Early Medieval

Significant Finds LITHICS Neolithic

Investigation type 'Watching Brief'

Prompt Planning condition

#### Project location

Country England

Site location KENT GRAVESHAM GRAVESEND Sensory Gardens, Transport Quarter

Postcode DA12 1AU

Study area 50.00 Square metres

Site coordinates TQ 64740 73990 51.4403851117 0.370629289588 51 26 25 N 000 22 14 E Point

#### Project creators

Name of Organisation Archaeology South-East

Project brief originator	Kent County Council
Project design originator	Kent County Council
Project director/manager	Darryl Palmer
Project supervisor	Sarah Porteus
Type of sponsor/funding body	Kent County Council
Project archives	
Physical Archive recipient	MAIDSTONE MUSEUM
Physical Contents	'Animal Bones','Ceramics','Metal'
Digital Archive recipient	MAIDSTONE MUSEUM
Digital Contents	'none'
Digital Media available	'Images raster / digital photography'
Paper Archive recipient	MAIDSTONE MUSEUM
Paper Contents	'none'
Paper Media available	'Context sheet','Drawing','Notebook - Excavation',' Research',' General Notes','Photograph','Plan','Report','Section','Unpublished Text'
Project bibliography 1	
Publication type	Grey literature (unpublished document/manuscript)
Title	An archaeological watching brief and Excavation at the Sensory Gardens Site, Transport Quarter, Gravesend, Kent.
Author(s)/Editor(s)	Porteus, S.
Other bibliographic details	Report: 2011033 Project: 4567
Date	2011
Issuer or publisher	archaeology South East
Place of issue or publication	Archaeology South-East, Portslade
Description	A4 bound report and pdf copy.
Entered by	sarah Porteus (s.porteus@ucl.ac.uk)
Entered on	26 April 2011

## APPENDIX 1: Summary of HER records within 500m radius of the site

SMR number	record type	description	date
TQ 67 SW 435	Find Spot	hand axes	paleolithic
TQ 67 SW 436	Find Spot	hand axes	paleolithic
TQ 67 SW 379	Find Spot	lithics	Mesolithic
TQ 67 SE 26	Find Spot	flint axe	Neolithic
TQ 67 SE 4	Find Spot	looped and socketed axe.	Bronze Age
TQ 67 SW 373	Find Spot	lithics	middle Bronze Age
TQ 67 SW 423	monument	pits, ditches, post holes	late Bronze Age to Early Iron Age
TQ 67 SE 5	Find Spot	coins	Iron Age
TQ 67 SW 378	monument	ditch	Iron Age
TQ 67 SW 424	monument	pits, floors, ditches, beam slots	late Iron Age-Early Medieval
TQ 67 SW 374	monument	pits and ditches and burial	Roman
TQ 67 SW 110	monument	Occupation site	Roman
TQ 67 SE 3	Find Spot	Samian patera	Roman (2nd century)
TQ 67 SW 375	monument	pits	Saxon/ early medieval
TQ 67 SW 172	place	Town	medieval
TQ 67 SW 232	monument	cess pits	medieval
TQ 67 SW 233	monument	manorial complex	medieval
TQ 67 SW 131	monument	pits	medieval to post-medieval
TQ 67 SW 5	monument	block house	medieval to post-medieval
TQ 67 SE 54	Find Spot	clay pipes	Medieval to post-medieval (C16th)
TQ 67 SW 132	monument	rubbish pits	post-medieval
TQ 67 SW 203	monument	brewery	post-medieval
TQ 67 SE 232	monument	brewery	post-medieval
TQ 67 SW 1000	monument	amsterdam bridge and pier	post-medieval
TQ 67 SW 1053	monument	maltings	post-medieval
TQ 67 SW 227	monument	site of cellar	post-medieval
TQ 67 SW 228	monument	site of cellar	post-medieval
TQ 67 SW 229	monument	basement	post-medieval
TQ 67 SW 231	monument	site of distillery	post-medieval
TQ 67 SW 246	building	gravesend and north kent hospital	post-medieval
TQ 67 SW 262	monument	building foundations	post-medieval
TQ 67 SW 263	monument	building foundations	post-medieval
TQ 67 SW 264	monument	building foundations	post-medieval
TQ 67 SW 265	monument	building foundations	post-medieval
TQ 67 SW 266	monument	building foundations	post-medieval
TQ 67 SW 267	monument	building foundations	post-medieval
TQ 67 SW 268	monument	building foundations	post-medieval
TQ 67 SW 272	monument	building foundations	post-medieval
TQ 67 SW 273	monument	building foundations	post-medieval
TQ 67 SW 274	monument	building foundations	post-medieval

SMR number	record type	description	date
TQ 67 SW 277	monument	building foundations	post-medieval
TQ 67 SW 278	monument	building foundations	post-medieval
TQ 67 SW 280	monument	building foundations	post-medieval
TQ 67 SW 282	monument	manufacturing waste pit	post-medieval
TQ 67 SW 376	monument	pits	post-medieval
TQ 67 SW 377	monument	scaffold points	post-medieval
TQ 67 SW 458	monument	ice well	post-medieval
TQ 67 SE 290	monument	terrace gardens	post-medieval
TQ 57 SE 277	monument	north Kent Railway	post-medieval
TQ 67 SW 479	monument	Fawkham Junction and Gravesend Branch Railway	post-medieval
TQ 67 SE 204	monument	air raid shelter	modern
TQ 67 SE 207	monument	air raid warden post	modern
TQ 67 SW 1040	monument	Mariots Wharf	modern
TQ 67 SW 1042	monument	landing stage/steps	modern
TQ 67 SW 1043	monument	landing stage/steps	modern
TQ 67 SW 1044	monument	landing stage/steps	modern
TQ 67 SW 1045	monument	landing stage/steps	modern
TQ 67 SW 1046	monument	jetty	modern
TQ 67 SW 1047	monument	wharf	modern
TQ 67 SW 1048	monument	coal wharf	modern
TQ 67 SW 1049	monument	wharf	modern
TQ 67 SW 1236	monument	air raid shelter	modern
TQ 67 SW 1242	monument	air raid shelter	modern
TQ 67 SW 1240	monument	air raid shelter	modern
TQ 67 SE 1197	monument	air raid wardens post	modern
TQ 67 SW 1257	monument	mortuary and civil defence store	modern
TQ 67 SW 1259	monument	air raid shelter	modern
TQ 67 SW 1260	building	air raid shelter	modern
TQ 67 SE 1190	monument	Ordinance road	modern
TQ 67 SW 1176	building	emergency feeding centre	modern
TQ 67 SW 1178	monument	air raid wardens post	modern
TQ 67 SW 1190	monument	air raid wardens post	modern
TQ 67 SE 1178	monument	police call box	modern
TQ 67 SW 1246	monument	police call box	modern
TQ 67 SW 1306	monument	air raid wardens post	modern
TQ 67 SE 1184	monument	emergency water tank	modern
TQ 67 SW 1307	monument	emergency water tank	modern

SMR number	record type	description	date
TQ 67 SW 1308	monument	emergency water tank	modern
TQ 67 SW 1279	monument	air raid wardens post	modern
TQ 67 SW 1277	monument	air raid wardens post	modern
TQ 67 SE 1230	building	air raid precaution HQ	modern
TQ 67 SW 1296	monument	civil defence control centre	modern
TQ 67 SW 1303	building	cold war civil defence control centre	modern
TQ 67 SE 1145	building	air raid shelter	modern
TQ 67 SW 1331	building	air raid shelter	modern
TQ 67 SW 1336	monument	air raid shelter	modern
TQ 67 SW 1314	building	air raid shelter	modern
TQ 67 SE 1168	building	cold war communications bunker	modern
TQ 67 SW 1351	monument	firewatchers HQ	modern
TQ 67 SW 1323	monument	air raid shelter	modern
TQ 67 SW 1322	monument	air raid shelter	modern
TQ 67 SW 1252	monument	air raid wardens post	modern
TQ 67 SW 1255	monument	air raid shelter	modern
TQ 67 SW 1334	monument	air raid shelter	modern
TQ 67 SW 1251	monument	air raid shelter	modern
TQ 67 SW 1250	monument	air raid shelter	modern
TQ 67 SW 1347	monument	civil defence store	modern
TQ 67 SW 1345	monument	first aid post	modern
TQ 67 SW 1340	monument	national fire service station	modern
TQ 67 SW 1341	monument	auxillary fire service building	modern
TQ 67 SW 1333	monument	fire station	modern
TQ 67 SE 1170	monument	air raid wardens post	modern

## APPENDIX 2: CONTEXT LIST

Context	type	Description	Max length (m)	Max. width (m)	deposit depth (m)	Height (mAOD)
1	Mas	C19th wall	30.00	0.40	0.30m+	20.00-22.00
2	cut	cut for wall [1]	30.00+	0.40m+	0.30m+	20.00-22.00
3	dep	garden soil	30.00	2.00	unknown	20.00-22.00
4	cut	generic number for modern intrusions	N/A	N/A	N/A	20.00-22.00
5	mas	soakaway/well	1.00	1.00	5.00m	20.00-22.00
6	dep	made ground	4.0m+	30.00m+	unknown	20.00-22.00
7	cut	cut for [5]	N/A	N/A	N/A	20.00-22.00
8	Dep	C20th tarmac/made ground	covers area	covers area	0.25	19.450
9	dep	late C18th-19th made ground	covers area	covers area	0.35	19.200
10	dep	cemetery soil	covers area	covers area	3.00m	18.586
11	dep	Redeposited chalk	covers area	covers area	0.1	19.200
12	grave marker	Low grave marker	2.10	0.50	0.10+	18.686
13	dep	buried topsoil	covers area	covers area	0.1	18.686
14	mas	cemetery wall	encloses site	0.40	1.00+	19.000
15	cut	cut for cemetery wall	encloses site	0.70+	1.00+	18.900
16	cut	cut for water-tank?	5.00	2.20	unknown	18.877
17	fill	fill for water tank?	5.00	2.20	unknown	18.877
18	cut	possible grave cuts (general number)	N/A	N/A	N/A	18.532-18.903
19	fill	backfill of cut for cemetery wall [14]	encloses site	0.30	1.00+	18.532-18.903
20	tomb	vaulted brick tomb	2.30	1.90	2.1	18.800
21	cut	cut of grave for Sk1	0.50+	0.50	N/A	See sk levels
22	fill	fill of grave for sk1	0.50+	0.50	N/A	See sk levels
23	cut	cut of grave for Sk2	0.80+	0.50	N/A	See sk levels
24	fill	fill of grave for sk2	0.80+	0.50	N/A	See sk levels
25	cut	cut of grave for Sk3 and 4	0.75+	0.35	N/A	See sk levels

Context	type	Description	Max length (m)	Max. width (m)	deposit depth (m)	Height (mAOD)
26	fill	fill of grave for sk3 and 4	0.75+	0.35	N/A	See sk levels
27	coffin	coffin of Sk3	0.75+	0.35	N/A	See sk levels
28	cut	cut of grave for Sk5	0.50+	0.35	N/A	See sk levels
29	fill	fill of grave for sk5	0.50+	0.35	N/A	See sk levels
30	cut	cut of grave for Sk6	N/A	N/A	N/A	See sk levels
31	fill	fill of grave for sk6	N/A	N/A	N/A	See sk levels
32	coffin	coffin of Sk6	N/A	N/A	N/A	See sk levels
33	cut	cut of grave for Sk7	N/A	N/A	N/A	See sk levels
34	fill	fill of grave for sk7	N/A	N/A	N/A	See sk levels
35	coffin	coffin of sk7	N/A	N/A	N/A	See sk levels
36	cut	cut of grave for Sk8	1.60	0.50	N/A	See sk levels
37	fill	fill of grave for sk8	1.60	0.50	N/A	See sk levels
38	cut	cut of grave for Sk9	0.90	0.50	N/A	See sk levels
39	fill	fill of grave for sk9	0.90	0.50	N/A	See sk levels
40	cut	cut of grave for Sk10	0.80	0.50	N/A	See sk levels
41	fill	fill of grave for sk10	0.80	0.50	N/A	See sk levels
42	cut	cut of grave for Sk11	1.60	0.50	N/A	See sk levels
43	fill	fill of grave for sk11	1.60	0.50	N/A	See sk levels
44	cut	cut of grave for Sk12	1.60	0.50	N/A	See sk levels
45	fill	fill of grave for sk12	1.60	0.50	N/A	See sk levels
46	cut	cut of charnel pit	1.20	0.60	N/A	19.442
47	fill	fill of charnel pit	1.20	0.60	N/A	19.442
48	cut	cut of grave for Sk13	1.90	0.40	N/A	See sk levels
49	fill	fill of grave for sk13	1.90	0.40	N/A	See sk levels
50	coffin	coffin of Sk13	1.90	0.40	N/A	See sk levels

Context	type	Description	Max length (m)	Max. width (m)	deposit depth (m)	Height (mAOD)
51	coffin	coffin of Sk11	1.60	0.50	N/A	See sk levels
52	cut	cut of grave for Sk14	N/A	N/A	N/A	See sk levels
53	fill	fill of grave for sk14	N/A	N/A	N/A	See sk levels
54	cut	cut of grave for Sk15	1.80	0.25+	N/A	See sk levels
55	fill	fill of grave for sk15	1.80	0.25+	N/A	See sk levels
56	cut	cut of grave for Sk16	0.3+	0.3+	N/A	See sk levels
57	fill	fill of grave for sk16	0.3+	0.3+	N/A	See sk levels
58	coffin	coffin of infant, no bones remain	0.60	0.25	N/A	See sk levels
59	cut	cut of grave for [058]	0.60	0.25	N/A	See sk levels
60	fill	fill of grave for [058]	0.60	0.25	N/A	See sk levels
61	dep	Natural	N/A	N/A	N/A	See sk levels
62	cut	cut of grave for Sk17	N/A	N/A	N/A	See sk levels
63	fill	fill of grave for sk17	N/A	N/A	N/A	See sk levels
64	coffin	coffin for Sk17	N/A	N/A	N/A	See sk levels
65	cut	cut of grave for Sk18	1.80	0.50	N/A	See sk levels
66	fill	fill of grave for sk18	1.80	0.50	N/A	See sk levels
67	cut	cut of grave for Sk19	N/A	N/A	N/A	See sk levels
68	fill	fill of grave for sk19	N/A	N/A	N/A	See sk levels
69	cut	cut of grave for Sk20	N/A	N/A	N/A	See sk levels
70	fill	fill of grave for sk20	N/A	N/A	N/A	See sk levels
71	cut	cut of grave for Sk21	1.80	0.60	N/A	See sk levels
72	fill	fill of grave for sk21	1.80	0.60	N/A	See sk levels
73	coffin	coffin of Sk21	1.80	0.60	N/A	See sk levels
74	cut	cut of grave for Sk22	1.80	0.50	N/A	See sk levels

Context	type	Description	Max length (m)	Max. width (m)	deposit depth (m)	Height (mAOD)
75	fill	fill of grave for sk22	1.80	0.50	N/A	See sk levels
76	cut	cut of grave for Sk23	N/A	N/A	N/A	See sk levels
77	fill	fill of grave for sk23	N/A	N/A	N/A	See sk levels
78	cut	cut of grave for Sk24	N/A	N/A	N/A	See sk levels
79	fill	fill of grave for sk24	N/A	N/A	N/A	See sk levels
80	coffin	coffin of sk24	N/A	N/A	N/A	See sk levels
81	cut	cut of grave for Sk25	2.10	0.60	N/A	See sk levels
82	fill	fill of grave for sk25	2.10	0.60	N/A	See sk levels
83	cut	cut of grave for Sk26	0.30+	0.20+	N/A	See sk levels
84	fill	fill of grave for sk26	0.30+	0.20+	N/A	See sk levels
85	cut	cut of grave for Sk27	N/A	N/A	N/A	See sk levels
86	fill	fill of grave for sk27	N/A	N/A	N/A	See sk levels
87	coffin	coffin only stain left	0.60+	0.40	N/A	See sk levels
88	cut	cut of grave for Sk29	0.75+	0.50	N/A	See sk levels
89	fill	fill of grave for sk29	0.75+	0.50	N/A	See sk levels
90	cut	cut of grave for Sk28	N/A	N/A	N/A	See sk levels
91	fill	fill of grave for sk28	N/A	N/A	N/A	See sk levels
92	coffin	coffin of Sk25	1.80	0.50	N/A	See sk levels
93	cut	cut for coffin [87]	0.60+	0.40	N/A	See sk levels
94	fill	fill over coffin [87]	0.60+	0.40	N/A	See sk levels
95	coffin	coffin of sk28	N/A	N/A	N/A	See sk levels
96	cut	cut of grave for Sk30	1.80	0.50	N/A	See sk levels
97	fill	fill of grave for sk30	1.80	0.50	N/A	See sk levels
98	cut	cut of grave for Sk31	1.80	0.50	N/A	See sk levels
99	fill	fill of grave for sk31	1.80	0.50	N/A	See sk

Context	type	Description	Max length (m)	Max. width (m)	deposit depth (m)	Height (mAOD)
						levels
100	coffin	coffin of sk31	1.80	0.50	N/A	See sk levels
101	cut	cut of grave for Sk32	N/A	N/A	N/A	See sk levels
102	fill	fill of grave for sk32	N/A	N/A	N/A	See sk levels
103	coffin	coffin of sk32	1.70	0.40	N/A	See sk levels
104	cut	cut of grave for Sk33	N/A	N/A	N/A	See sk levels
105	fill	fill of grave for sk34	N/A	N/A	N/A	See sk levels
106	coffin	coffin of sk34	1.80	0.50	0.3	See sk levels
107	cut	cut of grave for Sk35	1.80	0.40	N/A	See sk levels
108	fill	fill of grave for sk35	1.80	0.40	N/A	See sk levels
109	cut	cut of grave for Sk36	N/A	N/A	N/A	See sk levels
110	fill	fill of grave for sk36	N/A	N/A	N/A	See sk levels
111	coffin	coffin of sk36	N/A	N/A	N/A	See sk levels
112	cut	cut of grave for Sk37	N/A	N/A	N/A	See sk levels
113	fill	fill of grave for sk37	N/A	N/A	N/A	See sk levels
114	coffin	coffin of sk37	N/A	N/A	N/A	See sk levels
115	cut	cut of grave for Sk38	N/A	N/A	N/A	See sk levels
116	fill	fill of grave for sk38	N/A	N/A	N/A	See sk levels
117	cut	cut of grave for Sk39	0.60+	0.30	N/A	See sk levels
118	fill	fill of grave for sk39	0.60+	0.30	N/A	See sk levels
119	cut	cut of grave for Sk40	N/A	N/A	N/A	See sk levels
120	fill	fill of grave for sk40	N/A	N/A	N/A	See sk levels
121	coffin	coffin of SK40	N/A	N/A	N/A	See sk levels
122	cut	cut of grave for Sk41	1.20	0.50	N/A	See sk levels
123	fill	fill of grave for sk41	1.20	0.50	N/A	See sk levels

Context	type	Description	Max length (m)	Max. width (m)	deposit depth (m)	Height (mAOD)
124	cut	cut of grave for Sk42	N/A	N/A	N/A	See sk levels
125	fill	fill of grave for sk42	N/A	N/A	N/A	See sk levels
126	cut	cut of grave for Sk43	0.7+	0.50	N/A	See sk levels
127	fill	fill of grave for sk43	0.7+	0.50	N/A	See sk levels
128	cut	cut of grave for Sk44	0.70+	0.50	N/A	See sk levels
129	fill	fill of grave for sk44	0.70+	0.50	N/A	See sk levels
130	cut	cut of grave for Sk47	2.00	0.70	N/A	See sk levels
131	fill	fill of grave for sk47	2.00	0.70	N/A	See sk levels
132	cut	cut of grave for Sk46	1.80	0.50	N/A	See sk levels
133	fill	fill of grave for sk46	1.80	0.50	N/A	See sk levels
134	cut	cut of grave for Sk48	N/A	N/A	N/A	See sk levels
135	fill	fill of grave for sk48	N/A	N/A	N/A	See sk levels
136	cut	cut of grave for Sk49	N/A	N/A	N/A	See sk levels
137	fill	fill of grave for sk49	N/A	N/A	N/A	See sk levels
138	cut	cut of grave for Sk51	N/A	N/A	N/A	See sk levels
139	fill	fill of grave for sk51	N/A	N/A	N/A	See sk levels
140	cut	cut of grave for Sk52	N/A	N/A	N/A	See sk levels
141	fill	fill of grave for sk52	N/A	N/A	N/A	See sk levels
142	cut	cut of grave for Sk53	N/A	N/A	N/A	See sk levels
143	fill	fill of grave for sk53	N/A	N/A	N/A	See sk levels
144	cut	cut of grave for Sk55	N/A	N/A	N/A	See sk levels
145	fill	fill of grave for sk55	N/A	N/A	N/A	See sk levels
146	cut	cut of grave for Sk56	1.30+	0.40	N/A	See sk levels
147	fill	fill of grave for sk56	1.30+	0.40	N/A	See sk levels
148	cut	cut of grave for	N/A	N/A	N/A	See sk

Context	type	Description	Max length (m)	Max. width (m)	deposit depth (m)	Height (mAOD)
		Sk54				levels
149	fill	fill of grave for sk54	N/A	N/A	N/A	See sk levels
150	cut	cut of grave for Sk57	N/A	N/A	N/A	See sk levels
151	fill	fill of grave for sk57	N/A	N/A	N/A	See sk levels
152	cut	cut of grave for Sk58	N/A	N/A	N/A	See sk levels
153	fill	fill of grave for sk58	N/A	N/A	N/A	See sk levels
154	cut	cut of grave stack for Sk60 and sk61	1.40+	0.50	N/A	See sk levels
155	cut	cut of grave for sk62	1.50	0.50	N/A	See sk levels
156	fill	fill of grave for sk62	1.50	0.50	N/A	See sk levels
157	cut	cut of grave for sk63	N/A	N/A	N/A	See sk levels
158	fill	fill of grave for sk63	N/A	N/A	N/A	See sk levels
159	cut	cut of stack of sk64 and sk65	0.80+	0.50	N/A	See sk levels
160	coffin	coffin only body decayed	1.20	0.50	N/A	See sk levels
161	cut	cut of grave for sk67	1.50	0.50	N/A	See sk levels
162	fill	fill of grave for sk67	1.50	0.50	N/A	See sk levels
163	cut	cut of grave for sk68	1.70+	0.50	N/A	See sk levels
164	fill	fill of grave for sk68	1.70+	0.50	N/A	See sk levels
165	coffin	coffin of sk069	1.80	0.50	N/A	See sk levels
166	cut	cut of grave for sk71	1.70+	0.50	N/A	See sk levels
167	fill	fill of grave for sk71	1.70+	0.50	N/A	See sk levels
168	cut	cut of grave for sk72 and sk69	1.80	0.50	N/A	See sk levels
169	fill	fill of grave for sk72 and sk69	1.80	0.50	N/A	See sk levels
170	cut	cut of grave containing cannon balls	0.80	0.20	0.15	See sk levels

Context	type	Description	Max length (m)	Max. width (m)	deposit depth (m)	Height (mAOD)
171	fill	fill of grave containing cannon balls	0.80	0.20	0.15	See sk levels
172	find/deposit	Cannonballs	0.80	0.20	0.15	19.452
173	cut	cut of grave for sk73	1.70	0.50	N/A	See sk levels
174	fill	fill of grave for sk73	1.70	0.50	N/A	See sk levels
175	coffin	coffin of sk73	1.70	0.50	N/A	See sk levels
176	cut	cut of grave for sk74 and sk75	N/A	N/A	N/A	See sk levels
177	fill	fill of grave for sk74 and sk75	N/A	N/A	N/A	See sk levels
178	cut	cut of grave for sk76	1.70	0.50	N/A	See sk levels
179	fill	fill of grave for sk76	1.70	0.50	N/A	See sk levels
180	cut	cut of grave for sk77	1.70	0.50	N/A	See sk levels
181	fill	fill of grave for sk77	1.70	0.50	N/A	See sk levels
182	cut	cut of grave for sk78 and sk80	1.20+	0.50	N/A	See sk levels
183	fill	fill of grave for sk78 and sk80	1.20+	0.50	N/A	See sk levels
184	cut	cut of grave for sk79	N/A	N/A	N/A	See sk levels
185	fill	fill of grave for sk79	N/A	N/A	N/A	See sk levels
186	cut	cut of grave for sk81	0.60	0.50	N/A	See sk levels
187	fill	fill of grave for sk81	0.60	0.50	N/A	See sk levels
188	cut	cut of grave for sk83 and sk84	1.80	0.50	N/A	See sk levels
189	fill	fill of grave for sk83 and sk84	1.80	0.50	N/A	See sk levels
190	cut	cut of grave for sk87	N/A	N/A	N/A	See sk levels
191	fill	fill of grave for sk87	N/A	N/A	N/A	See sk levels
192	cut	cut of grave for sk88	N/A	N/A	N/A	See sk levels
193	fill	fill of grave for sk88	N/A	N/A	N/A	See sk levels

Context	type	Description	Max length (m)	Max. width (m)	deposit depth (m)	Height (mAOD)
194	fill	fill of cut [154]	N/A	N/A	N/A	See sk levels
195	fill	fill of stack [159]	N/A	N/A	N/A	See sk levels
196	dep	Hill-wash deposit	5.0+	2.0+	0.5	18.712
197	cut	cut of grave for sk89	1.80	0.50	N/A	See sk levels
198	fill	fill of grave for sk89	1.80	0.50	N/A	See sk levels
199	cut	cut of grave for sk90	N/A	N/A	N/A	See sk levels
200	fill	fill of grave for sk90	N/A	N/A	N/A	See sk levels
201	cut	cut of grave for sk91	N/A	N/A	N/A	See sk levels
202	fill	fill of grave for sk91	N/A	N/A	N/A	See sk levels
203	deposit	Hill-wash	Tr.	Tr.	2.50+	19.00

### **Appendix 3: THE HUMAN REMAINS (Figure 5)**

#### **Introduction**

A total of 91 articulated burials were recorded during the works. Of the 91 burials encountered, 24 individuals were 100 percent excavated, the remainder of individuals lay only partially within the excavation area or had been truncated by later burials (Table 1). Adult, juvenile and infant remains were all represented. The adult population showed a predominance of male individuals. Preservation of the skeletal remains was excellent, permitting a number of pathological conditions to be identified. A small number of associated artefacts were also recovered along with a quantity of disarticulated human remains. The disarticulated human remains included adult, juvenile, and infant remains. The minimum number of individuals represented by the disarticulated material was not calculated.

<b>Percentage of burial excavated</b>	<b>Number of Burials</b>
0-25	25
26-50	15
51-75	10
76-100	41 (of which 24 at 100%)
<b>Total of burials</b>	<b>91</b>

Table 1: Number of whole and partial burials excavated.

#### **Estimation of Age at Death**

The age of individuals was assessed using epiphyseal fusion for distinction between adult and juvenile; for distinction of the adult age groups, general degenerative changes were used; where preservation allowed, some ages were assessed using the auricular surface (following Bukista and Ubelaker 1994 guidelines). Due to the inaccuracy of these aging techniques age was only divided into: 'adult' where age could not be accurately determined; 'younger aged adult' (18-25 years), 'middle aged adult' (25-45years), and 'older aged adult' (45+ years). Children, infants and adolescents were aged using stages of epiphyseal fusion, dental eruption and long bone length in infants (Scheuer and Black 2000). Immature individuals were grouped into age categories: foetus (3 months until birth); infant (birth to 12 months); early childhood (1 to 6 years); late childhood (7 to 12 years); adolescent (13 to 17 years). Table 2 summarises the age at death of the excavated individuals.

<b>Age group</b>	<b>Number of burials</b>
Older aged adult	15
Middle Aged Adult	9
younger aged adult	14
Adult	36
adolescent	9
late childhood	1
early childhood	3
infant	2
Foetus	2
<b>Total</b>	<b>91</b>

Table 2: Number of adult, juvenile and infant remains recorded

The cemetery population gives an indication of mortality with all ages represented within the assemblage. Nearly 19% of the individuals had not achieved adulthood.

### Estimation of Sex

The sex of adult individuals was assessed using morphological features of the skull and pelvis (following Bukistra and Ubelaker 1994), where long bones were highly robust or gracile and no other diagnostic elements were available, assessments of probably male and probably female were given. Sex cannot be ascertained in the field for children and younger adolescents, sex was only identified in adolescents with pronounced sexually dimorphic skeletal markers. Table 3 gives the number, age and sex of remains.

Age\Sex	unknown	Female	Female?	Male	Male?	Total
Older aged adult	1	1	2	7	4	15
Middle Aged Adult	0	0	2	5	2	9
younger aged adult	2	4	2	5	1	14
Adult	19	2	4	4	7	36
adolescent	5	0	1	2	1	9
<b>Total</b>	<b>35</b>	<b>7</b>	<b>11</b>	<b>23</b>	<b>15</b>	<b>91</b>

Table 3: Age and sex of remains.

Just over two thirds of individuals, where sex could be identified, were male or probably male with just under one third being female. It may be speculated that this proportion is representative of the population of Gravesend at the time the cemetery was in use was, being dominated by men involved in work aboard sailing ships and associated with the docks.

### Skeletal Pathology

Preservation of the human remains was mostly excellent, making onsite identification of some pathological conditions possible, a summary of pathological conditions is given in Table 4 with detailed descriptions of each individual given in Appendix 4. Oral hygiene was very poor in almost all cases, with dental caries and abscesses identified in 23 individuals (45% of observable cases), and ante-mortem tooth loss being identified in 27 individuals (60% of observable cases). Dental calculus and periodontal disease were also common and influenced ante-mortem tooth loss.

Pathology	Number of cases	Potential Number observable	Prevalence rate %
Dental Calculus	21	46	46
Caries and dental abscess	23	45	51
Periodontal disease	14	45	32
Antemortem Tooth loss	27	45	60
Clay pipe wear facets	6	43	14
Spinal Kyphosis	1	N/A	N/A

Pathology	Number of cases	Potential Number observable	Prevalence rate %
Tuberculosis	1	N/A	N/A
non specific infection	3	N/A	N/A
Cribra Orbitalia	2	45	4
Linear Enamel Hypoplasia	6	45	13
Non-metric traits	11	50	22
Articular facet on acromion	4	46	9
Schmorls Nodes	3	43	7
Degenerative joint disease/ Osteoarthritis	13	44	29
Ossified cartilage	7	44	16
Trauma/ fractures	14	48	29

Table 4: Summary of pathology observed with prevalence rate where applicable.

The poor state of oral health of the individuals is typical of a post-medieval assemblage with rates of caries being as high as 86% in some urban centres (Roberts and Cox 2003, 326). These figures reflect both the lack of dental hygiene and the cariogenic diet of the time associated with an increase in the availability of refined sugars.

Degenerative joint disease and osteoarthritis were identified in 13 individuals. The majority of individuals affected by joint degeneration were male (12:1 male to female), the shoulder and arm joints were most severely affected in four of the individuals with the remainder being affected in the vertebrae and, in one instance, the hip joint. Joint disease of the elbow is thought to be a good indicator of occupational stress (Ortner 1968) severe osteoarthritis of the elbow was observed in SK75, an older aged adult male, suggesting a possible occupation involving frequent stress to the elbow. Also observed were four examples, all male, of an extra articular facet on acromion; this has been suggested, in some instances, to be related to occupation (Miles 1996), though age related degeneration of the joint cannot be ruled out.

Evidence of tobacco smoking or chewing was identified in 8 out of 23 present sets of dentition. This was identified by characteristic black staining to the lingual side of teeth and clay pipe wear facets. In some individuals, ante-mortem tooth loss prevented identification of evidence of smoking and it is likely that, in some cases, severe pipe wear facets may have contributed to tooth loss so the actual number of smokers within the population is likely to be far higher.

The identification of infectious disease within a skeletal population is problematic, many individuals having died as a result of the disease before any skeletal involvement takes place and some diseases having little or no distinctive skeletal markers. A single individual, 13 to 16 year old adolescent, SK55, seems to have suffered from tuberculosis and this appears to be a likely cause of death. The condition was identified by destructive lesions in the thoracic vertebrae. No other infectious diseases were identified in the assemblage, though again, this is likely to be an underrepresentation due to lack of skeletal markers of disease.

Iron deficiency anaemia and some other diseases are identified by the presence of *cribra orbitalia* in the upper eye orbit. This condition was identified in 2 of the 45

observable examples, including an older aged adult male. Linear enamel hypoplasia (LEH) are formed during childhood, whilst the teeth are developing and are caused by a period of arrested growth, often attributed to periods of stress or disease. Six cases of LEH were observed within the assemblage.

A severe spinal kyphosis was observed in middle aged adult male, SK47 (Fig. 7). This condition would have resulted in a noticeable hunched appearance to the back during life.

A number of healed fractures were observed, most commonly to the humerus with two left humerus breaks (SK8 probable female and SK37 young adult male) and one right humeral break (SK68 young adult male). Skeletal reaction to ligament damage around the left humeral head was observed on SK29 (older aged adult male). A healed break to the right radius was observed in SK43 (older adult male) and an injury to the middle proximal and medial finger had fused the two together in an adult female (SK52). Adult, SK10, had a break to the left fibula. Probable healed broken ribs were observed in SK13 (older adult male) and SK 58 (middle aged adult male). Healed fractures to the nasal spine were also observed in two individuals, one male (SK71) and one female (SK 11).

### **Stature and Robusticity**

No attempt was made to calculate stature of individuals onsite due to time constraints. Observation during excavation did not indicate any individuals of significantly greater or lesser stature than the modern day population. General observations were made regarding the development of musculature on site. Very pronounced ligament and muscle attachments, thought to relate to increased musculature, were observed in 6 adult males.

### **Burial alignment and position**

Most of the burials were aligned west to east with the head to the west. However some slight variation was identified with some individuals more in a south-west to north-east alignment. Burials were arranged approximately in rows and a number of burial stacks containing multiple individuals were identified. Where position could be determined, the majority of individuals were in a supine (lying on the back) position with legs extended and arms by the sides. In the burial stacks, a variety of uneven and unusually angled burials were encountered due to post depositional collapse of lower coffins within the stack. A single prone (face down) burial of a middle aged adult male (SK58) was encountered (Fig. 7). No evidence was present for a coffin and it is likely the individual was wrapped in a winding sheet and that the prone position occurred accidentally during lowering into the grave rather than being intentionally positioned in this way. One older aged adult male (SK75) was buried with the left arm flexed across the body, though this appeared to be due to immobilisation of the joint caused by severe osteoarthritis.

### **Coffin Design and Furniture**

The majority of individuals, including infants and children, had been interred in wooden coffins. Coffin plates were present in 15 burials; these plates were mostly highly corroded and made of iron (with corrosion products of the iron appearing to contribute to the destruction of bone). A single example retained some visible detail with an urn embossed at the top with black lacquered finish and yellow writing:

'ASP.... 1831(?) ...Year'. The coffin belonged to an adolescent, probably male (SK69, Fig. 7). Decorative rivets and handles were present in some form on most coffins. These were mostly iron and broadly similar in design with the exception of the burial of SK46, which had handles of a larger more robust design. Many coffins were only identified through decayed wood and corroded iron nails. A single juvenile burial (SK24) had probable animal hair padding within the coffin.

### **Associated Artefacts**

All artefacts associated with individual burials were reinterred with the individual as part of the formal burial.

Dentures were identified in the dentition of SK46, an older aged individual, probably male. The individual did not have as pronounced musculature as many of the other skeletons and did not have any evidence for joint disease, suggesting this individual may not have been employed daily in physical labour. This individual must have been quite wealthy in order to afford relatively expensive dentistry. The dentures, designed to replace the absent maxillary molars, were wired by spring into the maxilla; the shaped teeth appear to be shaped animal tooth or hardwood and the two portions were joined by a metal wire which was uncorroded (Fig. 6).

A line of cannonballs were identified below the lower legs of SK70, an adult of unknown sex; although they cannot be directly assigned to that individual it seems likely that they formed part of the burial (see discussion 7.2.1).

A single bone button was recovered from the pelvis of probable male SK86 (Fig. 7), and a small number of wooden buttons and a single plain thin copper alloy hooped earring were found during excavation of SK82. The probable earring was found next to the head of the middle aged adult, probably male.

### **Summary**

The skeletal assemblage is quite typical of a post-medieval cemetery; however there was a high ratio of males to females suggesting that the population was predominantly male. In particular, a good number of the individuals appear to have been engaged in physical activity involving the shoulders. It is likely that this is connected to maritime activity. The assemblage also includes an individual of wealth, buried with a set of dentures which would have been costly at the time of manufacture. Oral hygiene amongst the sample was poor with ante-mortem tooth loss, caries, periodontal disease and tooth wear associated with pipe smoking all being common. Burials were almost entirely within coffins buried east to west and the cemetery appeared to have operated a well organised system of stacked burials.

#### APPENDIX 4: BURIAL REGISTER

Burial	number	Coffin details	Age category	Age	Sex	Pathology	% of burial excavated and details
SK	1	nails only	Adult	adult	?	none observed	15. lower legs only.
SK	2	present, decayed	Middle Aged Adult	30-40+	M	marked muscle insertions on the L+R humeral head, extra bone growth on the 1st left metacarpal at the distal end. Flared vertebral discs, vertebral DJD. Severe calculus with reduction of alveolar bone, slight attrition. Maxillary incisors left and right have clay pipe wear facets.	50. upper body and pelvis only
SK	3	(027) nails and decorative rivets present	Adult	Adult	?	none observed	20. legs only.
SK	4	N/A	early childhood	<3	?	No pathology. Skeleton appears to have been redeposited in backfill of grave of SK003	20. Disarticulated
SK	5	?	late childhood	7-8	?	No pathology observed.	20. legs only.

Burial	number	Coffin details	Age category	Age	Sex	Pathology	% of burial excavated and details
SK	6	decayed nails remain	Older aged adult	Older adult	M	Well developed muscular attachments. Ossification of cartilage on right side of manubrium and costal and throat cartilages. Right first rib has flaring of joint surface. Schmorls nodes in mid thoracic with lipping of anterior thoracic and lumbar vertebrae. Extra articular facet on right acromion. 5th lumbar fused to sacrum. Very pronounced right side musculature. Ante-mortem tooth loss of most teeth, severe tooth decay of remaining teeth with tobacco staining, advanced caries in maxilla and mandible teeth with periodontal disease upper and lower.	80. upper body and pelvis present.
SK	7	decayed nails remain	infant	<1yr	?	circa 40 weeks in utero still born. Femur 88mm tibia 70mm	100
SK	8	uncertain	younger aged adult	younger adult	F?	Malaligned healed fracture of medial left humerus. No DJD or caries and minimal attrition.	80
SK	9	decayed nails remain	adult	adult	?	No pathology observed.	20. legs only.
SK	10	uncertain	adult	adult	?	fracture to distal end of left fibula, healed with extra bone growth around the articulating surfaces of distal left tibia. Double anterior calcaneal articular facets.	30. legs only.

Burial	number	Coffin details	Age category	Age	Sex	Pathology	% of burial excavated and details
SK	11	decayed remain    nails	younger aged adult	young adult	F	partially truncated by Sk008. Gracile female. AM tooth loss and severe calculus with periodontal disease, adult with 3rd maxillary molars congenitally absent. AM tooth loss right 2,3,4,5 and 7.	95
SK	12	decayed remain    nails	Middle Aged Adult	30-40	M	Truncated by charnel pit. Minimal dental attrition and no caries. Moderate calculus and slight alveolar resorption, two clay pipe wear facets between 2nd incisor and canine on both sides. Linear enamel hypoplasia on incisors trauma/growth arrest at c.12years. No DJD.	30. Upper body present
SK	13	Handles and nails present	Older aged adult	Older adult	M	3rd molars congenitally absent with the exception of left maxillary 3rd molar. Lower right 6th has buccal abscess at root. Severe caries and calculus with slight tooth wear. Caries in upper 1 and 2 left and right and upper left 6 and 8 with moderate tooth wear. Ossification of thyroid cartilage. Possible healed fracture to right 6th rib. Mid thoracic Schmorl's nodes and lower thoracic ossification of the <i>ligamentum flavum</i> .	95 right arm truncated.
SK	14	uncertain	infant	<1yr	?	Premature 36-38 weeks gestation. Humeral diaphysis 60mm femur 66mm	60

Burial	number	Coffin details	Age category	Age	Sex	Pathology	% of burial excavated and details
SK	15	present, decayed	Adult	Adult	M	Marked muscle insertions on left femur with new bone growth on proximal shaft from the head, possibly activity related change. New bone growth on anterior tibial shafts, some new bone growth around acetabulum. Flattening and splaying of vertebral discs with osteophytes, DJD. Slight periodontal disease. Ante-mortem tooth loss of maxillary left M1-M3 and right M1-M3. Abscess on mandibular left M1. Bone loss at mandibular right M1.	80. Part of right side left in situ.
SK	16	uncertain	Adult	adult	?	No pathology observed.	10. Feet only
SK	17	nails and decorative rivets remain	Adult	Adult	M	Both tibia have jagged bone growth at muscle attachments, muscle damage? Radius and ulna muscle attachments very pronounced. Double anterior calcaneal facets. Ante-mortem tooth loss Maxilla Right 5, 6, 8 and left 6. Mandibular ante-mortem tooth loss right 6 and Left 4 and 8. Caries, maxilla Right 2 and left 2, 3, and 7. Severe calculus on mandibular teeth.	100
SK	18	present, decayed	Adult	Adult	m?	Slight calculus with slight attrition Mandibular left M1 severe caries, root only remains also maxillary right premolar 1 severe caries, root only remains and upper right premolar 2 lost ante-mortem with abscess. Possible pipe smoking attrition upper left canine and m1.	100
SK	19	uncertain	younger aged adult	Young adult	?	Fusion lines still visible at top of tibia.	20 lower legs only

Burial	number	Coffin details	Age category	Age	Sex	Pathology	% of burial excavated and details
SK	20	uncertain	Adult	adult	?	no pathology	10, left arm only, remainder truncated.
SK	21	coffin plate (decayed) and nails remain.	Adult	adult	F?	Severe calculus on molars and all lower teeth. Light attrition with periodontal disease. Upper right 2nd molar lost ante-mortem. Caries in upper left 1st molar.	100. Coffin plate has decayed mid thoracic region
SK	22	uncertain	Adult	adult	?	No pathology observed.	5. right lower leg only
SK	23	uncertain	Adult	adult	?	No pathology observed.	5. lower legs only
SK	24	Wooden coffin with possible hair lining, nails also present	early childhood	juvenile	?	aged 1.5-2years. 2nd molar just erupting, humeral diaphysis 120mm.	100
SK	25	present, decayed	adolescent	14-20	m	humeral head just fused, unfused distal radius. Severe caries on lower left M2 (buccal) and lower right M2. Linear enamel hypoplasia on base of lower left canine and premolar 1.	100
SK	26	uncertain	Adult	adult	?	No pathology observed.	20. Lower legs only.
SK	27	uncertain	Adult	adult	?	No pathology observed.	20. Lower legs only.
SK	28	uncertain	Adult	adult	m?	No pathology observed.	20. left arm and ribs only.

Burial	number	Coffin details	Age category	Age	Sex	Pathology	% of burial excavated and details
SK	29	present, decayed	Older aged adult	40+adult	M	Possible ligament damage near left humeral head. Linear enamel hypoplasia on upper left incisor 1, pipe wear facet on upper right incisor 2 and canine. Root caries upper left canine with abscess. Ante-mortem tooth loss upper left PM2, M1-3 and upper right PM1 and 2, M2 and 3. Periodontal disease. Mandible: ante-mortem tooth loss lower left m1 and m2, lower right pm2-m3, severe caries to lower left pm2, and pm1.	40. upper body only.
SK	30	present, decayed	younger aged adult	18-21	M?	Lower 3rd molars erupting. Slight calculus with pronounced attrition on left 1st incisors and left 1st molars. On buccal side. Linear enamel hypoplasia on lower canines. Upper right M1 chipped crown. Pitted depressions on upper canines. Unfused clavicle and femoral head, fusion line remains.	100
SK	31	had coffin plate, decayed	adolescent	15-20	?	No pathology observed.	100. Badly decayed from coffin plate
SK	32	had coffin plate, decayed	younger aged adult	young adult	m	upper 3rd molar congenitally absent on the right and erupted on the left. No tooth-wear caries or calculus. Mandibular calculus and moderate tooth-wear.	100
SK	33	had coffin plate, decayed	Adult	adult	?	No pathology observed.	100. Though upper body decayed due to coffin plate.

Burial	number	Coffin details	Age category	Age	Sex	Pathology	% of burial excavated and details
SK	34	present, decayed	Older aged adult	middle- older aged adult	M	DJD of medial right clavicle. Ossified costal cartilage with Osteoarthritis of rib joint of cervical vertebrae. DJD of vertebrae and lipping. Mild Cribra orbitalia. Teres defect deepening of the humeral muscle attachments. Maxilla AM tooth-loss Left 4 and Right 3. Ante-mortem tooth-loss mandibular Left and right 4, 5, 6, 7, 8 Pipe smoking facet on the right. Buccal and lingual calculus.	100
SK	35	present, decayed	adolescent	16-18	M	3rd molars erupting. Clavicle unfused. Humeral head just fusing, radius unfused, femoral head also unfused. Upper left premolar 2 has severe caries to the root, upper right premolar 1 lost due to caries with root only remaining. . Abscess at root apex of 3rd molar. Upper right premolar 1 or 2 has proximal caries on the distal face.	100
SK	36	coffin handles present with decorative handle plates	Older aged adult	older adult	M	Ante-mortem tooth loss Lower 5-8 on both sides with severe lingual calculus and moderate tooth wear. Right and left side deepened cortical defect of the attachment of costo-clavicular ligament. Extra articular surface on acromion left and right with septal aperture of left and right humerus.	95. maxilla absent.

Burial	number	Coffin details	Age category	Age	Sex	Pathology	% of burial excavated and details
SK	37	decorative rivets and nails remain	younger aged adult	young adult	m	Activity related tooth-wear on upper incisor 1 and 2, slight to moderate calculus and periodontal disease. Upper left M1 severe caries next to ante-mortem tooth loss of upper left M2 and abscess into alveolar crest. Ante-mortem tooth loss Lower right M1. Wear facets on the buccal side of lower incisor 1 and 2. Ossification of the ligamentum flavum. Left humeral head has possible healed fracture .	90. Right arm truncated.
SK	38	present, decayed	Adult	adult	?	none observed	30. Lower legs only
SK	39	present, decayed	Adult	adult	?	none observed	30. Lower legs only
SK	40	present, decayed	Adult	adult	?	none observed	30. Lower legs only
SK	41	present, decayed	Older aged adult	Older adult	F?	Upper incisor 1 and 2 and upper left and right premolar2 and upper right m1 ante-mortem tooth loss. Upper left premolar 1 caries to root, upper right m1 severe caries to root. Upper right and left m2 and m3 ante-mortem tooth loss, periodontal disease and heavy calculus.	25. Cranium and left humerus only
SK	42	present, decayed	Adult	adult	?	No pathology observed.	10. feet only.

Burial	number	Coffin details	Age category	Age	Sex	Pathology	% of burial excavated and details
SK	43	coffin plate (decayed) and nails remain.	Older aged adult	Older aged	m?	Left mandible articular surface had DJD, ante-mortem tooth-loss of all but 1 and 2 left and right and stump of r3. Slight DJD of medial clavicle. DJD of vertebrae with lipping at edges. Ossification of the ligamentum flavum and severe lipping of thoracic and cervical vertebrae. DJD of left elbow. Malaligned Healed fracture to the right radius.	60. Upper body only. Substantial 1 inch Copper alloy pin with hole at head present by shoulder.
SK	44	Some decayed copper alloy coffin fittings present	adolescent	16-18	F?	M3 unerupted, little dental attrition and slight calculus on molars. Linear enamel Hypoplasia on upper left 1st incisor, upper right incisor 1 ante-mortem tooth loss. Cribra orbitalia. Humeral heads unfused.	40. Upper body only.
SK	45	present, decayed	adolescent	15-18	?	Mandibular 6's ante-mortem tooth loss. 3rd molars just erupting. Humeral head and distal ends are unfused.	60. Upper body only.
SK	46	present, decayed. Larger coffin fittings than other coffins.	Older aged adult	older adult	m?	Adult with Dentures replacing mandibular molars, wired into maxilla. All but lower left incisor 1 missing ante mortem. Left femur possible periostitis may be infection. No DJD of vertebrae, possibly not employed in manual tasks/ wealthy?	80. Some bone disintegration.

Burial	number	Coffin details	Age category	Age	Sex	Pathology	% of burial excavated and details
SK	47	coffin plate (decayed) and nails remain.	Middle Aged Adult	middle aged?	M	Thoracic Kyphosis, T2-6 fused anterior and posterior with utter collapse of the vertebral bodies and candle wax type fusion. Would have had pronounced stoop. Very pronounced nasal spine. Maxilla right 8 and 4 carries, R3 caries and very severe wear. moderate tooth wear to incisors. Left 4 and 5 root only, right 8 caries. Mandible, Ante-mortem tooth loss 6 and 7 left and right, right 8 . Caries left 8. Slight calculus. Extra articular facet on left acromion. Ossification of the ligamentum flavum. Retained metopic suture.	100
SK	48	present, decayed	adolescent	juvenile 16-20	?	no pathology observed, illiac crest just fusing, tibial proximal fusion line still visible.	20. femur, pelvis and hands only.
SK	49	present, decayed	Adult	Adult	m?	Marked muscle insertions on humerus. DJD on lumbar and thoracic vertebrae.	80. Cranium and feet absent
SK	50	uncertain	Adult	adult	m?	no pathology observed	10. Part of pelvis and right leg only
SK	51	uncertain	Adult	adult	f?	no pathology observed	80. Cranium and left shoulder absent.
SK	52	decayed, handles and nails only	Adult	Adult	F	right medial and 3rd phalanx of middle finger fused in flexed position. Possible infection to proxima anterior vertebral surface.	70. Mid thoracic and below only present.

Burial	number	Coffin details	Age category	Age	Sex	Pathology	% of burial excavated and details
SK	53	present, decayed	younger aged adult	juvenile 3-5	?	Deciduous dentition complete, no adult teeth present.	30. Bone decayed.
SK	54	uncertain	Foetus	<1	?	41-45weeks gestation,. One rib bifurcated/ fused, possible growth defect/pathology.	100
SK	55	present, decayed	adolescent	13-16	?	Juvenile with unfused epiphyses. Unerupted 3rd molars. 2 ribs with pathology and destructive lesions of cervical vertebrae with anterior destruction possible Tuberculosis. Upper left and right M1 severe caries and lower right M1 also caries. Abscess on upper left M1 root.	100
SK	56	coffin nails and handles present	younger aged adult	young adult	M	No pathology observed.	40. Lower body only
SK	57	present, decayed	Adult	adult	?	No pathology observed.	20 lower legs only
SK	58	none observed	Middle Aged Adult	middle aged adult	M	PRONE burial. Possible healed fracture on left rib. Lower left M1 and M2 ante-mortem tooth loss with resorbed alveolar bone and granular abscess. Lower premolar 2 caries. Lower right M3 ante-mortem tooth loss. Slight calculus. Upper right M1 and PM2 severe caries with lingual abscess. Upper right M1 caries on mesial occlusal surface.	100
SK	59	present, decayed	Foetus	infant	?	38-42 weeks gestation. Premature	100

Burial	number	Coffin details	Age category	Age	Sex	Pathology	% of burial excavated and details
SK	60	present, decayed	Adult	adult	M	No pathology observed.	10. Right leg only
SK	61	coffin studs and nails present	younger aged adult	young adult	F	No pathology observed.	60, lower body only
SK	62	present, decayed	Middle Aged Adult	middle aged adult	m	2 left ribs fused. Mandible: Left p1, right I2 and canines ante-mortem tooth loss. Periodontal disease. Lower right 2nd incisor abscess. Maxilla right m1-3 and left m2-3 present, all else ante-mortem tooth loss.	100
SK	63	present, decayed	Adult	adult	m	Lipping and schmorls nodes on lumbar vertebrae and DJD of all vertebrae. Osteophyte growth on sacrum and femoral head.	90. Cranium absent
SK	64	decayed nails remain	Adult	Adult	F?	No pathology observed.	20. Lower legs only.
SK	65	present, decayed	Adult	Adult	M?	robust bone structure. Plaque formation of femoral head.	20. legs only.
SK	66	uncertain	Adult	adult	?	No pathology observed.	20. Right side and mid section only.
SK	67	present, decayed	Older aged adult	Older aged	M?	Ante-mortem tooth loss of all mandibular teeth except lower right 2nd incisor.	95. feet absent, poor preservation

Burial	number	Coffin details	Age category	Age	Sex	Pathology	% of burial excavated and details
SK	68	present, decayed	younger aged adult	young adult	M	Very large muscle insertions on right humerus. Malaligned healed fracture of right humerus, irregular callus formation, probable ligament damage. Slight calculus and slight periodontal disease. Slight caries on both M1 occlusal surfaces. Pipe wear facet on upper right 2nd incisor and canine.	95. feet absent
SK	69	Handles and coffin plate remain. Partially legible urn embossed at top, black laquered finish with yellow writing 'ASP.... 1871? ...Year' rest illegible and corroded	adolescent	16-20	m?	fusion line still visible on femoral head. Double anterior calcaneal facets. Sacrum not fully fused. Moderate tooth wear and moderate calculus, 3rd molars present.	100. Bone poorly preserved due to coffin plate.
SK	70	uncertain	Adult	adult	?	truncated by pit of disarticulated bone. Double anterior calcaneal facets. Line of cannonballs below burial may be associated?	20, legs only

Burial	number	Coffin details	Age category	Age	Sex	Pathology	% of burial excavated and details
SK	71	present, decayed	Middle Aged Adult	middle aged adult	m?	Ante-mortem possible broken nose. Moderate tooth wear including 3rd molars. Maxilla left m1 ante-mortem tooth loss. Upper right p2 severe caries and abscess in alveolar bone. Slight calculus. Ante-mortem tooth loss lower left m1.	90 feet only missing
SK	72	present, decayed	younger aged adult	young adult	f	Ante-mortem tooth loss, maxilla right 7,8 left 5,6,7,8caries right 4 anterior. Mandible, severe calculus lingual and buccal AM tooth loss Right and left 7 and 8, severe periodontal disease, minimal tooth-wear.	100
SK	73	coffin plate (decayed) and nails remain.	Older aged adult	older aged	F?	mandibular teeth lost ante-mortem.	100. poorly preserved.
SK	74	present, decayed	Older aged adult	older aged	F	Joint infection of left hip, DJD of vertebrae.	50. lower half only.

Burial	number	Coffin details	Age category	Age	Sex	Pathology	% of burial excavated and details
SK	75	present, decayed	Older aged adult	Older adult	M	Severe osteoarthritis of left shoulder, eburnation of humeral head and osteophytes at margins, distal clavicle also eburnation and deepened costo-clavicular muscle attachment, severe eburnation of scapula articulations including extra articular facet on acromion with excessive extra bone growth at margins. Distal humerus also has severe eburnation and extra bone growth, likewise proximal articulations of the radius and ulna also OA on hands with eburnation and lipping. Similar degeneration on the right side. Left arm crossed over the body due to immobilisation of the joint. Ossified thyroid cartilage. OA of rib articulation points. Severe OA of all vertebrae. Tooth wear pattern suggests wear in overbite pattern or clenching of material between upper and lower jaw. Maxilla: ante-mortem tooth loss left 6,7,8 and abscess at root of 8, root only remains of right 3, 5 and left 4, 5. Mandible: ante-mortem tooth loss right 6,8 and left 7. moderate calculus and severe tooth-wear on all teeth.	95

Burial	number	Coffin details	Age category	Age	Sex	Pathology	% of burial excavated and details
SK	76	present, decayed	Middle Aged Adult	Middle aged adult	f?	DJD of vertebrae, with lipping on thoracic vertebrae, possible osteophytes on humeral head. Pronounced nasal spine and slightly bent to the right, possible healed AM break. Mandible Ante-mortem tooth loss right M1 and M2, left M1 and M2, low attrition and slight calculus with root caries on buccal right m3 with slight periodontal disease. Maxilla: ante-mortem tooth-loss left Pm2, M1 and M2, right PM1, M1, M2, M3. Linear enamel hypoplasia on canines.	100
SK	77	present, decayed	Middle Aged Adult	Middle aged adult	F?	No pathology observed.	40.left half of body only
SK	78	present, decayed	Adult	Adult	M?	fusion of mid thoracic vertebrae and fusion of 5th lumbar vertebrae to sacrum.	60. Lower body only
SK	79	coffin plate (decayed) and nails remain.	Older aged adult	Older adult	M	Extra bone growth at auricular surface, severe lipping and compression of lumbar vertebrae and lower thoracic vertebrae. Endentulous.	100
SK	80	uncertain	Adult	adult	M?	No pathology observed.	40. Lower legs only
SK	81	present, decayed	Older aged adult	Older adult	?	Ante-mortem tooth loss lower right p2, M1 and M2 and lower left M1. Severe caries Lower left PM2 severe tooth wear. Upper left incisor 1 and right and left canine ante-mortem tooth loss and severe root caries upper right m1.	30. Upper body only

Burial	number	Coffin details	Age category	Age	Sex	Pathology	% of burial excavated and details
SK	82	coffin plate (decayed) and nails remain.	Middle Aged Adult	Middle aged adult	M?	DJD of spine with severe lipping. Double anterior calcaneal facets. Extra bone growth at auricular surface. Compression of posterior 3rd-5th lumbar vertebrae and compression fracture to 3rd lumbar vertebrae. Possible copper alloy hoop earring found by head.	100. Partially detreiorated due to coffin plate.
SK	83	present, decayed	Adult	Adult	F?	Septal aperture of left humerus. Maxilla, ante-mortem tooth loss Right 3, 5, 6, 7, 8 and left 3-8, severe tooth wear. Mandibular ante mortem tooth loss, R 4-8 and left 4,6, 7 severe wear and mild calculus.	95. Right arm partially truncated.
SK	84	coffin plate (decayed) and nails remain.	younger aged adult	Young adult	F	minimal tooth wear. Mild Cribra orbitalia. Maxillary caries R 7 and 8. No calculus, 3rd molars erupted. Linear enamel hypoplasia on teeth. Mandible left 8 ante-mortem tooth loss and slight calculus.	95. Right arm partially truncated.
SK	85	decayed nails remain	Adult	adult	?	No pathology observed.	30. Lower legs only
SK	86	decayed nails remain	Older aged adult	older adult	M?	Bone button found around pelvis. Deformation of the left sacral articular facet, DJD/OA at sacrum articulation and compression of vertebrae.	60
SK	87	coffin plate (decayed) and nails remain.	younger aged adult	young adult	F?	minimal tooth wear little calculus. No visible pathology.	60. Mid thoracic decayed by coffin plate.

Burial	number	Coffin details	Age category	Age	Sex	Pathology	% of burial excavated and details
SK	88	coffin plate (decayed) and nails remain.	adolescent	13-18	?	Sacrum unfused	60. Mid thoracic decayed by coffin plate.
SK	89	coffin plate (decayed) and nails remain.	Adult	Adult	f	No pathology observed.	60. Mid thoracic decayed by coffin plate.
SK	90	present, decayed	younger aged adult	young adult	m	minimal calculus. Ante-mortem tooth loss Lower right 5.	10. Cranium only
SK	91	uncertain	early childhood	3-7	?	No pathology observed.	10. Cranium only

## APPENDIX 5: Height above Ordinance Datum of Burials

Level number	Reduced level (mAOD)	Description
1	20.102	Sk1
2	19.922	sk2 head
3	19.752	sk2 spine
4	19.912	sk3 toes
5	19.522	sk3 knees
6	19.862	sk5
7	19.702	sk6 left shoulder
8	19.552	sk6 right shoulder
9	19.672	sk7 head
10	19.812	sk8 head
11	19.582	sk8 pelvis
12	19.712	sk8 feet
13	19.802	sk10 knee
14	19.802	sk9 knee
15	19.662	sk12 head
16	19.512	sk12 pelvis
17	19.442	base pit [46]
18	19.672	sk11 head
19	19.522	sk11 pelvis
20	19.472	sk11 feet
21	19.622	sk13 head
22	19.452	sk13 pelvis
23	19.722	sk13 feet
24	19.702	sk14 baby
25	19.852	sk15 head
26	19.752	sk15 pelvis
27	19.752	sk15 feet
28	19.752	disartic skull
29	19.652	sk16 feet
30	19.907	sk17 head
31	19.727	sk17 pelvis
32	19.877	sk17 feet
33	19.477	(058) coffin
34	19.477	skull nr sk17
35	19.697	sk18 head
36	19.517	sk18 pelvis
37	19.547	sk18 feet
38	19.767	sk19 legs
39	19.422	sk20
40	19.362	sk21 head
41	19.232	sk21 pelvis

Level number	Reduced level (mAOD)	Description
42	19.332	sk21 feet
43	19.432	sk23 feet
44	19.402	sk22 feet
45	19.372	sk25 cranium
46	19.302	sk25 pelvis
47	19.282	sk25 feet
48	19.402	sk24 feet
49	19.352	sk26
50	19.222	sk28 and coffin next to it
51	19.292	sk29 head
52	19.062	sk29 pelvis
53	19.152	sk30 head
54	19.122	sk30 pelvis
55	void	
56	19.112	sk30 feet
57	19.152	sk33 head
58	18.962	sk33 feet
59	19.282	sk31 head
60	19.252	sk31 pelvis
61	19.252	sk31 feet
62	19.252	sk34 tib and fib
63	19.222	sk32 head
64	19.122	sk32 pelvis
65	19.242	sk32 feet
66	Void	
67	19.112	sk35 head
68	19.052	sk35 pelvis
69	19.112	sk35 feet
70	19.212	sk36 head
71	19.102	sk36 pelvis
72	19.132	sk36 feet
73	19.212	sk37 head
74	19.312	sk37 pelvis
75	19.202	sk37 feet
76	18.472	sk38 legs
77	19.222	sk39 legs
78	18.912	sk40 toe
79	18.942	sk41 head
80	19.232	sk35 knee
81	19.232	sk35 arm
82	19.102	sk35 skull
83	18.732	sk43 head
84	18.972	sk42 feet

Level number	Reduced level (mAOD)	Description
85	18.922	sk44
86	18.882	sk45
87	18.212	sk46 head
88	18.192	sk46 pelvis
89	18.212	sk46 feet
90	17.982	sk47 head
91	17.812	sk47 pelvis
92	17.902	sk47 feet
93	19.772	sk48 legs
94	19.722	sk49 head
95	19.742	sk49 pelvis
96	19.702	sk49 feet
97	19.692	sk50
98	19.752	sk51 head
99	19.752	sk51 pelvis
100	19.752	sk51 feet
101	19.622	sk52 pelvis
102	19.612	sk52 feet
103	19.772	sk53
104	19.542	sk54
105	19.312	sk55 feet
106	19.332	sk55 pelvis
107	19.452	sk55 head
108	19.412	sk56 pelvis
109	19.542	sk56 feet
110	19.322	sk57 legs
111	19.382	sk58 head
112	19.262	sk58 pelvis
113	19.402	sk58 feet
114	19.222	sk59 baby
115	19.182	sk60 femur
116	19.042	sk61
117	19.252	sk62 head
118	19.172	sk62 pelvis
119	19.152	sk62 feet
120	19.042	sk64 legs
121	19.102	sk63 head
122	19.112	sk63 pelvis
123	19.092	sk63 feet
124	18.942	sk65 legs
125	19.012	(160) coffin
126	19.722	sk66
127	19.852	sk67 head

Level number	Reduced level (mAOD)	Description
128	19.812	sk67 pelvis
129	19.952	sk67 feet
130	19.512	sk70 legs
131	19.592	sk69 head
132	19.402	sk69 pelvis (with coffin plate)
133	19.452	sk69 feet
134	19.502	sk68 head
135	19.332	sk68 pelvis
136	19.352	sk68 feet
137	19.432	sk071 head
138	19.332	sk071 pelvis
139	19.232	sk071 feet
140	19.382	sk072 head
141	19.282	sk072 pelvis
142	19.302	sk072 feet
143	19.452	(172) cannon balls
144	19.332	sk73 head
145	19.222	sk73 pelvis
146	19.212	sk73 feet
147	19.552	sk74 pelvis
148	19.552	sk74 feet
149	19.492	sk75 head
150	19.482	sk75 pelvis
151	19.482	sk75 feet
152	19.282	sk76 head
153	19.142	sk76 pelvis
154	19.222	sk76 feet
155	19.222	sk78 pelvis
156	19.232	sk78 knees
157	19.432	sk77 head
158	19.422	sk77 pelvis
159	19.522	sk77 feet
160	19.222	Sk79 feet
161	18.852	sk79 pelvis
162	18.802	sk80 pelvis
163	18.882	Sk82 head
164	18.952	sk82 pelvis
165	19.122	sk82 feet
166	19.092	Sk81 head
167	19.062	Sk83 head
168	18.982	sk83 pelvis
169	18.992	sk83 feet
170	19.012	Sk84 head

Level number	Reduced level (mAOD)	Description
171	18.912	sk84 pelvis
172	18.942	sk84 feet
173	18.862	sk85
174	18.932	sk79 head
175	18.822	sk86 pelvis
176	18.842	sk86 feet
177	void	
178	18.732	sk87 head
179	18.622	sk87 pelvis
180	18.652	sk87 feet
181	18.632	sk88 head
182	18.542	sk88 pelvis
183	18.712	(196) deposit
184	18.332	Sk89 legs
185	18.322	sk89 feet
186	18.000	Sk90 cranium
187	17.800	Sk91 cranium

## APPENDIX 6: ENVIRONMENTAL SAMPLES DATA

Table 1: Residue Quantification (\* = 1-10, \*\* = 11-50, \*\*\* = 51-250, \*\*\*\* = >250) and weights in grams

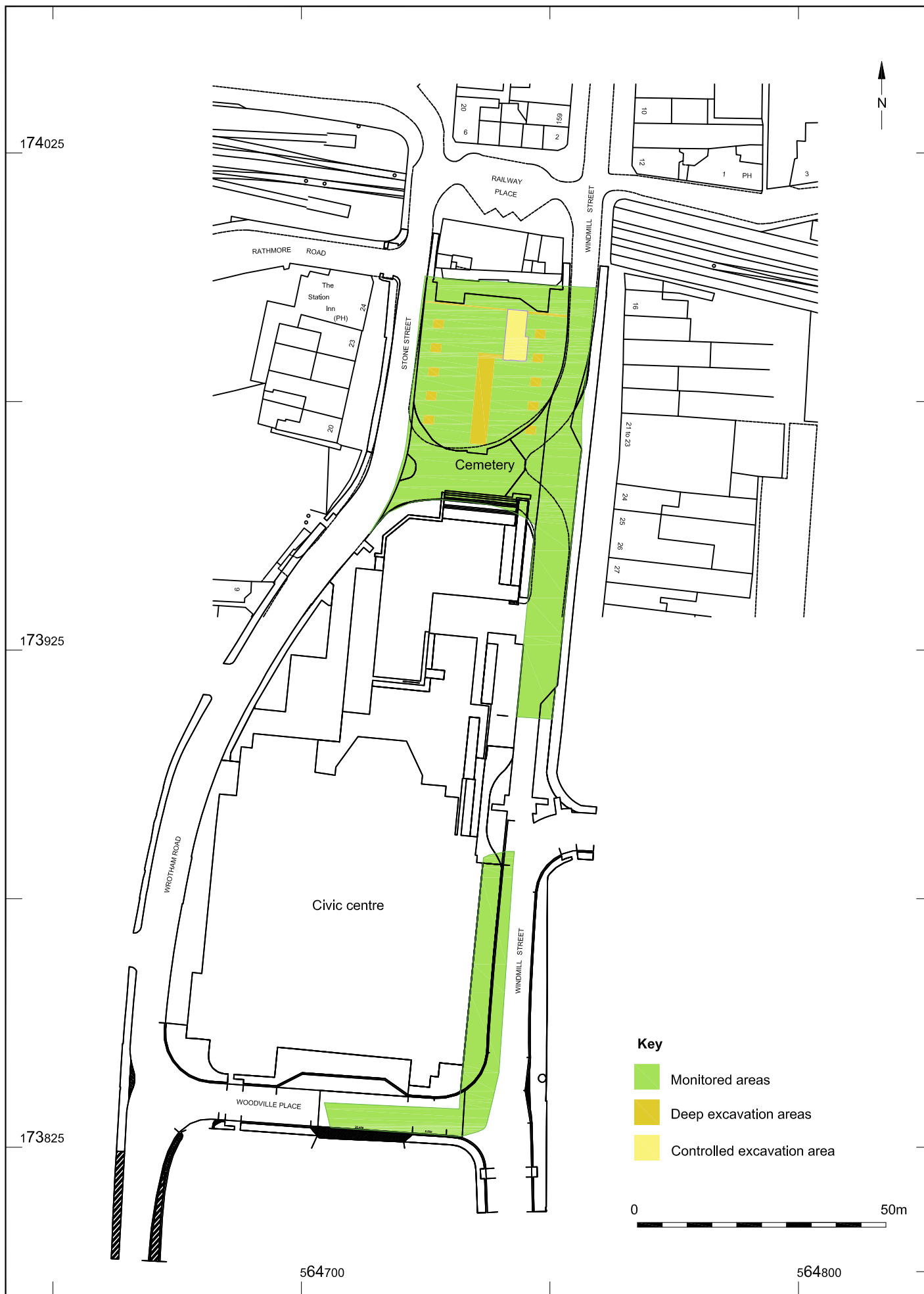
Sample Number	Context	Context / deposit type	Sample Volume litres	sub-Sample Volume litres	Charcoal >4mm	Weight (g)	Charcoal <4mm	Weight (g)	Bone and Teeth	Weight (g)	Fishbone and microfauna	Weight (g)	Other (eg ind, pot, cbm)
1	196	Hill wash deposit	20	20	*	2	**	<2	**	10	**	<2	Burnt clay **/61g - Flint */2g – Metal */2g

Table 2: Flot Quantification (\* = 1-10, \*\* = 11-50, \*\*\* = 51-250, \*\*\*\* = >250) and preservation (+ = poor, ++ = moderate, +++ = good)

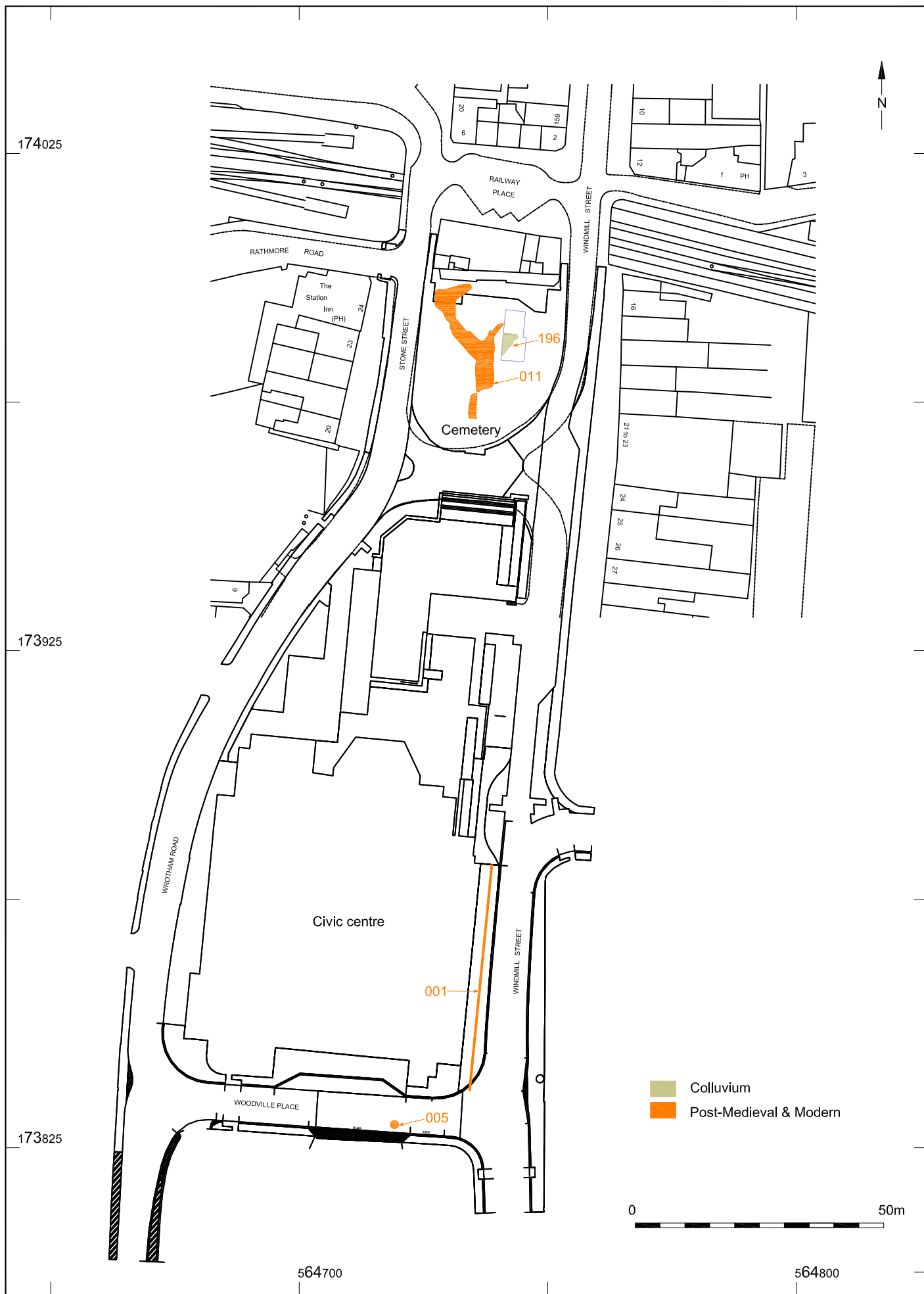
Sample Number	Context	weight g	Flot volume ml	Uncharred %	sediment %	seeds uncharred	Charcoal >4mm	Charcoal <4mm	Charcoal <2mm	crop seeds charred	Identifications	Preservation	weed seeds charred	Identifications	Preservation	Small mammal bone	LSS
1	196	70	200	20	10		***	***	****	*	Cerealia, <i>Triticum</i> sp., <i>Hordeum</i> sp.	+ to ++	*	Poaceae	++	*	**



© Archaeology South-East		Gravesend, Sensory Gardens	Fig. 1
Project Ref: 4567	April 2011	Site location	
Report Ref: 2011033	Drawn by: DJH		



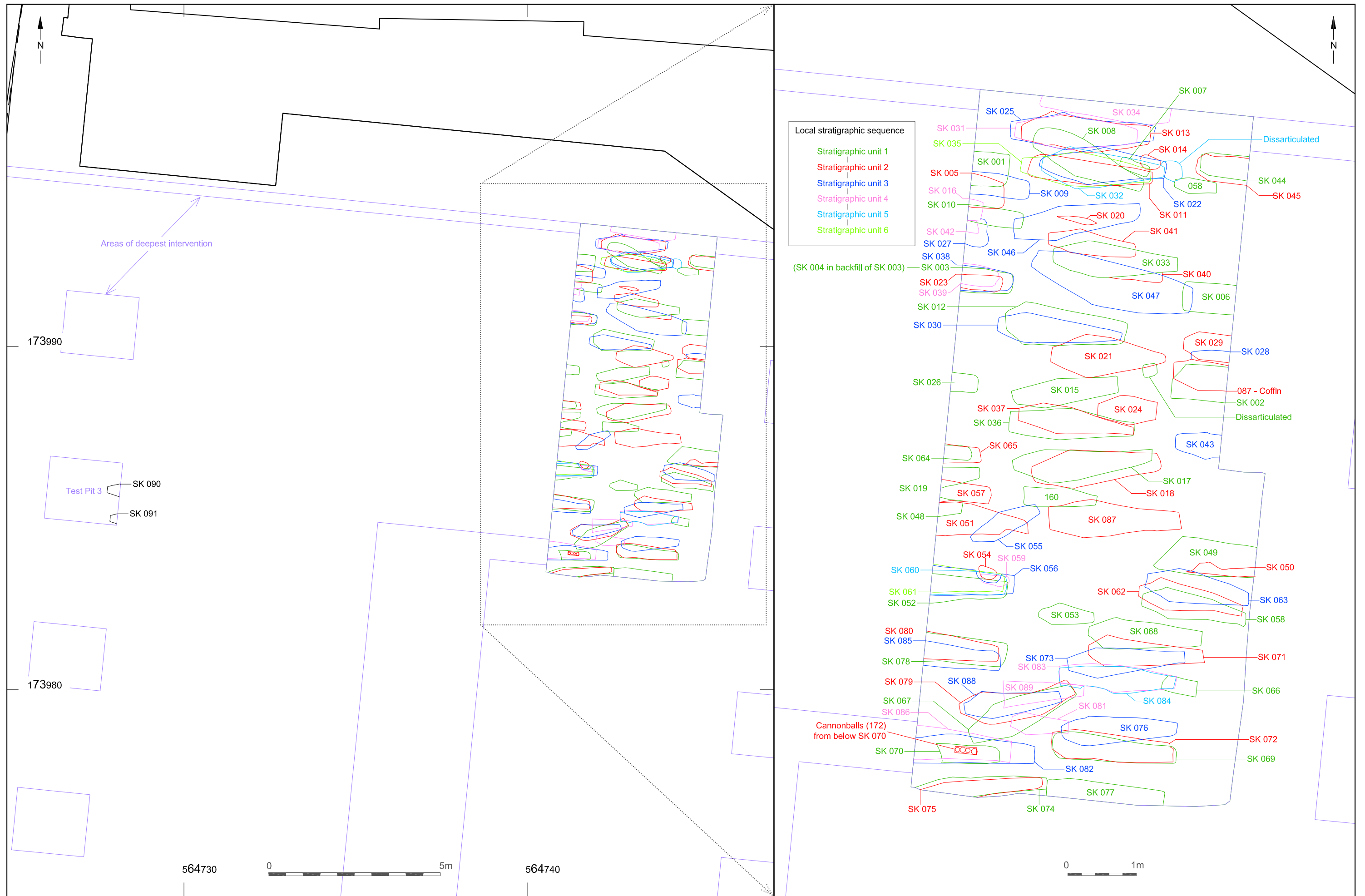
© Archaeology South-East		Sensory Gardens, Gravesend	Fig. 2
Project Ref: 4567	April 2011	Monitored areas	
Report Ref: 2011033	Drawn by: DJH		



© Archaeology South-East		Sensory Gardens, Gravesend	Fig. 3
Project Ref: 4567	April 2011	Archaeological features	
Report Ref: 2011033	Drawn by: DJH		



© Archaeology South-East		Sensory Gardens, Gravesend	Fig. 4
Project Ref: 4567	April 2011	Plan of cemetery features	
Report Ref: 2011033	Drawn by: DJH		





Dentures from Skeleton 46



Cannonballs from below Skeleton 70



SK47 with kyphosis



SK 58 lying prone



SK69 with coffin plate



SK86 with bone button

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