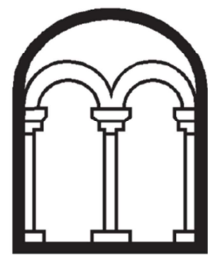


**THE CLARENCE HOTEL
13 ST JOHN'S STREET
BEDFORD
MK42 0AH**

**ARCHAEOLOGICAL MITIGATION
ASSESSMENT AND UPDATED PROJECT DESIGN**

Albion
archaeology



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Preface

This assessment has been prepared by Jeremy Oetgen (Project Manager), David Ingham (Project Officer) and Ian Turner (Archaeological Supervisor), with contributions by Holly Duncan (Artefacts Manager), Jackie Wells (Artefacts Officer) and Mark Maltby (Faunal remains, Bournemouth University). The figures were created by Joan Lightning (CAD Operator).

Fieldwork was supervised by Ian Turner (Archaeological Supervisor), with investigation and recording carried out by Matthew Billings, Krzysztof Ryniec, Catie Watts and Heather White. Processing of the ecofact samples was undertaken by Slavomir Utrata, with initial processing of the finds carried out by Jackie Wells. All Albion projects are under the overall management of Drew Shotliff.

The site was monitored on behalf of the Local Planning Authority by Geoff Saunders (Archaeological Officer, Bedford Borough Council's Historic Environment Team).

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Key Terms

Throughout this project design the following terms or abbreviations are used:

BLARS	Bedfordshire and Luton Archives and Record Service
CBM	Ceramic building material
CIfA	Chartered Institute for Archaeologists
Client	One Housing Group Ltd
EDP	The Environmental Dimension Partnership
HE	Historic England
HER	Bedford Borough Council's Historic Environment Record
HET	Bedford Borough Council's Historic Environment Team
LPA	Local Planning Authority
NHLE	National Heritage List for England
OS	Ordnance Survey





Non-Technical Summary

Bedford Borough Council granted planning permission for the demolition of the Clarence Hotel and erection of an independent living centre at 13 St John's Street, Bedford. The Environmental Dimension Partnership consulted Bedford Borough Council's Historic Environment Team and agreed a four-stage archaeological mitigation strategy: historic building recording, archaeological evaluation, a review of the evaluation results, and a programme of archaeological mitigation works.

Based on the results of the evaluation, it was agreed by both sides that an archaeological excavation would take place of an area measuring c. 16m x 15m, followed by a watching brief if necessary. Albion Archaeology undertook the archaeological excavation in 2015 and the watching brief in 2016.

Bedford has its origins in the Saxon period; the Anglo-Saxon Chronicle records that King Edward the Elder in AD 915 'ordered the borough on the south side of the river to be built'. The bounds of this burh are defined by the King's Ditch, which survives as an earthwork in places, and in others as a drain in a culvert that runs alongside Kingsway and across the western side of the Bedford College campus. The development area, therefore, lies near the centre of the burh, and St John's Street is thought to follow the line of the main north-south thoroughfare of the Saxon town. The western half of the southern burh has been subject to extensive clearance and redevelopment since the late 1950s.

The excavation produced evidence for activity dating more or less continuously from the late Saxon / Saxo-Norman period through to modern times. The watching brief was also undertaken, but was less informative; it produced similar results to those observed during the excavation, but with much less clarity of information.

The earliest archaeological activity on site related primarily to late Saxon / Saxo-Norman quarrying, although the presence of a possible latrine pit suggests the presence of a dwelling nearby. A similar pit was present in close proximity during the early medieval period; it may have been associated with the structure(s) and possible domestic activity suggested by the presence of post-holes and small pits adjacent to a newly dug roadside ditch alongside St John's Street.

Further quarrying was carried out in the late medieval / early post-medieval period, while the creation of two ditches — one perpendicular to St John's Street, one roughly parallel with it — suggests reorganisation of the land. Use of the land declined in the post-medieval period, however, before renewed activity in the 19th century when the ground level was raised significantly and the Clarence Hotel building was constructed.

The remains at the Clarence Hotel site, although limited in scope, have provided new information regarding the characteristics of the late Saxon / Saxo-Norman origins of Bedford, as well as providing evidence of changes in the internal layouts of burgage plots within the southern burh.

No further analysis of the excavated data beyond that presented in this report is required. This report will be uploaded to the Archaeology Data Service's Online Access to the Index of Archaeological Investigations (OASIS ref: albionar1-145863). In addition, a summary will be prepared for submission to South Midlands Archaeology. The archive of materials (subject to



the landowner's permission) and accompanying records will be deposited with The Higgins Art Gallery & Museum (accession no. BEDFM: 2013.18).



1. INTRODUCTION

1.1 *Planning Background*

Bedford Borough Council granted planning permission (13/02450/MAF) for the demolition of the existing building and the erection of an independent living centre with associated parking, landscaping and ancillary works on the site of the Clarence Hotel, 13 St John's Street, Bedford, MK42 0AH.

Condition 2 of the planning permission states that: *There shall be no development on site until an archaeological strategy for evaluation and if necessary, a further mitigation strategy based on the outcome of the evaluation, have been submitted to and approved in writing by the Local Planning Authority.*

The archaeological mitigation strategy shall include the following components:

- (i) *fieldwork and/ or preservation 'in situ' of archaeological remains;*
- (ii) *a post-excavation assessment report (to be submitted within six months of the completion of fieldwork);*
- (iii) *a post-excavation analysis report, preparation of site archive ready for deposition at a store approved by the Local Planning Authority, completion of an archive report, and submission of a publication report (to be completed within two years of the completion of fieldwork).*

The cited reason for the condition is: *To safeguard archaeological assets within the approved development boundary from impacts relating to any groundworks associated with the development scheme and to ensure the proper and timely preservation and/or investigation, recording, reporting and presentation of archaeological assets affected by this development, in accordance with Saved Policies BE 24 & BE25 of the Bedford Borough Local Plan 2002, Policy CP23 of the Bedford Borough Core Strategy and Rural Issues Plan (2008) and according to national policies contained in the National Planning Policy Framework (DCLG, March 2012).*

The Environmental Dimension Partnership (EDP) consulted Bedford Borough Council's Historic Environment Team (HET) and agreed a four-stage archaeological mitigation strategy (EDP 2014). This set out proposals for historic building recording (Stage 1), archaeological evaluation (Stage 2) and, subject to the review (Stage 3) of the evaluation results, a programme of archaeological mitigation works (Stage 4).

Building recording (Headland Archaeology 2014) was undertaken in 2014, prior to the demolition of the former hotel building. Archaeological evaluation by trial trenching was undertaken subsequently in 2014 (Headland Archaeology 2015). Based on the results of the trenching, EDP proposed an archaeological excavation of a c. 16m x 15m area at the eastern edge of the site, to be completed before construction started, followed by archaeological monitoring and recording during construction, if required. Albion Archaeology undertook the archaeological excavation in 2015, with the programme of monitoring and recording taking place in 2016.



1.2 **Status of the Archaeological Mitigation Assessment and Updated Project Design**

This report summarises the results of the archaeological excavation and monitoring, and includes the data from the trial trenching. It assesses the analytical potential of the recovered datasets and sets out the further stages required to complete the dissemination and archiving of the results of the fieldwork. The latter will fulfil the requirements of the archaeological planning condition and allow it to be discharged.

1.3 **Site Location**

The development area (DA) lies on the west side of St John's Street (Fig. 1), south of the River Great Ouse and within Bedford's historic town centre, just outside the designated Bedford Conservation Area. The DA covers a total area of *c.* 1,150m² and is centred on NGR TL 05089 49310.

1.4 **Landform, Geology and Soils**

The ground surface prior to excavation was fairly level, at a height of *c.* 26.8m OD. The bedrock is middle Jurassic politic limestone and mudstone of Cellarways Clay Member formation. This is overlain by river terrace gravels (British Geological Survey 2015).

1.5 **Archaeological Background**

Bedford has its origins in the Saxon period, with the Anglo-Saxon Chronicle entry for AD 915 recording that King Edward the Elder 'ordered the borough on the south side of the river to be built'. The bounds of this *burh* are defined by the King's Ditch, which survives as an earthwork in places, and in others as a drain in a culvert which runs alongside Kingsway and across the western side of the Bedford College campus. The DA therefore lies near the centre of the *burh*, and St John's Street is thought to follow the line of the main north-south thoroughfare of the Saxon town. Despite this, however, the DA is not within the Bedford Conservation Area: this was drafted in respect of the built heritage, and the western half of the southern *burh* has been subject to extensive clearance and redevelopment since the late 1950s.

The archaeological evidence for this part of Bedford was collated for the Extensive Urban Survey (EUS) (Albion Archaeology 2005a) and largely comprises the investigations published in Baker *et al.* 1979. The only significant work in the vicinity subsequent to the EUS has been that at 29–31 St John's Street (Albion Archaeology 2005b; 2005c; 2008a; 2013) and the current development by Bedford College at St Mary's Street (Albion Archaeology 2014 and in prep.).

The trial trench evaluation for the present development (Headland Archaeology 2015) comprised three trenches. Trench 1 at the east end of the DA revealed 'substantial modification' of deposits across much of the trench to a depth of 1.3m. The descriptions of the deposits, including quantities of brick, characterised them as a mixture of demolition layers and levelling dumps associated with 19th-century building work. There were also substantial foundations present of 19th-century buildings.

The most significant archaeological evidence was restricted to the eastern section of Trench 1, where a possible ditch and an amorphous pit-like feature were found. The



other two trenches revealed no archaeological features, probably due to varying degrees of truncation of the Saxon and medieval land surface across the DA.

1.6 Objectives

In accordance with current national and local planning policy and Condition 2 of the planning permission (see Section 1.1), the principal aims of the mitigation strategy were to:

- safeguard archaeological assets from impacts relating to any groundworks associated with the development scheme; and
- ensure the proper and timely investigation, recording, reporting and presentation of archaeological assets affected by this development.

To address these objectives, a programme of archaeological investigation, recording, analysis and reporting was carried out as outlined in Section 2.

Groundworks for the development had the potential to expose archaeological remains dating from the Saxon, medieval and post-medieval periods. The research framework for Bedfordshire states that, while there have been many archaeological investigations in the centre of Bedford, the chronology and character of the town, with the exception of the castle quarter, is still not well understood (Oake 2007, 15). The development of towns, changes in their internal layouts and housing densities, and their role as centres of supply and demand have also been identified as subjects in need of further study (Medlycott 2011, 70).

The specific objectives of the investigation were to:

- record, characterise and date evidence for occupation or industrial activity in the Saxon, medieval and post-medieval periods;
- examine evidence for craft/industrial activities that might have been undertaken on the site;
- identify any evidence relating to the nature and date of urban development within the circuit of the King's Ditch and the southern *burh*.

1.7 Method Statement

The archaeological open-area excavation was undertaken between 23rd September and 12th October 2015, while a second phase of monitoring during the construction groundworks was undertaken between 16th May and 2nd July 2016. A detailed method statement for these is provided in the WSI (Albion Archaeology 2015).

The excavation was configured in such a way as to enable archaeological investigation to take place across the entire area that would be impacted by the development, with the exception of the northern edge, where stepping of the trench sides had to take place within this area due to the proximity of the property boundary (cf. Albion Archaeology 2015, Section 2.2.2). Some features could not be fully excavated, however, due to their depth and proximity to the edge of the trench; where this was the case, it is noted in Section 3 below.

Monitoring of construction works was very limited in scope. For safety reasons it was not possible to enter the foundation trenches to investigate and record any features.



2. RESULTS

2.1 Introduction

2.1.1 Methodological approach to assessing contextual data

The contextual data were assessed in order to establish a coherent spatial and chronological framework. A total of 180 contexts from the excavation were assigned initially to Sub-Groups (SG) which were then amalgamated into Groups (G), *e.g.* ditch, post-holes, quarry pit (Table 1). The watching brief accounted for 54 additional context numbers, but these provided little information that could be subjected to meaningful analysis and produced a negligible finds assemblage, and were therefore excluded from this chronological framework.

The allocation of individual contexts to specific Sub-Groups and Groups was made on the basis of the following criteria:

- Do the contexts form a coherent spatial unit *e.g.* ditch length, pit group?
- Do the contexts represent similar positions within the stratigraphic sequence?
- Do the contexts contain suitable dating material?

The Groups were then assigned to Phases, each of which represents a distinct chronological period.

The text which follows is structured by Phase and discussed by Group, with occasional references to Sub-Groups for clarification.



Phase	G	Group description	No. contexts	Feature (bold) and context numbers
1: Geological	1	Undisturbed geological deposits	2	1004; 1005
2: Late Saxon / Saxo-Norman (c. 850–1150)	2	Pit	2	1127 , 1128
	21	Three quarry pits	30	1021 , 1022; 1030 , 1031; 1076 , 1077, 1078, 1079, 1080; 1097 , 1098, 1099, 1100, 1101, 1102, 1103, 1104, 1105, 1106, 1107, 1108, 1109; 1110 , 1111, 1112, 1113, 1114, 1115, 1116, 1166
3: Early medieval (c. 1150–1250)	3	Four post-holes	8	1010 , 1011; 1131 , 1132; 1133 , 1134; 1135 , 1136
	4	Four shallow pits	8	1040 , 1041; 1044 , 1045; 1117 , 1118; 1129 , 1130
	5	Possible latrine	6	1121 , 1122, 1123, 1124; 1125 , 1126
	6	Quarry pit	14	1025 , 1009, 1026, 1027, 1081, 1082, 1083, 1084, 1085, 1086, 1088, 1089, 1090, 1091
	7	Roadside ditch	9	1035 , 1036, 1037, 1038, 1039; 1151 , 1152; 1159 , 1160
4: Late medieval / early post-medieval (c. 1400–1600)	22	Post-hole	2	1028 , 1029
	23	Pit	3	1012 , 1013, 1014
	8	Ditch	4	1032 , 1033, 1034; 1175
	9	Three quarry pits	16	1015 , 1020; 1062 , 1063, 1066, 1071, 1072, 1073, 1074, 1075; 1141 , 1142, 1143, 1144; 1147 , 1148; 1176
	12	Ditch	9	1042 , 1043; 1046 , 1047, 1048; 1145 , 1146; 1167 , 1168
5: Post-medieval (c. 1600–1750)	20	Quarry pit	6	1015 , 1016, 1017, 1018, 1019, 1049
	10	Upper fill of earlier quarry pit	2	1052; 1062 , 1064
6: Undated	11	Two pits	9	1050 , 1051, 1053, 1054; 1065 , 1067, 1068, 1069, 1070
	13	Pit	2	1007 , 1008
7: Modern, but predating Clarence Hotel (c. 1750–1800)	14	Probable hearth	5	1092 , 1093, 1094, 1095, 1096
	15	Three post-holes	7	1023 , 1024; 1149 , 1150; 1163 , 1164, 1165
	16	Stone-lined well	5	1169 , 1170, 1171; 1172 , 1173
	17	Stone-lined drainage channel	4	1137 , 1138, 1139, 1140
8: Contemporary with the Clarence Hotel (c. 1800–)	18	Assorted features	5	1055; 1056; 1057 , 1058; 1161
8: Contemporary with the Clarence Hotel (c. 1800–)	19	Assorted features	22	1000; 1001; 1002; 1003; 1006; 1059; 1060 , 1061; 1119 , 1120; 1153; 1154; 1155; 1156; 1157; 1158; 1162; 1174; 1177; 1178; 1179; 1180
	Total		180	

Table 1: Summary of provisional phasing



2.2 Summary of Results

The excavation produced evidence for activity dating more or less continuously from the late Saxon / Saxo-Norman period through to modern times. Seven broad phases of activity within this timespan can be identified, and these are described in detail below this summary. A watching brief was also undertaken; this produced similar results to those observed during the excavation, but with much less clarity of information, and a summary account of this is given at the end of Section 2.

Phases are illustrated in plan in Figs. 3–7 – these are simplified versions of the site plans. Sections were also drawn but are not illustrated as they are not particularly informative. Numerous photographs were taken, but again these are not included in this report because they do not add significantly to the narrative.

The earliest archaeological activity on site (Phase 2) seems to have related primarily to quarrying, although the presence of a possible latrine pit suggests the presence of a dwelling nearby. A similar pit was recorded in close proximity during the early medieval period (Phase 3), which may have been associated with the structure(s) and possible domestic activity suggested by the presence of post-holes and small pits adjacent to a newly dug roadside ditch lining St John's Street.

Further quarrying was carried out in the late medieval / early post-medieval period (Phase 4), while the creation of two ditches — one perpendicular to St John's Street, one roughly parallel with it — suggests reorganisation of the land. Use of the land seems to have declined in the post-medieval period (Phase 5), however: two pits were dug through a layer that formed over the top of the Phase 4 quarry pit, but little other activity seems to have taken place. Several features could not be closely dated, however (Phase 6), and some of these are likely to relate to this period; these included a hearth, and three post-holes that may have formed a structure over it.

Another pit was dug and further layers of soil amassed in the early modern period (Phase 7), before a much greater accumulation of soil was added to a depth of *c.* 1m (Phase 8). The remains of the Clarence Hotel and its associated features were dug through this.

2.3 Phase 1: Undisturbed Geological Deposits

The undisturbed geological deposits comprised two alluvial layers, G1 (Fig. 2). The upper deposit comprised mid-orange-brown silty gravel, while the lower one was mid-brown-orange silty sand. No naturally formed subsoil survived, with anthropogenic layers extending all the way down to the geological deposits, indicating a high level of activity and ground disturbance down to the level of the natural.

2.4 Phase 2: Late Saxon / Saxo-Norman (c. 850–1150)

The earliest archaeological features identified comprised a small pit (G2) and three larger pits (G21), the latter probably representing quarries (Fig. 2). The majority of the datable finds from these pits comprise a moderately large assemblage of late Saxon / Saxo-Norman pottery; the small amount of medieval pottery in the upper fills of the quarry pits is considered to be intrusive. A relatively large assemblage of animal bone also came from these pits.



All four pits lay only partly within the excavated area. The three in G21 were up to 1.05m deep and all had steep, often nearly vertical sides. Their size is the main reason for suspecting that they were quarry pits, dug to extract the gravel into which they extended, and subsequently backfilled with rubbish.

Pit G2 also had nearly vertical sides and was just over 1m deep. Its function is uncertain, but it may have been a barrel-lined latrine pit — a similarly interpreted pit (G5) assigned to Phase 3 lay just 0.60m to the east. Frequent flecks and small fragments of charcoal were evident in the pit's backfill, providing an indication of burning in the nearby area.

2.5 Phase 3: Early Medieval (c. 1150–1250)

The features assigned to Phase 3 comprised post-holes G3 and G22, pits G4 and G23, possible latrine pit G5, quarry pit G6, and roadside ditch G7 (Fig. 3). Most of the pottery recovered from these features dates to the late Saxon / Saxo-Norman period, but the volume of early medieval pottery recovered alongside it is sufficient to suggest that this material is contemporary with the features, and the earlier pottery residual.

Post-holes G3 were up to 0.37m deep, and may have formed some sort of insubstantial backyard structure. Three of them were in a line, while the fourth had sandstone fragments in the base to act as either a pad-stone support or as packing for the post. A moderate quantity of pottery and animal bone was recovered from the northern two. A fifth post-hole (G22) was located several metres further south; it also had a fragment of sandstone in its base, and a moderate amount of medieval pottery, but is unlikely to have been part of the same overall structure.

Pits G4, clustered in the south-east corner of the excavated area, were 0.1–0.43m deep. Only the southern two pits contained pottery pointing towards a medieval date, but the other two are thought to have been contemporary based on the similarity of their size and profile. The southernmost pit contained a relatively large amount of animal bone. A fifth pit to the north (G23) was similar in depth and size to those in G4, but contained a larger assemblage of pottery (albeit mostly residual late Saxon / Saxo-Norman in date).

Pit G5 was ovate in plan and 1m deep, with vertical sides and a stepped base. Within the pit was a distinct gravelly deposit that occupied an area measuring 0.7m in diameter and 0.6m deep. This is thought to indicate that the pit once contained a barrel lining; the void within the barrel would then have been backfilled with the gravelly deposit when the latrine was no longer in use and the barrel had been removed. The barrel may simply have been used for storage, but is more likely to have been used for a latrine: the barrel would either have been 'shovelled out' or removed and tipped out on a regular basis. The pit's stepped profile would have suited a latrine of this type: the barrel would deliberately have been made, allowing liquids to drain away and leave only the solids (Cockayne 2007, 143). A moderately large amount of pottery (mostly residual late Saxon / Saxo-Norman ware) and animal bone was recovered from the pit, but this was mostly from the deposits that would have surrounded the barrel.



Pit G6 extended beyond the excavated area, but was *c.* 3.5m wide, at least 4m long and 1.25m deep, with steep sides and a roughly flat base. It is thought to have been a quarry pit, similar to those in Phase 2, though other interpretations are possible. A large amount of animal bone and pottery was recovered from the pit; nearly all of the latter is late Saxon / Saxo-Norman in date, but the presence of medieval wares in several deposits throughout the pit suggest that the earlier material is residual.

Ditch G7 was more than 2m wide and more than 1m deep (the base was not reached due to safety restrictions), terminating at its southern end somewhere in the region of pit G6. The relationship between the two is unknown due to later disturbance. The ditch contained moderate amounts of pottery and animal bone, as well as a fragment of lead alloy caulking (RA11) and a residual bone dress pin (RA1). It is likely to have been a roadside ditch to the historic St John's Street to the immediate east of the DA.

2.6 Phase 4: Late Medieval to Early Post-medieval (c. 1400–1600)

The activity identified in Phase 4 (Fig. 4) comprised two ditches (G8 and G12), broadly perpendicular to each other, and four quarry pits (G9 and G20). The point at which the two ditches would have intersected had been subjected to modern disturbance, making the relationship between the two unknown.

Both ditches were only *c.* 0.2m deep. The curving nature of G8 may indicate that it defined the area of quarrying activity to the west, represented by G9 and G20, in which case it would have been later than ditch G12, which the quarries cut across. Ditch G12 was perpendicular to Phase 3 roadside ditch G7 (although it is uncertain whether this was still in use) and is therefore thought to have defined the edge of a burgage plot, as it, although there was no surviving evidence for the house that one would usually expect to find at the street frontage within a burgage plot. The ditch may also have served as a drain — indeed, the large, thin fragments of sandstone that were observed within the ditch may once have been used to cover it, creating a culvert.

Pits G9, which are assumed to have been quarries, were intercutting, but the relationships between them were obscured by later concrete foundations. Their depths are unknown, as none of the three was fully excavated due to safety concerns, but the largest was at least 0.8m deep. They contained large amounts of animal bone and moderate amount of pottery, as well as an iron ring (RA16) and large amounts of CBM and stone roof tiles.

Pit G20, similarly believed to have been a quarry, was also at least 0.8m deep. It contained a large amount of animal bone and a fairly large amount of pottery, together with 215g of slag, but lacked the large quantity of building material that was recovered from G9. Fragments of clay tobacco pipe and window glass in the uppermost fills suggest that a slight depression remained in the top of the partially backfilled pit that was not filled in until a later date.

2.7 Phase 5: Post-medieval (c. 1600–1750)

The only newly dug features assigned to Phase 5 were two pits, G11, which were 1.8m wide and 0.4–0.6m deep (Fig. 5). They contained a large amount of animal bone and a moderate amount of CBM, as well as small amount of pottery, vessel glass and fragments of clay tobacco pipe.



Pits G11 had been dug through layer G10, which is thought to represent a combination of gradual soil accumulation and the deliberate dumping of rubbish. The deposit was located in the south-west quarter of the excavated area, overlying Phase 4 quarry pits G9 and G20, and also filling the hollow left in the top of the former, where it was up to 0.45m thick. The assemblage of finds recovered from it is similar to that recovered from pits G11.

2.8 Phase 6: Undated

Phase 6 represents an assortment of features whose excavation either produced an insufficient artefact assemblage to assign a reliable date, or was not possible due to safety concerns. Possible soakaway G13 and stone-lined drainage channel G17 may have been associated with other and are likely to be modern, whereas probable hearth G14, post-holes G15 and stone-lined well G16 can only be dated to the late medieval period onwards.

Probable hearth G14 was 2.8m long and 2.45m wide (Fig. 6), but only 0.15m deep. It was situated over the top of infilled early medieval quarry pit G6 (Phase 3), with the surface of the infill discoloured as a result of *in-situ* burning. A construction deposit of tightly packed sandstone fragments survived on the south-west side of the feature, overlain by a thin layer of soot. Soil samples 4 and 7 were taken from this feature (see Section 4.5); they contained frequent flecks and small fragments of charcoal, but only small quantities of charred cereal grains, animal bone (some burnt) and fuel ash slag. This perhaps points to a domestic rather than industrial function.

Three post-holes (G15) were recorded adjacent to hearth G14, perhaps forming part of a superstructure or windbreak. The westernmost one contained a sooty deposit in its base that may well have derived from the hearth. The base and sides of the central post-hole were lined with large, flat fragments of sandstone which are likely to have been used to support the post.

Pit G13 had been dug partly through hearth G14. It appeared to be rectangular, but was largely obscured by a concrete foundation associated with the Clarence Hotel, and could not be excavated. The pit may have been a soakaway, with drainage channel G17 feeding into it, although it is unclear whether the rounded stones that filled the pit were designed to create voids to allow gradual drainage during heavy rainfall, or whether they were used to fill in the pit before the concrete foundation was constructed (the foundation was wider at this point, suggesting that the feature was still sufficiently visible at the time of the building's construction to indicate an area of soft ground). Drainage channel G17 was 0.2m deep with vertical sides and a flat base, and had been lined with roughly squared slabs of limestone clunch on its sides.

Well G16 measured 1.1m in diameter, within a rectangular construction trench measuring 1.95m by 1.3m. It had been given a lining of unworked fragments of sandstone, apparently without any bonding material, though this could not be confirmed as the well was not excavated due to safety concerns. Fragments of frogged brick were visible in the well's backfill, but these cannot be taken as being indicative of any more than its disuse date, and its construction date is unknown.



2.9 Phase 7: Modern, but Predating the Clarence Hotel (post-1750)

The features and deposits assigned to Phase 7 (G18) were treated thus on the basis of stratigraphic evidence: they were later than the post-medieval features in Phase 5, but predated the construction of the Clarence Hotel building. The only newly dug feature was a shallow pit (Fig. 7), which was 0.9m wide, 0.12m deep and contained fragments of modern brick and tile. The other deposits comprised layers of accumulated material: these included an ashy deposit in the south-west corner of the excavated area, which probably represents rubbish dumped from a hearth, and gravelly deposits in the south-east and south-west corners that may have been deposited to help level the ground surface. In contrast, a silty deposit overlying hearth G14 (Phase 6) is thought to have accumulated naturally.

2.10 Phase 8: Contemporary with the Clarence Hotel (post-1750)

Most of the features and deposits that were recognisably modern in date either were associated with the construction of the Clarence Hotel building or had accumulated afterwards (G19). These primarily comprised the concrete foundations of the building (Fig. 7) and a number of layers of material totalling c. 1m in depth that are thought to have been imported in order to raise the ground level immediately prior to the building's construction. A number of other features that were directly associated with the building included concrete manholes, the lower courses of a brick wall, and two modern post-holes.

2.11 Results of Watching Brief

A watching brief was undertaken during the machining of a series of foundations to the west of the archaeological excavation area as part of the construction groundworks. The foundations were arranged in three lines and ranged in size from 1.5m square to 3.4m x 2.4m (Fig. 8). Most were c. 1–1.2m deep, although those in the north-east corner were up to 2.2m deep.

A small number of features – mostly large pits – were revealed during these groundworks, but the depth of made ground meant that, except within the excavated foundations, they were largely preserved *in situ* beneath the development. A negligible finds assemblage was recovered from the features, but the limited stratigraphic and artefactual evidence available suggests that they are likely to have been post-medieval or modern. It was not possible to relate these features to the results of the open-area excavation, but they provide further evidence of the extent of pit digging in this part of Bedford in the medieval and post-medieval periods.

Remains associated with the 19th-century Clarence Hotel building were also observed in section.



4. FINDS REPORTS

4.1 Pottery

4.1.1 Introduction

The assemblage totals 779 sherds, representing approximately 693 vessels (7.5kg). The majority of the pottery spans the late Saxon and early medieval periods (*c.* mid-9th–13th centuries), with smaller quantities of later medieval and post-medieval wares, plus a single sherd of middle Saxon Maxey ware and two middle to late Iron Age sherds (Table 1). Hand-collected vessels comprise the bulk of the assemblage, with 23 sherds (50g) occurring in the sieved residues of environmental samples.

The range of fabric types and vessel forms is closely comparable with pottery recovered from the evaluation (Headland Archaeology 2015), and numerous excavations within the medieval core of the town (Baker *et al.* 1979; Steadman 1999; Albion Archaeology 2006; Albion Archaeology 2008b).

Phase	Iron Age & Saxon		Late Saxon		Early medieval		Late medieval		Post-med/modern		Total	
	Sherd	Wt. (g)	Sherd	Wt. (g)	Sherd	Wt. (g)	Sherd	Wt. (g)	Sherd	Wt. (g)	Sherd	Wt. (g)
2	1	25	159	1,670	9	96	-	-	-	-	169	1,791
3	2	34	336	2,642	49	387	-	-	-	-	387	3,063
4	-	-	21	247	74	658	44	446	13	62	152	1,413
5	-	-	-	-	5	39	16	486	27	612	48	1,137
6	-	-	15	68	7	35	-	-	-	-	22	103
8	-	-	-	-	-	-	-	-	1	1	1	1
Total	3	59	531	4,627	144	1,215	60	932	41	675	779	7,508

Table 1: Quantification by Phase and pottery date

4.1.2 Methodology and Pottery Type Series

Pottery was quantified by minimum vessel and sherd count, and weight. Fabrics are summarised by chronological period in accordance with the Bedfordshire Ceramic Type Series (Table 2). Vessel forms and attributes (decoration, manufacturing techniques and levels of abrasion), together with evidence for use (deliberate modification, and the presence of residues and wear marks) were recorded. All information was quantified on an Access database. The assemblage is discussed chronologically by fabric, form and deposition across the study area.

4.1.3 Late Saxon (68% of total assemblage, by sherd count)

The late Saxon assemblage totals 531 sherds, representing 479 vessels (4.6kg). The pottery is well fragmented, with a mean sherd weight (MSW) of 9g, and uniformly abraded. Most of the assemblage comprises shell-tempered, wheel-thrown vessels in the St Neots-ware tradition (fabric B01 and variants), datable from the mid-9th to early 12th centuries. A glazed sherd (13g) from a 10th–12th-century Stamford-ware vessel represents a regional fine-ware import from Lincolnshire. St Neots-ware forms present are bowls and jars, the latter with simple everted rims measuring 120–280mm in diameter. Bowls have characteristic inturned, hammerhead and plain upright rims (diameter 220–290mm). A partial bowl socket or spout and two jugs are also present. Decoration is rare, and mainly comprises fingertip impressions, either in the form of applied strips or directly impressed into jar rims. One vessel has an applied horizontal



strip decorated with cruciform stamps (*cf.* Baker and Hassall 1979, fig. 96: 95). The exterior surfaces of 58 vessels are sooted, indicating their use as cooking pots.

Fabric Type	Common name	No. sherds	Wt. (g)
<i>Iron Age</i>			
F03	Grog and sand	2	34
<i>Saxon</i>			
A11	Maxey-type	1	25
<i>Late Saxon</i>			
B01	St Neots-type ware	177	1,440
B01A	St Neots-type (orange)	97	767
B01B	St Neots-type (fine)	188	1,772
B01C	St Neots-type (mixed)	64	576
B04	St Neots-type (coarse)	4	59
C12	Stamford ware	1	13
<i>Medieval</i>			
B07	Shell	35	410
B09	Lyveden/Stanion ware	2	21
C01	Sand	20	124
C02	Sand (red quartz)	1	8
C03	Fine sand	13	102
C04	Coarse sand	13	97
C05	Sand (red margins)	22	176
C09	Brill/Boarstall ware	2	15
C10	Potterspury ware	2	9
C59A	Coarse sand (pasty)	14	68
C59B	Harsh sand	21	186
C71	Sand (buff-grey cored)	2	19
E01	Late medieval reduced	14	156
E01D	Late medieval reduced (buff-red margins)	7	66
E02	Late medieval oxidised	27	597
<i>Late medieval/early post-medieval</i>			
E03	Smooth oxidised ware	12	113
P12	Cistercian ware	8	29
P28C	Midland Purple	13	164
<i>Post-medieval</i>			
P01	Glazed red earthenware	5	139
P03	Black-glazed earthenware	4	184
P14	Blackware	3	18
P23	German stoneware (Raeren)	3	65
P24	German stoneware (Cologne)	1	4
P25	German stoneware (Frechen)	1	49
P33	Tin-glazed earthenware	1	18
<i>Modern</i>			
P38	Cream ware	2	5

Table 2: Pottery Type Series

4.1.4 Medieval (26% of total assemblage, by sherd count)

Medieval pottery totals 204 sherds, representing 188 vessels (2.1kg). In common with the late Saxon assemblage, early and high medieval wares (144 sherds) are well fragmented (MSW 8g), and generally abraded. Later medieval wares (60 sherds) survive in better condition, with a MSW of 16g. The assemblage principally comprises a range of handmade and wheel-thrown 12th–13th-century unglazed sandy wares (fabrics C01–C05, C59A/B and C71), and contemporary shell-tempered wares (B07). The latter are known to derive from production centres on the Bedfordshire / Buckinghamshire / Northamptonshire borders. Sandy wares are likely to be of local



manufacture, although no specific kilns are known. Vessels forms are jars with everted or square rims (diameter 150–220mm), one with a vertical applied thumbed strip and two with combed decoration. Several have sooted exteriors.

High-medieval regional fine-ware imports from Northamptonshire (Potterspury and Lyveden/Stanion ware) and Buckinghamshire (Brill/Boarstall ware) are represented by six sherds (45g), most deriving from glazed jugs

Pottery of 14th–15th-century date comprises 21 sand-tempered sherds in the south-east Midlands Late Medieval Reduced Ware tradition, and 27 contemporary oxidised sherds (total weight 819g). Diagnostic forms are square rim jars and large straight-sided bowls with rectangular rims.

Transitional late medieval / early post-medieval pottery (306g) comprises undiagnostic oxidised sand-tempered wares and four drinking vessels in Midland Purple and Cistercian ware.

4.1.5 Post-medieval (5% of total assemblage, by sherd count)

Eighteen post-medieval sherds (477g) comprise lead-, iron- and tin-glazed earthenwares (bowls and dishes) of 17th–18th-century date, and a small quantity of Black-ware and German stoneware drinking vessels. All sherds are well preserved, with a mean weight of 17g.

4.1.6 Provenance

Phase 2

The majority of the late Saxon assemblage derived from quarry pits G21 (126 sherds: 1.3kg), principally the south-east one, which yielded 692g. The latter also contained a residual body sherd of middle Saxon Maxey-type ware (25g). A further 33 late Saxon sherds (332g) derived from pit G2, in addition to nine intrusive early medieval sherds (96g).

The late Saxon pottery is highly fragmented: most vessels are represented by only one or two sherds and weigh less than 50g. The largest single pot assemblage comprises only five sherds (117g).

Phase 3

Composition of the Phase 3 assemblage, which comprises large quantities of late Saxon pottery and smaller amounts of medieval wares, suggests post-depositional disturbance and/or contamination of the various features (Table 3). Similarly disturbed deposits have been recorded on other sites within the town, particularly in the environs of Castle Lane, where late Saxon pottery was prevalent across all phases (Albion Archaeology 2008b).

Eighty-seven percent of the Phase 3 assemblage (by sherd count) dates to the late Saxon period (336 sherds: 2.6kg), with only 49 sherds (385g) of early medieval date. Overall, the degree of fragmentation is high and few vessels are represented by more than one sherd. The largest vessel comprises 23 abraded sherds and weighs only 170g.



The majority of the Phase 3 assemblage was collected from quarry pit G6 (1.7kg), with negligible mixed late Saxon and early medieval assemblages deriving from pits G4 and G23, post-holes G3 and G22, roadside ditch G7, and putative latrine G5. The latter also contained two residual middle to late Iron Age sherds (34g).

Group	Late Saxon		Early medieval		Total	
	Sherd	Wt. (g)	Sherd	Wt. (g)	Sherd	Wt. (g)
G3 Four post-holes	13	69	5	15	18	84
G4 Four shallow pits	30	222	4	54	34	276
G5 Possible latrine	28	276	12	125	40	401
G6 Quarry pit	213	1,749	5	38	218	1,786
G7 Roadside ditch	11	126	2	18	13	147
G22 Post-hole	5	8	6	58	11	66
G23 Pit	36	192	15	79	51	271
Total	336	2,642	49	387	385	3,031

Table 3: Phase 3 Late Saxon and medieval pottery quantification by group

Phase 4

The assemblage derived almost entirely from quarry pits G9 and G20, with just two sherds occurring in boundary ditch G8. Quarry pits G9 yielded 51 sherds (459g), and quarry pit G20 yielded 99 sherds (937g); 111 vessels are represented overall from these quarry pits, all but three of which weigh less than 50g.

Phase 5

The upper deposits (G10) of quarry pit G9 yielded 39 late medieval and post-medieval sherds (1kg), with a further nine sherds (100g) deriving from pits G11. Although more robust than the late Saxon and early medieval wares, most vessels are similarly represented by only one or two sherds and weigh less than 100g. The largest single pot is represented by six sherds (395g) from the base and lower body of a late medieval oxidised jar.

Phase 6

Twenty-two late Saxon and early medieval sherds (103g) were collected from putative hearth G14 and post-holes G15. Several derive from the sieved residues of environmental samples and are accordingly fragmented and poorly preserved.

Phases 7 and 8

No pottery was collected from Phase 7 features. A tiny sliver (1g) of Cistercian ware derived from one of the Phase 8 deposits (G19).

4.2 Building Material

4.2.1 Ceramic roof tiles

Sand-tempered peg tiles weighing 14.3kg were collected, the majority deriving from features assigned to Phases 4 and 5. Flat roof tile is known to have been used in Bedford from the late 13th century (Baker *et al.* 1979, 253), although given the context of their recovery it is likely that most of the Clarence Hotel examples are of later medieval or post-medieval date.

Peg tiles have either round or square holes for attachment and range in thickness between 13mm and 22mm. No complete examples occurred. Most tiles are likely to be



of local manufacture, although one fragment of glazed tile from Lyveden, Northamptonshire, attests the use of materials from further afield. Roof tiles weighing approximately 7kg and 2.5kg were sampled respectively from Phase 4 quarry pits G9 and related Phase 5 deposits G10. A further sample (1.5kg) was collected from Phase 5 pits G11. This material was quantified and recorded, but not retained due to its undiagnostic nature.

Roman building material comprises a fragment of possible abraded roof tile (*tegula*) (99g), occurring as a residual find in Phase 4 ditch G8. Small quantities of Roman building material are known from other sites in Bedford (Baker *et al.* 1979, 254; Albion Archaeology 2008b).

4.2.2 Stone roof tiles

Thirteen fragments deriving from ten limestone roof tiles were collected, most in association with ceramic roof tiles in Phase 4 quarry pits G9. They are likely to be of 15th-century or later date (Oakley 1979, 327). None retain original edges, and drilled circular nail holes on five examples are the only diagnostic traits. The limestone used for their manufacture is thought to derive from Northamptonshire (Oakley 1979, 327).

4.3 Other Artefacts

The assemblage comprises a range of personal items and objects associated with domestic activity. All are incomplete, and are likely to represent casual losses. Few items are closely datable. Bulk finds comprise 1.5kg of ferrous slag, representing smelting debris (mainly tap slag) from a bloomery furnace, and fragments of 21 iron timber nails (Table 4).

Phase	Group	Finds Summary
2	G2: Pit	Iron stylus (RA2)
	G21: Three quarry pits	Ferrous smelting slag (848g)
3	G6: Quarry pit	Ferrous smelting slag (234g)
	G7: Roadside ditch	Bone dress pin (RA1); lead alloy caulking (RA11); ferrous smelting slag (122g)
	G23: Pit	Ferrous smelting slag (80g)
4	G9: Three quarry pits	Copper alloy book clasp (RA9); iron ring (RA16); clay tobacco pipe (2g); iron nails x9; ceramic land drain (242g); ferrous smelting slag (53g); window glass x1
	G20: Quarry pit	Ferrous smelting slag (162g); window glass x1
5	G10: Upper fill of earlier quarry pit	Antler tuning peg (RA3); iron shoeing nail (RA4); iron key (RA5); iron objects (RA6–7); iron knife (RA8); iron nails x5; vessel glass x1; window glass x2
	G11: Two pits	Iron strip/sheet fragments (RA12–15); clay tobacco pipe (14g); iron nails x7; vessel glass x7; window glass x1
6	G14: Probable hearth	Iron sheet fragment (RA17)
	G15: Three post-holes	Ferrous smelting slag (30g)
7	G18: Assorted features	Copper-alloy grave letter (RA10)
	G19: Assorted features	Clay tobacco pipe (3g)

Table 4: Quantification of Other Artefacts by Phase and Group

4.3.1 Provenance

Phase 2

The fill of pit G2 contained a damaged iron stylus (RA2 – Figure 9), broadly ranging in date from the 8th/9th centuries into the medieval period. The object has a rounded and tapering shaft ending in a point. The upper portion has three moulded spherical



bulges and a flat, triangular head. X-ray analysis revealed a collar in the form of a spherical bulge at the junction of the head and shaft.

Phase 3

Roadside ditch G7 yielded a Saxon or Anglo-Scandinavian pig-fibula dress pin (bone) with a perforated head (RA1 – Fig. 10), and an undatable L-shaped piece of lead alloy caulking (RA11).

Phase 4

A 15th–16th-century copper-alloy book clasp (RA9 – Fig. 11) and an undated, heavily corroded and concreted iron ring (RA16) derived from quarry pits G9. The clasp is long and narrow with a hooked terminal; the opposing end is bifurcated and has scalloped edges, with a small circular perforation in each protrusion, one retaining an *in situ* rivet. The object bears incised double-ring and dot decoration. The pits also contained a piece of window glass with grozed edges and a fragment of clay tobacco pipe stem.

Phase 5

The upper deposits (G10) of Phase 4 quarry pit G9 yielded five iron objects and an antler tuning peg (RA3 – Fig. 12), the latter broadly datable to AD1300–1600. A rectangular-headed shoeing nail (RA4) of 14th–15th-century origin is the only datable iron object. More enigmatic are a possible bit from a rotary key (RA5), a tanged implement (weeding hook? RA6), a strap fragment (RA7) and a knife or shears blade (RA8 – Fig. 13). The deposits also contained the base of a globular glass phial, datable to the second half of the 17th century, and a poorly preserved fragment of window glass.

Phases 6 and 7

Putative hearth G14 (Phase 6) and modern deposits G18 (Phase 7) respectively yielded an undiagnostic iron sheet fragment (RA17) and a copper-alloy grave letter ‘M’ (RA10 – Fig. 14), the latter datable to AD1300–1350. A piece of clay tobacco pipe stem (3g) derived from Phase 7 levelling layer G19.

4.4 Animal Bone

4.4.1 Methodology

All the bones and teeth recovered from the excavations (both hand-collected and sieved) were recorded individually on a Microsoft Access database, which forms part of the site archive. In the main database table, the following information was recorded where appropriate for each specimen: species; anatomical element; zones of bone present; approximate percentage of bone present; gnawing damage; erosion; weathering; burning (charring and calcification); fusion data; associated bone group (ABG) number; sample number; and other comments including observations of pathology and bone-working. Separate tables linked to the main table by an individual identification number were created for metrical, butchery and tooth-ageing data. Tooth eruption and wear descriptions for cattle, sheep/goat and pig follow the method of Grant (1982). Most measurements are those described by von den Driesch (1976).



4.4.2 Bone preservation and overall sample size

Animal bones were retrieved from 57 contexts. The assemblages from each context were assigned to one of five potential preservation grades (Table 6). All the assemblages fell into two of these grades. Twenty-nine were classified as having quite good preservation but with evidence of gnawing or other damage on some of the bones. Twenty-eight assemblages were graded as moderate. Bones in such assemblages generally had fair surface preservation but also included substantial numbers of gnawed and weathered specimens. Phases 2 and 4–5 had more assemblages with better preservation than those from Phase 3. Table 7 shows the number of fragments found in the assemblages of different grades. Most bones were associated with assemblages that had been assigned to quite good preservation categories, in all phases apart from Phase 6. Gnawing damage was observed on 56 (9%) of the identified elements. Only one of the identified fragments was described as eroded, and 52 (8%) as weathered. Forty-eight fragments were recorded as burnt, most (36) of which were unidentified fragments.

Phase	Very Good	Quite Good	Moderate	Quite Poor	Very Poor	Total
2	-	7	5	-	-	12
3	-	8	15	-	-	23
4	-	3	1	-	-	4
5	-	7	4	-	-	11
6	-	4	-	-	-	4
7	-	-	3	-	-	3
Total	0	29	28	0	0	57

Table 6: Animal bone preservation by Context

Phase	Very Good	Quite Good	Moderate	Quite Poor	Very Poor	Total
2	-	167	83	-	-	250
3	-	158	122	-	-	280
4	-	91	46	-	-	137
5	-	172	23	-	-	195
6	-	297	-	-	-	297
7	-	-	37	-	-	37
Total	0	885	311	0	0	1,196

Table 7: Animal bone preservation (NISP)

Altogether, 1,196 animal bone fragments were recorded from Phases 2–6 (Table 8). Phase 2 deposits (late Saxon / Saxo-Norman) accounted for 250 of these, 127 of which were identified. Phase 3 deposits (early medieval) provided 280 fragments, including 138 identified elements, while late medieval / early post-medieval features (Phase 4) produced a further 137 fragments, with 86 identified specimens. Phase 5 (post-medieval) deposits produced 297 fragments that incorporated 153 identified elements. Only three identified elements were recovered from undated contexts (Phase 6). Sieved samples produced 66 fragments, only eight of which were identifiable elements. No complete or partial skeletons were recovered.

4.4.3 Provenance

Phase 2

The three quarry pits (G21) produced a total of 196 animal bone fragments including 114 identified to sheep/goat (50), cattle (46), pig (12), horse (1), cat (1), chicken (2)



and goose (2). Pit G2 provided a further 54 fragments but only 13 of these were identified to sheep/goat (8), cattle (3) and pig (2). Most (32) of the unidentified fragments came from a sieved sample. Neither group contained significant accumulations of particular elements indicative of large-scale processing. At least six sheep and four cattle were represented by horned skull fragments.

	Phase					Total	Sieved
	2	3	4	5	6		
Cattle	49	52	56	68	-	225	-
Sheep/Goat	58	57	96	51	1	263	5
Pig	14	24	21	31	2	92	3
Horse	1	2	-	-	-	3	-
Dog	-	-	2	2	-	4	-
Cat	1	1	-	-	-	2	-
Total Mammal	123	136	175	152	3	589	8
Chicken	2	2	9	1	-	14	-
Goose	2	-	4	-	-	6	-
Mallard	-	-	1	-	-	1	-
Other Duck	-	-	2	-	-	2	-
Total Bird	4	2	16	1	0	23	0
Total Identified	127	138	191	153	3	612	8
Unid. Mammal	123	139	131	140	34	567	66
Unid. Bird	-	3	10	2	-	15	-
Unid. Fish	-	-	-	2	-	2	-
Total unidentified	123	142	141	144	34	584	66
Total	250	280	332	297	37	1,196	74
Sheep	11	6	20	12	-	49	-
Goat	-	3	-	-	-	3	-

Counts are of numbers of individual specimens (NISP). Total includes bones from sieved samples

Table 8: Animal bone species counts by Phase

Phase 3

Quarry pit G6 produced the largest bone assemblage from this phase. It comprised 108 fragments, of which 65 were identified to cattle (31), sheep/goat (22), pig (10), horse (1) and chicken (1). Cattle included a complete metatarsal, but the remainder of the assemblage was fragmentary. The sheep/goat assemblage included two horn cores and three limb bones of goat.

Animal bones were found in three of the post-holes G3, but only 22 fragments were recorded, among which elements of sheep/goat (6), pig (2) and cattle (1) were identified, including a mandible of a neonatal lamb. Two bird bones were included in the unidentified material. Post hole G22 produced only two animal bone fragments, including a charred fragment of sheep/goat humerus.

Animal bones were found in all four pits in G4, with a total of 40 fragments including 20 identified as cattle (7), sheep/goat (6), pig (6) and chicken (1). A fairly substantial portion of a pig skull including a maxilla was recovered. Pit G23 provided 18 fragments, including those of sheep/goat (3), cattle (2) and pig (1).



The fills of latrine G5 produced 50 fragments, of which 18 were identified as sheep/goat (11), cattle (6) and horse (1). The horse bone was a largely complete scapula but the rest of the bones were quite fragmented.

Thirty-nine fragments were recovered from roadside ditch G7, including 19 identified elements from sheep/goat (8), cattle (5), pig (5) and cat (1). A bird bone was recorded amongst the unidentified material. Several of the bones showed signs of weathering.

Phase 4

All but eight of the 332 animal bones recorded in this phase were retrieved from quarry pits G9 and G20. It was possible to identify 188 of these, including sheep/goat (94), cattle (56), pig (20) and dog (2). Eleven of the cattle elements belonged to young calves. A sawn cattle metatarsal in G9 was an offcut from working. Sheep/goat cranial (20) and foot (13) elements were well represented in G20, with substantial parts of two horned sheep skulls from G9, and there were also eight butchered vertebrae overall. It is possible that some of the sheep/goat bones originally came from a butcher's primary processing waste.

Bird bones (18) were unusually common in this assemblage. Four species were represented amongst the sixteen identified bones. Chicken (9) was the most common, in addition to which there were goose (4), a single find of a mallard-sized duck, and two from a smaller species of duck. Nine of the bird bones showed evidence of burning, including the goose and both duck bones from G20. Charring was also observed on eight mammal fragments from this quarry pit.

The two bones from ditch G12 both belonged to sheep/goat. One consisted of a sizable portion of a hornless sheep skull; the other was a burnt maxilla fragment. Ditch G8 produced six fragments, only one of which (a butchered pig pelvis) was identified.

Phase 5

The upper fills (G10) of quarry pits G9 produced 164 animal bone fragments, of which 76 were identified. Cattle elements (35) were the most common, followed by sheep/goat (25), pig (12), dog (1) and chicken (1). Calf elements (11) were again a common component of the cattle assemblage.

Of the two pits that formed G11, no bones were found in the southern one but the northern one produced 133 fragments, of which 79 were identified as cattle (33), sheep/goat (26), pig (19) and dog (1). The unidentified fragments included two of fish. Eleven of the cattle bones belonged to young calves. Two quite large cattle horn cores and substantial portions of skulls of a pig and a hornless sheep were also recovered.

4.4.4 Discussion

The assemblages from each phase are of modest size from a limited range of contexts, which limits the depth of interpretation. The results will be compared where appropriate with evidence from previous zooarchaeological analyses from Bedford, particularly the Castle Lane and 23–27 High Street (Castlegate) assemblages (Maltby nd1; nd2).

Cattle



Cattle elements were the second most commonly identified, providing 37% of the identified fragments in the overall assemblage (Table 8). The highest percentage (44%) of cattle was obtained from post-medieval deposits (Phase 5) but cattle were outnumbered by sheep/goat in the assemblages from all the earlier phases. However, more assemblages are required from a greater range of deposits from other areas of Bedford to determine whether this represents a genuine change towards the consumption of more beef in the post-medieval period. One should expect significant variations between contemporary assemblages within towns, where complex patterns of preparation, redistribution, consumption, disposal and preservation of carcasses will be encountered. This can be demonstrated with regard to the Phase 2–3 assemblages, in which the percentages of cattle (40% and 38% respectively) were significantly lower than those obtained from late Saxon, Saxo-Norman and early medieval assemblages from the Castle Lane and Castlegate sites, where cattle were the best represented species throughout, providing over 53% of the identified species on both sites (Maltby nd1; nd2). Given the much larger size of cattle carcasses, however, beef would have been comfortably the most commonly consumed meat in the town.

	Phase				NISP Total	%
	2	3	4	5		
Horn core	5	2	-	3	10	4.4
Maxilla	2	-	-	2	4	1.8
Skull	4	4	6	13	27	12.0
Mandible	3	7	2	4	16	7.1
Hyoid	1	-	-	-	1	0.4
Loose Teeth	1	3	3	1	8	3.6
Scapula	2	4	6	1	13	5.8
Humerus	2	-	3	4	9	4.0
Radius	3	2	3	1	9	4.0
Ulna	2	3	-	-	5	2.2
Pelvis	6	3	2	7	18	8.0
Femur	2	2	7	3	14	6.2
Patella	-	-	-	2	2	0.9
Tibia	5	7	5	3	20	8.9
Carpals	1	1	-	-	2	0.9
Astragalus	-	-	-	1	1	0.4
Calcaneus	1	1	-	1	3	1.3
Centroquartal	-	-	1	-	1	0.4
Metacarpal	1	1	-	1	3	1.3
Metatarsal	4	4	4	7	19	8.4
Metapodial	-	1	-	1	2	0.9
Phalanx 1	-	2	-	1	3	1.3
Phalanx 2	-	1	1	1	3	1.3
Phalanx 3	-	1	-	-	1	0.4
Atlas (VC1)	1	-	-	-	1	0.4
Axis (VC2)	-	-	1	2	3	1.3
Cervical V	-	-	1	-	1	0.4
Thoracic V	-	2	2	5	9	4.0
Lumbar V	1	-	1	-	2	0.9
Sacral V	1	-	1	-	2	0.9
Caudal V	-	-	-	1	1	0.4
Ribs	1	1	7	3	12	5.3
Total	49	52	56	68	225	
MNI	4	2	5	3	-	

MNI = minimum number of individuals represented

Table 9: Cattle element counts (NISP)



There were no large accumulations of cattle bones that indicated disposal from large-scale processing. Variations in the numbers of cattle elements represented (Table 9) largely reflect their relative robustness and propensity to fragment. Skull fragments were the most commonly recorded category, particularly in post-medieval Phase 5, where the numbers were enhanced by the presence of parts of several calf skulls. Horn cores were found in three of the phases, including Phase 5, but there was no evidence for any accumulation of large numbers of horn cores such as the one found in a post-medieval pit on the adjacent St John Street site (Albion Archaeology 2008a, 25).

Although mandible fragments were quite well represented, they were less prominent than in the cattle assemblages from Castle Lane and Castlegate. Metatarsals were well represented throughout, but only three cattle metacarpal fragments were recovered from the excavations. The tibia was also better represented than its front leg counterparts (radius and ulna), perhaps implying different trajectories for the butchery, distribution and disposal of cattle forequarters and hindquarters on this site. Vertebral bodies and rib heads, although generally under-represented because of their fragility, were better represented in the Phase 4–5 deposits, particularly reflecting the presence of more trunk bones of calves in these later medieval and post-medieval deposits (Table 9). These are more likely to have been brought to households for cooking than the vertebrae of older cattle, which were often discarded at an earlier stage of processing after the flanks had been removed.

Butchery marks were observed on 33 cattle elements, including four which had evidence for more than one type of mark. They were observed on 11 vertebrae, mainly from Phases 4–5. Most of these butchered specimens were vertebrae that had been split along the cranial-caudal axis when the flanks of the animals were removed. A lumbar vertebra from Phase 2 and a cervical vertebra from Phase 4 had been transversely split where the spine had been sectioned. A rib head from Phase 4 had been sliced through when the rib had been separated from the thoracic vertebra, and another rib from Phase 4 bore evidence of cuts on the shaft where the rib had been sliced through. The blades of two scapulae (one from Phase 2, the other from Phase 4) had been sliced through in similar manners, showing where the shoulder had been separated from the trunk. A humerus from Phase 4 had been chopped through the distal end when separated from the radius and ulna. A calf radius, also from Phase 4, bore deep knife cuts across its shaft near to where the bone had been broken during dismemberment. A radius of an older animal from the same phase had been split longitudinally to remove the marrow.

Butchery marks of various types were observed on six of the cattle pelvises. Most were associated with dismemberment. A pubis from Phase 2 had a fine knife cut near the acetabulum; a second pubis from this phase bore a deeper blade mark that had removed a scoop of bone from the ventral aspect of the shaft. Two pelvises (from Phases 3 and 4) had been chopped through the acetabulum and the shaft of the ischium respectively. Deep knife cuts were observed in the vicinity of the acetabulum of two specimens from Phase 5. Longitudinal chop marks were observed around the distal end of two femora (Phase 4), and deep transverse chop marks were observed on the shafts of two Phase 5 proximal tibiae, situated just above where they had been broken.



Superficial chop marks on the posterior aspect of the proximal articular surface of a cattle metatarsal from Phase 2 indicate dismemberment of the foot at the hock joint. Fine knife cuts around a first phalanx from Phase 3 were made during skinning. Finally, quite deep knife cuts on the lateral part of a temporal from Phase 4 were probably inflicted during the separation of the mandibles from the skull.

The evidence suggests that a variety of butchery implements were used to process cattle carcasses. Many of the butchered specimens have parallels to those recorded at Castle Lane (Maltby nd1), but this sample is too small on its own to determine whether patterns of butchery changed significantly through time.

Cattle	Phase				Total
	2	3	4	5	
Stage 2	-	-	-	3	3
Stage 7	-	1	-	-	1
Total	0	1	0	3	4
Sheep/Goat	2	3	4	5	Total
Stage 1	-	1	-	-	1
Stage 2	-	1	-	-	1
Stage 4	-	2	1	-	3
Stage 5	-	1	3	-	4
Stage 6	1	-	1	-	2
Stage 6–7	-	-	1	-	1
Stage 7	1	-	1	-	2
Total	2	5	7	0	14
Pig	2	3	4	5	Total
Stage 1	-	-	-	1	1
Stage 3	-	1	-	2	3
Stage 4–5	-	-	-	1	1
Stage 6	1	-	-	-	1
Stage 7	-	1	-	-	1
Total	1	2	0	4	7

Stage 1 = 4th deciduous premolars (dp4) not in wear

Stage 2 = dp4 in wear; 1st molar (M1) not in wear

Stage 3 = M1 in wear; 2nd molar (M2) not in wear

Stage 4 = M2 in wear; 3rd molar (M3) and permanent premolars not in wear

Stage 5 = M3 in wear; 4th permanent premolar (P4) not in wear (Cattle)

Stage 5 = M3 in wear; M1 at Grant (1982) wear stage g (S/G)

Stage 5 = P4 in wear; M3 not in wear (Pig)

Stage 6 = P4 in wear; M3 < Grant wear stage k (Cattle)

Stage 6 = M1 at Grant wear stages h–m; M2 at Grant wear stage g (S/G)

Stage 6 = M3 at Grant wear stages a–b (Pig)

Stage 7 = M3 at Grant wear stages k–m (Cattle)

Stage 7 = M1 and M2 at Grant wear stages h–m (S/G)

Stage 7 = M3 at Grant wear stages c–g (Pig)

Table 10: Cattle, sheep/goat and pig mandibular tooth ageing data

Only four cattle mandibles provided tooth ageing evidence (Table 10). One from Phase 2 came from a mature adult, whereas three from post-medieval Phase 5 deposits all belonged to young calves that were no more than a few weeks old. Two maxillae from the same phase belonged to calves of similar age. The epiphyseal fusion data did not reflect the presence of young calves (Table 11), probably because the epiphyseal fusion surfaces of the bones did not survive, but whereas only a single cattle bone was



recorded as porous in each of Phases 2–3, ten bones from Phase 4 and 24 from Phase 5 were recorded as porous or very porous. The proportion of porous bones from young calves also increased in the late medieval deposits from Castle Lane (Maltby nd1); veal consumption in Bedford seems to have increased significantly from this period onwards. This reflects the increased importance of milk production that is commonly observed elsewhere in England, including settlements in the Midlands (Albarella 2005; Sykes 2006: 64–5). Surplus calves from dairy herds were slaughtered for veal.

	Phase 2		Phase 3		Phase 4		Phase 5	
<i>Cattle</i>								
Early Fusing	Unfused	Fused	Unfused	Fused	Unfused	Fused	Unfused	Fused
Radius P	-	-	-	1	-	1	-	-
Scapula D	-	-	-	-	-	-	-	-
Acetabulum	-	3	-	-	-	1	-	2
Humerus D	-	-	-	-	-	2	-	1
1st Phalanx P	-	-	-	2	-	-	-	1
2nd Phalanx P	-	-	1	-	-	-	-	1
Total	0	3	1	3	0	4	0	5
Later Fusing	Unfused	Fused	Unfused	Fused	Unfused	Fused	Unfused	Fused
Tibia D	1	1	-	-	-	1	-	-
Metacarpal D	-	-	-	-	-	-	-	-
Metatarsal D	-	1	-	1	1	-	2	1
Metapodial D	-	-	-	1	-	-	1	-
Total	1	2	0	2	1	1	3	1
Latest Fusing	Unfused	Fused	Unfused	Fused	Unfused	Fused	Unfused	Fused
Ulna P	-	-	-	-	-	-	-	-
Femur D	-	-	-	-	3	1	-	-
Radius D	-	1	-	-	-	-	-	-
Humerus P	1	-	-	-	-	-	-	1
Femur P	-	-	-	-	-	-	-	-
Calcaneus P	1	-	-	-	-	-	1	-
Tibia P	1	-	-	-	-	-	-	1
Total	3	1	0	0	3	1	1	2
<i>Sheep/Goat</i>								
Early Fusing	Unfused	Fused	Unfused	Fused	Unfused	Fused	Unfused	Fused
Radius P	-	1	-	3	-	6	-	4
Scapula D	-	-	-	-	-	1	-	-
Acetabulum	-	1	-	1	-	1	-	1
Humerus D	1	1	-	2	-	-	-	1
1st Phalanx P	-	1	-	-	-	3	-	-
2nd Phalanx P	-	-	-	-	-	1	-	-
Total	1	4	0	6	0	12	0	6
Later Fusing	Unfused	Fused	Unfused	Fused	Unfused	Fused	Unfused	Fused
Tibia D	-	-	-	2	-	-	-	1
Metacarpal D	-	-	-	1	-	5	-	2
Metatarsal D	-	2	-	-	-	-	-	1
Metapodial D	-	-	-	-	-	-	-	-
Total	0	2	0	3	0	5	0	4
Latest Fusing	Unfused	Fused	Unfused	Fused	Unfused	Fused	Unfused	Fused
Ulna P	-	-	1	-	-	1	-	-
Femur D	-	-	1	-	1	1	2	-
Radius D	-	-	-	-	1	1	2	-
Humerus P	-	-	-	-	-	-	-	-
Femur P	-	-	-	1	-	-	-	-



	Phase 2		Phase 3		Phase 4		Phase 5	
Calcaneus P	-	-	-	-	-	1	-	3
Tibia P	-	1	-	-	-	1	-	-
Total	0	1	2	1	2	5	4	3
Pig								
Early Fusing	Unfused	Fused	Unfused	Fused	Unfused	Fused	Unfused	Fused
Radius P	-	1	-	1	-	1	-	-
Scapula D	-	-	-	-	-	-	-	-
Acetabulum	-	-	-	-	-	-	-	-
Humerus D	-	-	-	-	1	-	-	1
2nd Phalanx P	-	-	-	-	-	-	-	-
Total	0	1	0	1	1	1	0	1
Later Fusing	Unfused	Fused	Unfused	Fused	Unfused	Fused	Unfused	Fused
1st Phalanx P	-	-	-	-	-	-	1	-
Tibia D	-	-	1	-	1	-	-	-
Metapodial D	-	-	-	-	-	-	1	-
Periph Mp D	-	-	1	-	-	-	3	-
Total	0	0	2	0	1	0	5	0
Latest Fusing	Unfused	Fused	Unfused	Fused	Unfused	Fused	Unfused	Fused
Ulna P	1	-	-	-	-	-	-	-
Femur D	-	-	-	-	-	-	-	-
Radius D	-	-	-	-	1	-	1	-
Humerus P	-	-	-	-	-	-	-	-
Femur P	-	-	-	-	-	-	-	-
Calcaneus P	-	-	2	-	-	-	1	-
Tibia P	-	-	-	-	-	-	-	-
Total	1	0	2	0	1	0	2	0

Table 11: Cattle, sheep/goat and pig mandibular epiphyseal fusion data

Because of the high fragmentation of the cattle assemblage, it was only possible to take measurements on 14 bones. Details are stored in the archive. This sample is too small to analyse in isolation, but the data will in due course contribute to a broader discussion of the history of cattle stature in the county.

A horn core from Phase 5 was much larger than three measured specimens from Phases 2–3: it had a greatest basal diameter of 67.5mm, compared with those of 39.6mm, 44.8mm and 46.5mm for the earlier specimens. It possessed a greatest curvilinear length of *c.* 260mm. Cattle with large horns became more common in the post-medieval period (Armitage and Clutton-Brock 1976), to an extent reflecting increases in stature. Horns were also commonly processed on an industrial scale in towns, often resulting in large accumulations of horn-core waste (*e.g.* Armitage 1990; Yeomans 2008).

Sheep/goat

Most sheep/goat fragments could not be further identified, but some diagnostic elements could be distinguished. Only five elements, all from Phase 3, were identified as goat. These consisted of two horn cores (one male and one female), a femur, and an associated radius and ulna from an adult animal. Evidence for horn-working, particularly of goats, has been encountered frequently on Saxon and medieval sites in the Midlands (Albarella 2003). In contrast, at least 49 of the elements belonged to sheep (Table 8), meaning that 91% of the diagnostic sheep/goat elements from the total assemblage belonged to sheep — a figure closely comparable to the results (89%)



from the large Castle Lane assemblage (Maltby nd1) and typical of British medieval and post-medieval assemblages in general.

Skull fragments were well represented in all phases (Table 12). Including maxillae, they provided over 20% of the sheep/goat assemblage. Although the counts may have been inflated slightly by the fragmentation of skulls, the percentage of skull fragments was substantially higher than encountered at Castle Lane and Castlegate (6%: Maltby nd1; nd2). Robust elements such as the tibia, mandible, radius and metapodials were also well represented throughout the phases (Table 12). More fragile elements such as the vertebrae, scapula and femur were generally much less common, and small bones such as the phalanges, carpals and tarsals were rarely recovered. The high proportion of cranial fragments and, particularly in Phase 4, metapodials indicates that this area was situated near to where the initial processing of sheep carcasses may have taken place.

	Phase				NISP Total	%
	2	3	4	5		
Horn core	2	2	-	-	4	1.5
Maxilla	3	1	7	4	15	5.7
Skull	8	4	16	10	38	14.5
Mandible	3	8	10	-	21	8.0
Loose Teeth	4	3	6	2	15	5.7
Scapula	3	2	4	-	9	3.4
Humerus	4	3	2	1	10	3.8
Radius	1	4	10	7	22	8.4
Ulna	-	2	3	1	6	2.3
Pelvis	6	4	2	2	14	5.3
Femur	-	4	2	5	11	4.2
Tibia	7	5	2	5	19	7.3
Astragalus	-	-	1	1	2	0.8
Calcaneus	-	-	1	3	4	1.5
Metacarpal	3	3	9	4	19	7.3
Metatarsal	3	3	4	4	14	5.3
Phalanx 1	2	-	3	-	5	1.9
Phalanx 2	-	-	1	-	1	0.4
Atlas (VC1)	-	-	-	1	1	0.4
Axis (VC2)	1	1	-	-	2	0.8
Cervical V	2	-	5	-	7	2.7
Thoracic V	1	-	-	-	1	0.4
Lumbar V	1	2	4	-	7	2.7
Sacral V	-	1	-	-	1	0.4
Ribs	4	5	4	1	14	5.3
Total	58	57	96	51	262	
MNI	4	4	10	2		

MNI = minimum number of individuals represented

Table 12: Sheep/goat element counts (NISP)

Butchery marks were observed on 22 (9%) of the sheep/goat bones. Five skulls from Phases 3–5 showed evidence of being split open to extract the brain. Twelve vertebrae were also recorded as butchered. Nearly all of these were associated with the splitting of the carcass into sides, sometimes down the midline of the vertebrae. In other cases the split was slightly offset. Examples were found in all phases, and similar specimens were also commonly encountered on the Castle Lane site (Maltby nd1). The practice



of splitting the trunk into roughly equal sides appears to have been routinely carried out from the Saxo-Norman period onwards.

Observations of butchery on sheep/goat limb bones were less frequent. Two calcanea (from Phases 4–5) bore fine incisions indicative of the removal of the feet, possibly with the skins. The shaft of a radius from Phase 4 bore a heavy chop near where it had been fractured during dismemberment. Incisions were observed on the shaft of an ulna and on the blade of a scapula from Phase 3.

Fourteen sheep/goat mandibles provided ageing data (Table 10). The samples from the different phases were too small to support detailed analysis. A neonatal lamb mandible was found in Phase 3, in which four of the five mandibles were from immature animals. In contrast, nearly all the seven mandibles from Phase 4 were from adults. No ageable mandibles were found in Phase 5, but four maxillae were all from adults. The limited fusion data confirmed that very few young lambs or kids were represented but that some sheep were slaughtered prior to the fusion of the latest-fusing epiphyses (Table 11). High proportions of immature mortalities were also encountered in the much larger Saxo-Norman and early medieval samples from the Castle Lane site (Maltby nd1). Unfortunately, the later medieval assemblages from both sites were too small to determine whether mortality patterns changed significantly in the later medieval period, although there are hints that there was an increase in the proportion of sheep that survived to adulthood, which would correspond with the well documented national importance of wool production in that period.

Ten of the sheep skulls had evidence for the presence of horns, with examples found in every phase. Four hornless skulls were recorded (2 each from Phases 4 and 5). A total of 37 bones were measured, and details are stored in the site archive. These can be added to the substantial datasets available from other sites in Bedford and, as in the case of cattle, will contribute to a broader discussion of the history of sheep stature in the county. A radius from Phase 4 had a greatest length of 133mm, which provided a withers height estimate of 53.5cm (Teichert 1975). This is slightly smaller than the smallest withers height estimate obtained from the Castle Lane sample (Maltby nd1). However, breadth measurements obtained from several other bones indicated the presence of much larger sheep as well. Bedford would have obtained sheep from a wide range of flocks, and substantial variation in sizes should be expected.

Pig

Pig elements provided 15% of the identified fragments overall. This figure varied between 11% and 20% in the six main phases (Table 8). These variations must be treated with caution given the relatively small sizes of the samples. However, it can be noted that the pig percentages for Phases 2 and 3 (11% and 17% respectively) were broadly similar to those obtained from contemporary Saxo-Norman and early medieval deposits from Castle Lane (Maltby nd1). Pig percentages at Castle Lane in deposits from the high medieval period were much higher, outnumbering those of other domestic mammals. High status sites such as castles have tended to produce higher percentages of pig than contemporary sites (Albarella 2006). At Clarence Hotel, the later medieval / early post-medieval pig percentage (Phase 4) decreased slightly to 11%. Decreases in pig percentages are typical of assemblages from this period in England, reflecting decline in woodland and the dominance of sheep farming



(Albarella 2005). The increase in the percentage of pig to 20% in Phase 5 represents an unusual reversal in this decline, and it will be interesting to ascertain whether this is a trend that is reflected in other post-medieval deposits in Bedford.

The elements represented in the pig assemblage were dominated by jaws, other cranial elements and loose teeth (Table 13). This is typical of pig archaeological assemblages, and reflects the greatest robustness of these elements in comparison with some of the post-cranial elements. As was the case in the sheep/goat assemblage, small foot bones were poorly represented. More unusually, both the scapula and femur were poorly represented in comparison with other upper limb bones and the pelvis. The phase assemblages, however, are too small to determine that there were any significant changes in element representation.

	Phase				NISP Total	%
	2	3	4	5		
Maxilla	-	3	2	1	6	6.7
Skull	-	1	2	5	8	8.9
Mandible	4	2	1	5	12	13.3
Loose Teeth	2	4	2	1	9	10.0
Scapula	-	-	1	-	1	1.1
Humerus	2	1	1	2	6	6.7
Radius	1	2	2	2	7	7.8
Ulna	1	1	1	-	3	3.3
Pelvis	1	2	1	3	7	7.8
Femur	-	-	1	-	1	1.1
Tibia	2	2	1	-	5	5.6
Fibula	-	1	-	2	3	3.3
Astragalus	-	-	1	1	2	2.2
Calcaneus	-	2	-	1	3	3.3
Centroquartal	-	-	-	1	1	1.1
Metacarpal	-	1	-	-	1	1.1
Metatarsal	-	1	-	1	2	2.2
Lateral Mp	-	1	-	3	4	4.4
Phalanx 1	-	-	-	1	1	1.1
Atlas (VC1)	1	-	1	1	3	3.3
Thoracic V	-	-	2	-	2	2.2
Lumbar V	-	-	1	-	1	1.1
Ribs	-	-	1	1	2	2.2
Total	14	24	21	31	90	
MNI	2	2	2	3		

MNI = minimum number of individuals represented

Table 13: Pig element counts (NISP)

Butchery marks were observed on six (7%) of the pig elements. A radius from Phase 2 bore fine incisions on the medial aspect of the proximal end made during disarticulation from the humerus. A pelvis from Phase 3 had been chopped through the ischium during dismemberment. A thoracic vertebra from Phase 4 had been chopped down the midline during the splitting of the carcass; another from the same phase had similar marks on the edge of the vertebral body. A knife cut was observed on an ilium from Phase 4 and a mandible from Phase 5 had been split through the diastema.

Only seven pig mandibles provided ageing evidence (Table 10). Most, as is to be expected, belonged to immature animals, as pigs were raised solely for meat products and could tolerate a high level of slaughter of non-breeding stock. A mandible from



Phase 6 belonged to a neonatal animal, which may indicate that some breeding pigs were kept in the vicinity. Very few limb bone epiphyseal fusion points survived (Table 11), but whereas most of the earliest-fusing epiphyses had fused, all of the later- or latest-fusing epiphyses were unfused, indicating that most pigs represented in the sample died between six months and two years of age. Four out of the eight pig jaws with surviving canines or their alveoli belonged to males.

Only five pig elements were measurable. None of these or any of the other bones were sufficiently large to be considered to be from wild boar.

Other mammals

Only three horse bones were recovered and none of these were found in later medieval or post-medieval deposits (Table 8). Horsemeat was generally not eaten by humans in medieval Britain, and the virtual absence of their remains from deposits derived mainly from carcass processing is unsurprising, although several butchered horse bones were found in early medieval deposits on the Castle Lane site (Maltby nd1). Dog bones were only recorded in Phase 4 and provided only four bones in total. Cat bones were only found in Phases 2 and 3, in each case represented by a single bone. No bones of wild mammals were identified. Their absence indicates that the inhabitants who deposited bones on this site were not of high status.

Fish and birds

Only two fish bones were retrieved, despite sieving, and neither of these (both from Phase 5) were identifiable fragments.

Chicken	Phase				NISP
	2	3	4	5	Total
Skull	-	-	1	-	1
Furcula	-	-	1	-	1
Scapula	-	-	1	-	1
Humerus	-	-	1	-	1
Radius	1	1	1	1	4
Ulna	-	-	1	-	1
Pelvis	-	1	-	-	1
Tarsometatarsus	1	-	3	-	4
Total	2	2	9	1	14
Goose	2	3	4	5	Total
Coracoid	-	-	1	-	1
Sternum	1	-	-	-	1
Scapula	1	-	-	-	1
Carpometacarpus	-	-	1	-	1
Wing phalanx	-	-	2	-	2
Total	2	0	4	0	6
Ducks	2	3	4	5	Total
Humerus	-	-	2	-	2
Tibiotarsus	-	-	1	-	1
Total	0	0	3	0	3

Table 14: Bird element counts (NISP)

A total of 23 bird bones were identified. Chicken (domestic fowl) was represented in all phases apart from Phase 5 and produced a total of 14 fragments (Table 14). A



tarsometatarsus from Phase 4 belonged to a young chick, possibly indicating that some chickens were kept near the site at that time. The remainder of the chicken bones came from adult birds. Three tarsometatarsi had spurs and probably belonged to cockerels. Only three chicken bones could be measured. A spurred tarsometatarsus from Phase 2 had a greatest length of 76.6mm, which is quite small for a male bird. A radius from Phase 5 had a greatest length of 58.0mm, which also came from quite a small bird. Goose bones were identified in Phases 2 and 4, and in total six bones were identified. All the bones belonged to adult birds. The only measurable bone was a scapula from Phase 2, which had a cranial diagonal length of 17.4mm, which falls within the range of grey lag / domestic goose, and it is likely that this and all the geese represented were domestic birds.

Three duck bones were recorded, all from Phase 4 deposits. A humerus from a mallard-sized duck could well represent a bird that was kept in captivity. A second humerus was from a smaller species, possibly a tufted duck or goldeneye, while a tibiotarsus came from a medium-sized duck, which was also smaller than a mallard.

No butchery marks were observed on any of the bird bones, but six of the identified bird bones and three unidentified bird bone fragments from quarry pit G20 (Phase 4) were burnt. Apart from two of the duck bones, none of the bird bones came from wild species, which provides a contrast with the assemblage from the early medieval phase from Castle Lane, which produced bones from several wild species including raptors. This again indicates that the inhabitants in the Clarence Hotel area were of lesser status and wealth than those from the castle and its environs.

4.5 Charred Plant Remains and Charcoal

Seven bulk soil samples were taken during the course of excavation. Three of these were processed; it was established during assessment of the site records that the other four held no significant analytical potential due to the modern or heavily disturbed nature of the deposits from which they had been taken.

Sample 4 and 7 came from undated heath G13 (Phase 6). Both samples contained frequent charcoal flecks and small lumps, as well as occasional charred cereal grains. Small fragments of animal bone were also present, some with signs of burning, as well as a small quantity of fuel ash slag that was recovered from the material between the stones on the base of the hearth (Sample 4).

Sample 5 was from late Saxon / Saxo-Norman pit G2 (Phase 2). This sample contained abundant flecks and small fragments of charcoal, together with occasional fragments of animal bone, some with signs of burning.



5. ANALYTICAL POTENTIAL OF THE DATA

5.1 *Contextual Data*

The contextual data has allowed the reconstruction of the sequence of activity on site from the late Saxon / Saxo-Norman period onwards. Much of this activity can only be dated to broad periods, due not least to a high degree of residuality in the pottery assemblage. There are also a number of features that could not be dated even to one of these broad periods. Examination of the contextual data in relation to the other datasets, however, has already achieved to the level possible, and there is no potential for further refinement of the sequence of activity on site.

Some of the features were relatively well preserved and were capable of providing insight into medieval, post-medieval and perhaps even late Saxon / Saxo-Norman settlement activity. However, their analytical potential is limited, primarily because the small size of the excavation area reduced the legibility of the remains and has hampered their interpretation. Modern activity on the site has also resulted in significant truncation of the features, although the accumulation of c. 1m of additional soil depth prior to the construction of the Clarence Hotel building at least ensured better preservation than would otherwise have been the case.

5.2 *Pottery*

The pottery assemblage comprises 779 sherds, representing approximately 693 vessels (7.5kg). Roughly two thirds of this is late Saxon / Saxo-Norman material which was mostly residual within medieval and later deposits. The assemblage is characteristic of material recovered from similar sites of the same period in Bedford, with much of the pottery produced locally. The assemblage has already been fully catalogued and analysed, and has no further analytical potential.

5.3 *Building Material*

The excavation produced 14.3kg of ceramic roof tiles, as well some fragments of stone roof tile. These mostly came from late medieval to post-medieval quarry pits, and none can be directly associated with identified structures. Most are likely to be of local manufacture, and no complete examples occur. This assemblage has no further analytical potential.

5.4 *Other Artefacts*

This relatively small assemblage attests primarily to domestic activity. Few items are closely datable, and most came from late medieval to post-medieval deposits. This assemblage has no further analytical potential.

5.5 *Animal Bone*

The overall assemblage is of modest size and derives from a limited range of contexts, limiting the depth of interpretation. The assemblage is broadly comparable with those recovered from contemporary excavation in Bedford; some minor deviations from the norm occur, but the assemblage is too small to determine whether these are truly representative. This assemblage has no further analytical potential.



5.6 Charred Plant Remains and Charcoal

Assessment of the ecofact assemblage determined that detailed analysis of it had no potential to characterise the nature of the activity associated with the features from which it was recovered.



6. RESEARCH OBJECTIVES FOR ANALYSIS

6.1 Introduction

Research strategies have been devised at a regional level by the local government archaeological officers of the east of England, who published a research agenda and strategy in 2000 (Brown and Glazebrook 2000) that was reviewed and updated in 2011 (Medlycott 2011). In addition, a resource assessment and research agenda has been established for Bedfordshire (Oake *et al.* 2007). These research strategies are vital tools for assessing the significance of archaeological remains within their local and regional context.

The research framework for Bedfordshire states that, while there have been many archaeological investigations in the centre of Bedford, the chronology and character of the town, with the exception of the castle quarter, is still not well understood (Oake 2007, 15). The development of towns in general, including changes in their internal layouts and housing densities, and their role as centres of supply and demand, have been identified as subjects in need of further study (Medlycott 2011, 70).

Following evaluation of the Clarence Hotel site, the following research aims were identified prior to its excavation:

- record, characterise and date evidence for occupation activity in the Saxon, medieval and post-medieval periods;
- examine evidence for craft/industrial activities that might have taken place there;
- identify any evidence relating to the nature and date of urban development within the circuit of the King's Ditch and the southern *burh*.

6.2 Research Objectives for Analysis

Examination of the datasets has shown them to have varying potential to address these objectives, although in all cases the small size of the site and the datasets can provide only limited answers to the questions posed. No additional research objectives have been identified.

However, there is considerable potential for the data from this site to be combined with data recovered from other recent investigations in the vicinity. Synthetic studies of this kind are beyond the scope of the present project, but deposition of the project archive with The Higgins Art Gallery & Museum will ensure the material is curated and available for future research.



7. SIGNIFICANCE OF THE RESULTS AND UPDATED PROJECT DESIGN

7.1 *Significance of the Results*

Few open-area excavations have been carried out within the historic core of Bedford south of the River Great Ouse, but work at the Clarence Hotel has demonstrated that archaeological remains from the late Saxon and medieval periods do have the potential to survive within this part of the town.

The excavation at the Clarence Hotel has revealed a sequence of phases dating to the late Saxon / Saxo-Norman period onwards. Much of this appears to represent the organic development of land on the margins of settlement, with small-scale quarrying repeatedly taking place. However, a more structured approach is evidenced by the early medieval construction of a substantial roadside ditch to define the western side of St John's Street, the main north-south road through the town. The addition of a late medieval / early post-medieval east-west ditch that may have defined the side of a burgage plot further suggests a planned approach, although the addition of a north-south ditch that appeared to define an area of quarrying and would have subdivided the putative burgage plot is more suggestive of the site's organic development.

Artefacts were recovered that are indicative of domestic activity, and the presence of post-holes and a hearth are indicative of buildings, or perhaps lesser structures, but no firm evidence was found for dwellings within the excavation area, nor for any major industrial activity (other than quarrying). This corresponds with Speed's 1610 map of Bedford, which shows a gap in the houses along St John's Street in roughly the location of the development area, although it is still possible that insubstantial dwellings with minimal foundations were present at other periods.

There appears to have been little post-medieval use of the site until the ground level was deliberately raised prior to the Clarence Hotel building's construction. This tallies with the suggestion that the street level and surrounding ground along the whole length of St John's Street was raised following the flood of 1823 (Albion Archaeology 2005a).

The remains at the Clarence Hotel site, although limited in scope, are still of interest in light of regional research themes regarding the development and role of towns as defensive settlements (*burhs*), including changes in their internal layouts and housing densities. Many towns retain their high medieval layout of market place and burgage plots, but little is understood about what preceded this and when town plots were first occupied (Medlycott 2011, 58, 70). The excavated remains at the Clarence Hotel have provided new information regarding the characteristics of the late Saxon / Saxo-Norman origins of Bedford, as well as providing evidence of changes in the internal layouts of burgage plots within the southern *burh*.

7.2 *Updated Project Design*

7.2.1 *Introduction*

Assessment of the data from the investigations has indicated that it has no potential for further analysis, principally because of the small size of the site and datasets, meaning



that the analytical limit of the contextual data and of the recovered artefacts and ecofacts has now been achieved. However, the results of the investigations are relevant to the wider history and development of Bedford, and will accordingly be disseminated further as set out below.

7.2.2 Publication

This report will be uploaded to the Archaeology Data Service's Online Access to the Index of Archaeological Investigations (OASIS ref: albionar1-145863). In addition, a summary will be prepared for submission to *South Midlands Archaeology*, which will be cross-referenced to the online OASIS entry.

7.2.3 Archiving

Following approval of this document by the HET, the archive of materials (subject to the landowner's permission) and accompanying records will be deposited with The Higgins Art Gallery & Museum (accession no. BEDFM: 2013.18).



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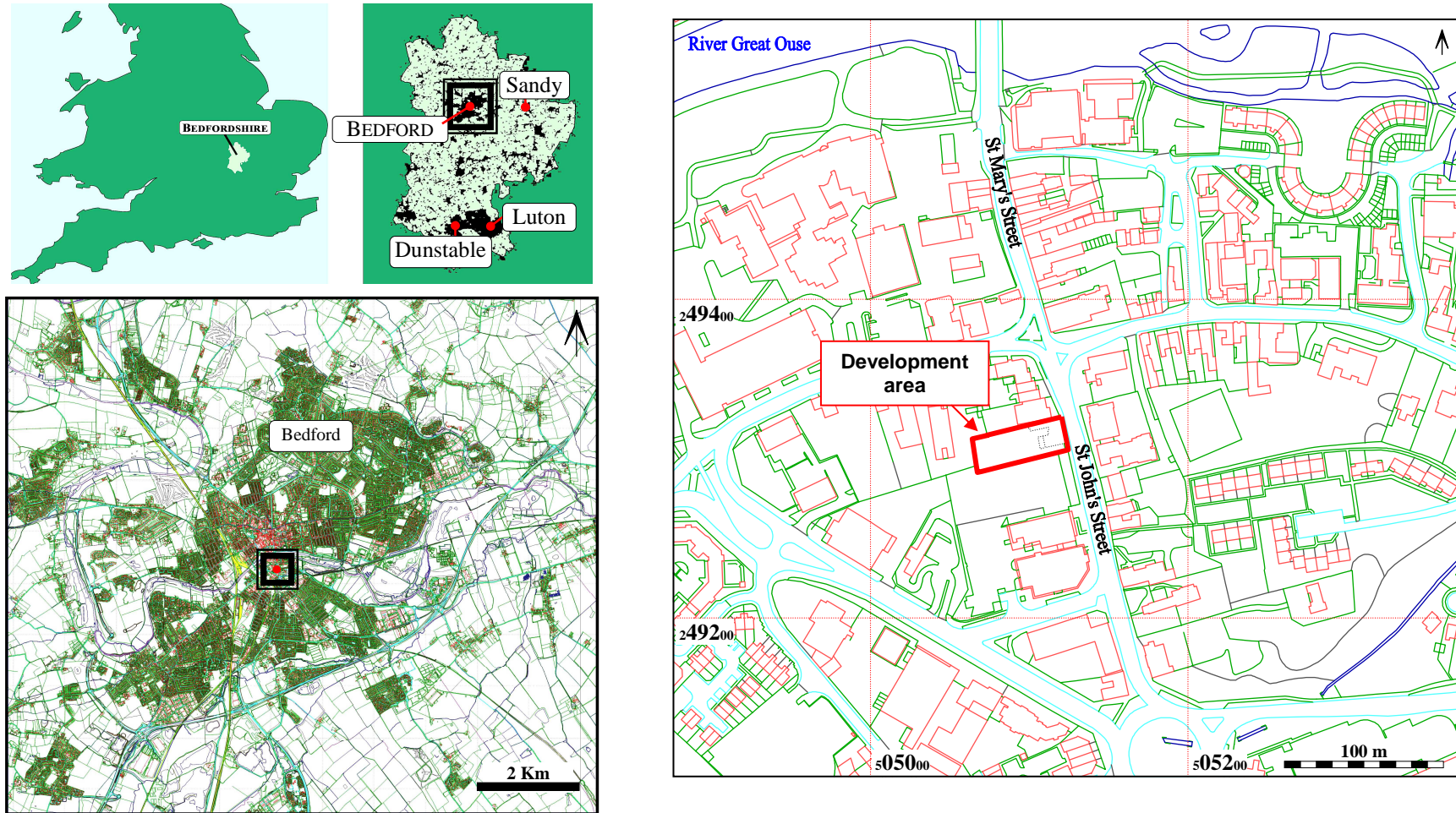


Figure 1: Site location.

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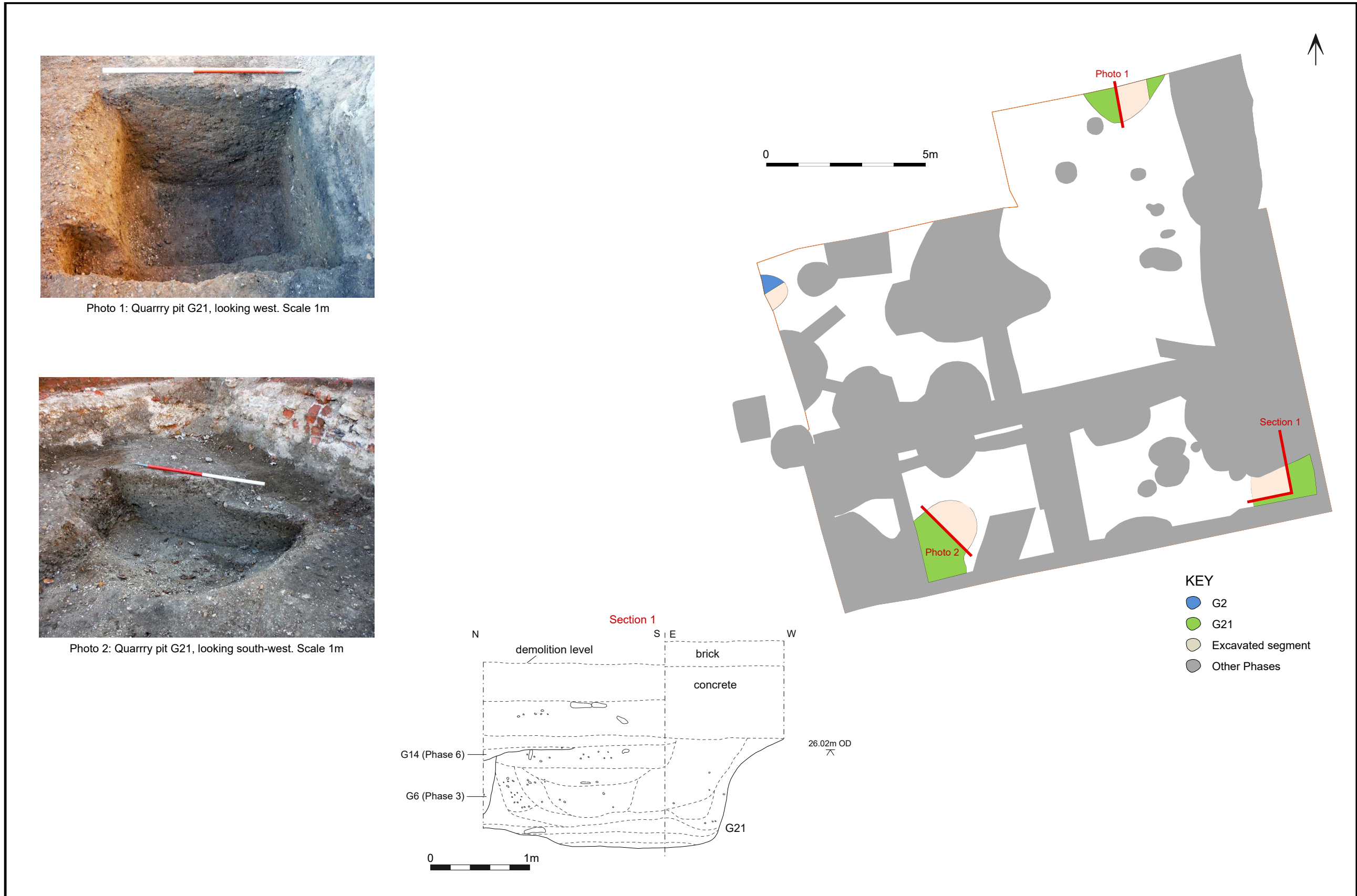


Figure 2: Phase 2 – late Saxon / Saxo-Norman (c. 850–1150)

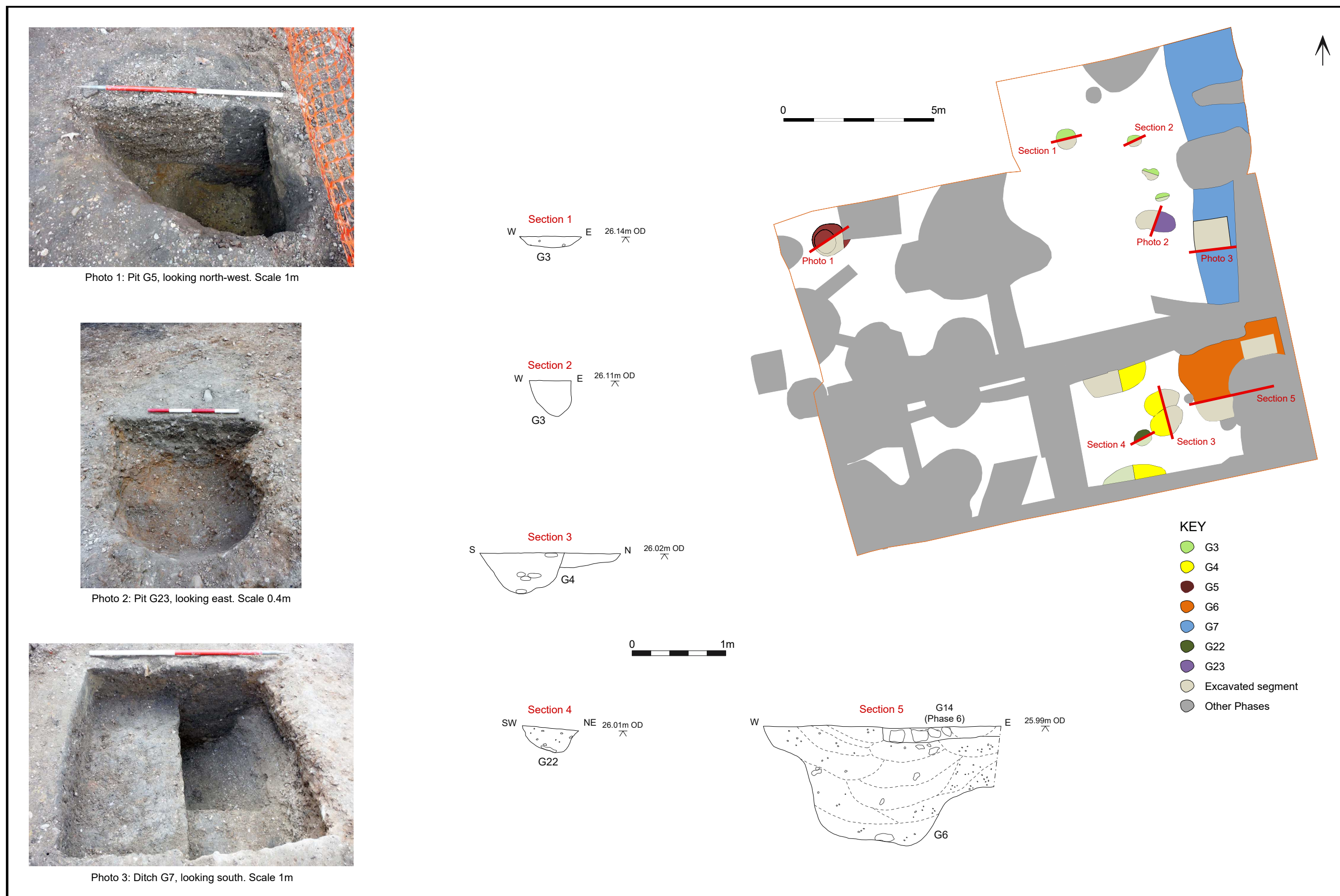


Figure 3: Phase 3 – early medieval (c. 1150–1250)

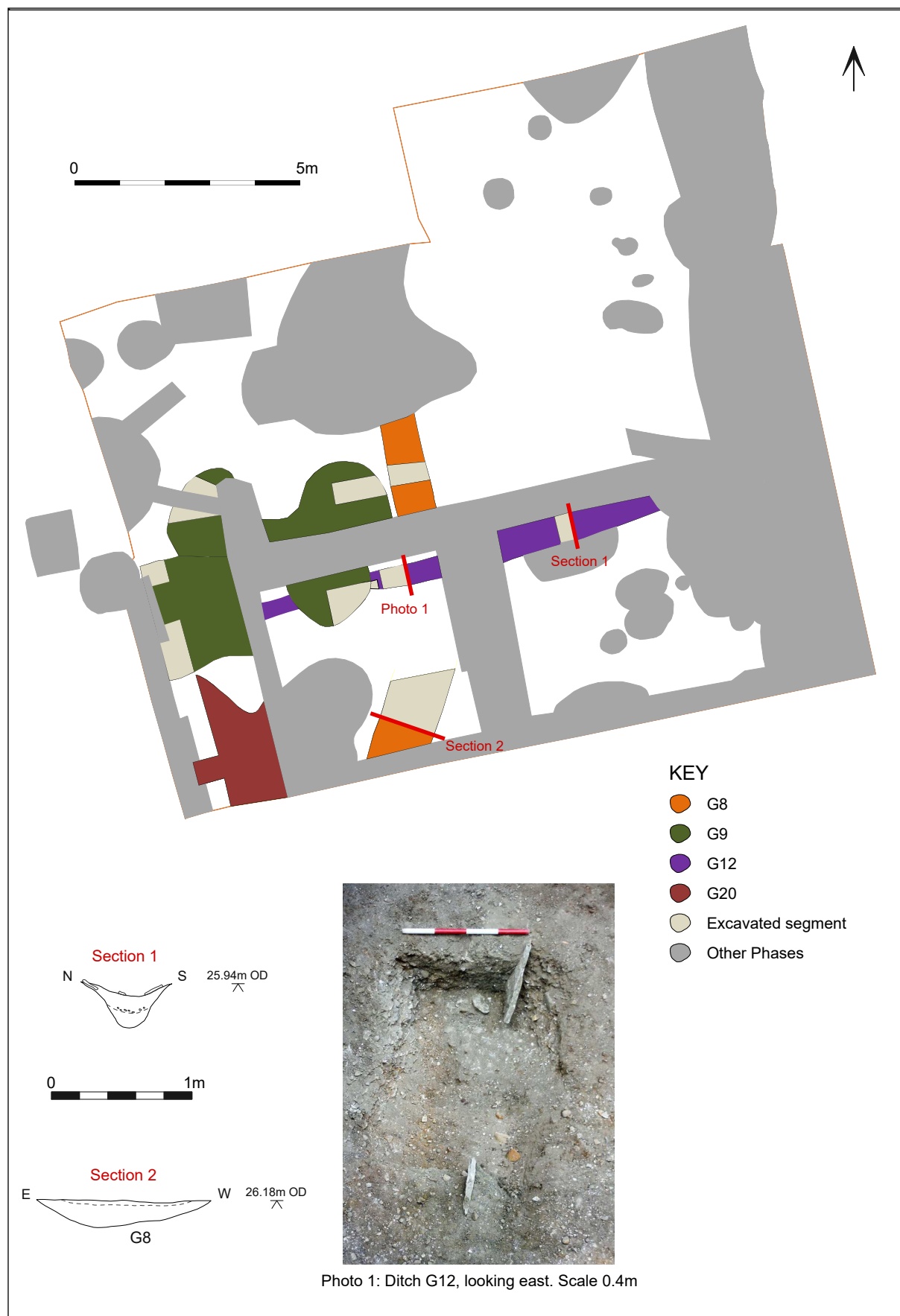


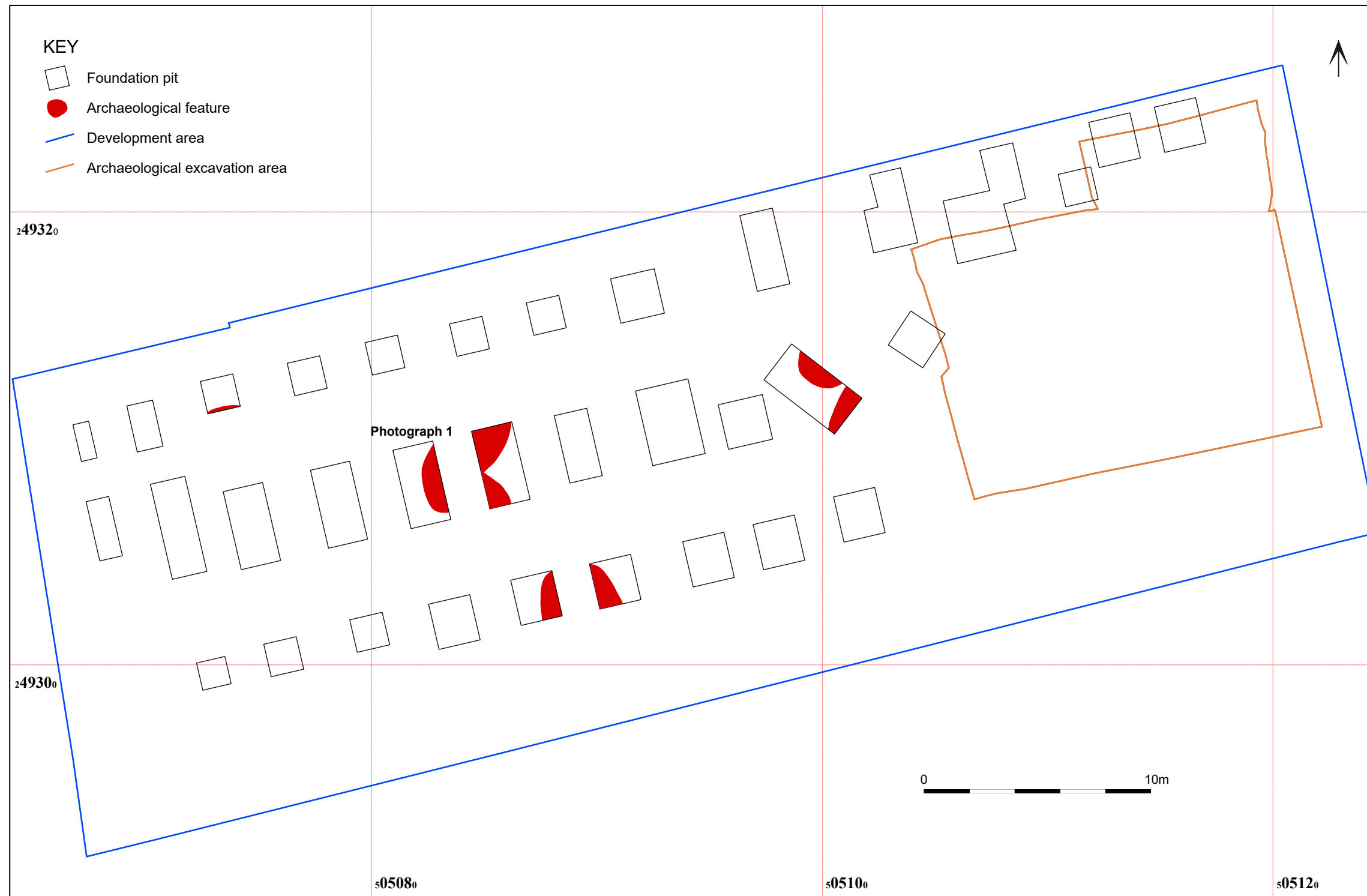
Figure 4: Phase 4 – late medieval / early post-medieval (c. 1400–1600)





Figure 6: Phase 6 – undated





Photograph 1: Sample photograph of feature within foundation pit, looking south. Scale 1m



Photograph 2: Overview of foundation pits, looking north-east

Figure 8: Extent of the watching brief, with selected photographs



Figure 9: Iron stylus (RA2)
(Positive of digital x-ray, actual size)



Figure 10: Saxon or Anglo-Scandinavian bone dress pin (RA1)
(Photograph, actual size)



Figure 11: 15th–16th-century copper-alloy book clasp (RA9)
(Positive of digital x-ray, actual size)



Figure 12: Medieval antler tuning peg (RA3)
(Photograph, actual size)



Figure 13: Iron knife or shears blade (RA8)
(Positive of digital x-ray, actual size)



Figure 14: 14th-century copper-alloy letter 'M' (RA10)
(Photograph, actual size)

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