An Archaeological Evaluation on Land at The Causeway, Bassingbourn, Cambridgeshire

Site Code: ECB 3238

Central National Grid Reference: TL 3389 4409.

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1 ABSTRACT

1.1 During August 2009, Pre-Construct Archaeology Ltd. carried out an archaeological evaluation on land at The Causeway, Bassingbourn, Cambridgeshire. Four trial trenches measuring 30m by 1.8m were excavated across the site. The work was carried out prior to the proposed development of the site for housing.

1.2 In all of the evaluation trenches the earliest deposit identified was natural weathered chalk, though this also included a number of anomalies, mostly areas of natural staining and features formed by natural processes. These were particularly prevalent in Trenches 2 and 3.

1.3 In all trenches the natural deposits and features were sealed by a silty subsoil. This appears to have been naturally formed, but in Trench 1 it included sherds of prehistoric pottery, indicating a reworking of the deposit in antiquity. In Trenches 1 and 4 the deposit was also cut by a small number of tree-throw features, at least one of these in Trench 1 also producing tiny fragments of prehistoric pottery

1.4 At the top of the subsoil in all trenches was a thin layer of slightly compacted material. This appears to have been a subsoil surface layer that had been compressed by recent machinery movements above. The stratigraphic sequence in each trench was completed by the modern ploughsoil.

1.5 No clear archaeological features were identified, though finds from the subsoil and tree-throws from the southwestern end of Trench 1 suggested some prehistoric activity in this area. Finds from the ploughsoil were more abundant, but these appear to have mostly derived from the site's former use as allotments, though some earlier material was also present.

2 INTRODUCTION

2.1 During the period 3rd – 7th August 2009, Pre-Construct Archaeology Ltd. carried out an archaeological evaluation on land at The Causeway, Bassingbourn, Cambridgeshire (Figure 1). The work was commissioned by Lovell Partnerships Ltd., and carried out as part of a planning condition prior to the development of the site for residential use. The work comprised the excavation and recording of four trial trenches (Figure 2).

2.2 The site was located in a field immediately to the south of The Causeway, some 500m northeast of the core of the village of Bassingbourn. The field had previously been occupied by allotments but had subsequently been incorporated into a much larger arable field, which extended a considerable distance to the east. Further arable fields lay beyond the site to the south, and to the west of the site was a public footpath, beyond which lay Willmott Road, a small residential development.

2.3 A written scheme of investigation (WSI) for the archaeological evaluation was prepared by Helen Hawkins of Pre-Construct Archaeology Ltd. (Hawkins 2009), in response to a Brief for archaeological work issued by Cambridgeshire Archaeology Planning and Countryside Advice (CAPCA 2009). The WSI was approved by Dan McConnell, Assistant Archaeologist, Cambridgeshire County Council. The work was supervised by Peter Boyer and project managed by Helen Hawkins.

2.4 The site was located at National Grid Reference (NGR) TL 3389 4409 and was allocated the site code ECB 3238.

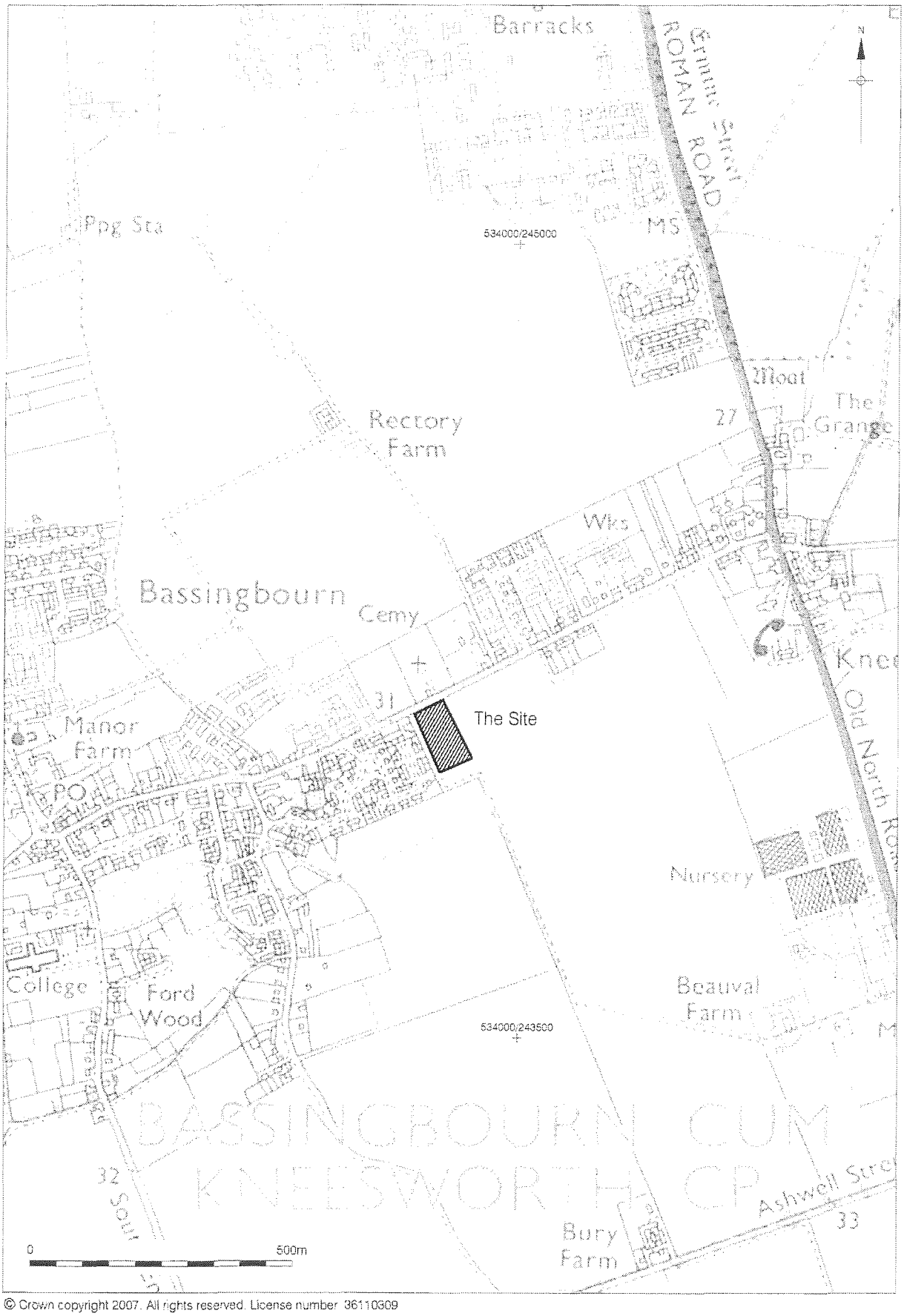


Figure 1
Site Location
1:10,000 at A4

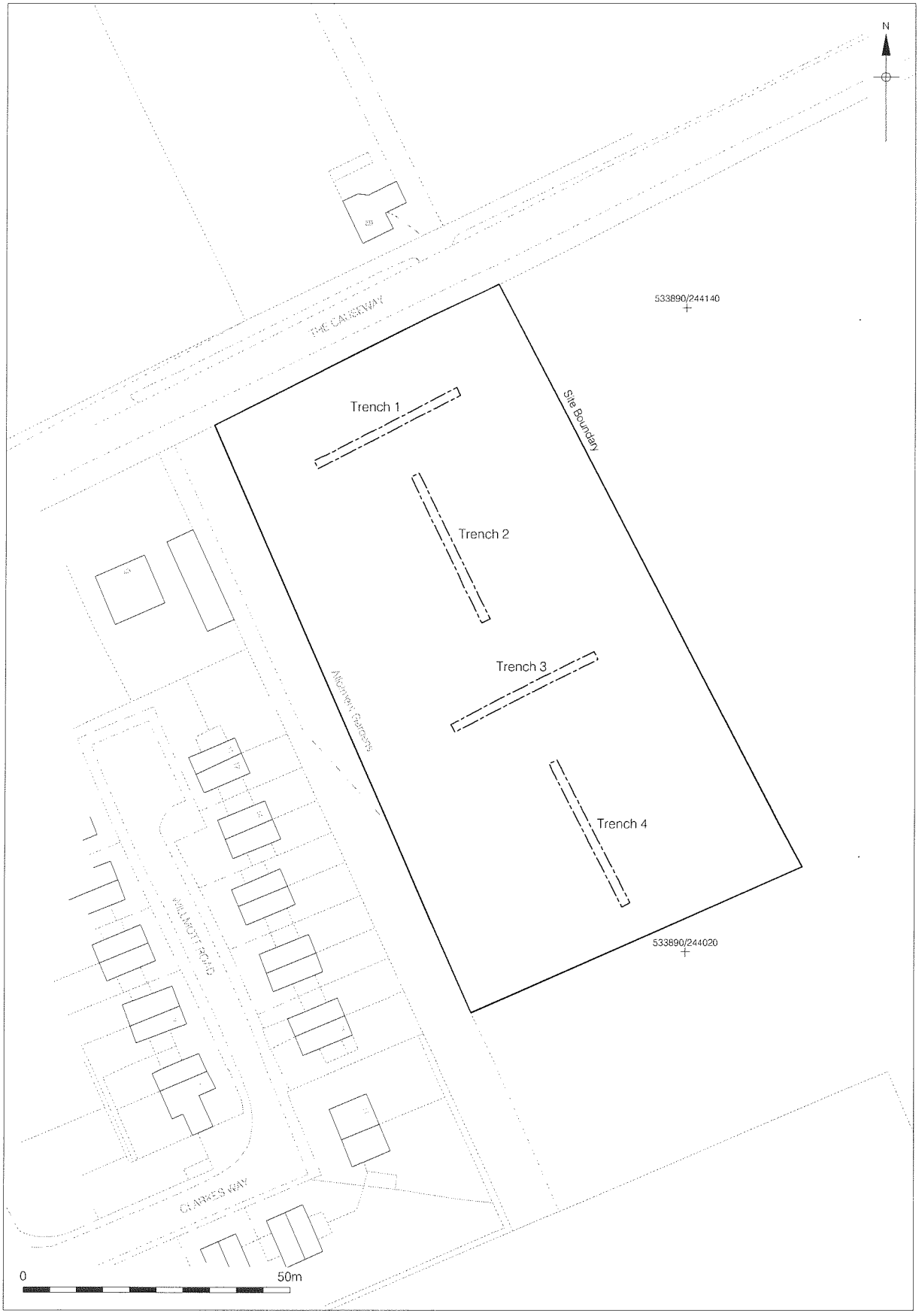


Figure 2
Detailed Site Location
1:1,000 at A4

3 GEOLOGY AND TOPOGRAPHY

3.1 The underlying geology of the site as shown by the British Geological Survey 1:50,000 plan is Upper Cretaceous Chalk of the Cenomanian Stage (*c.* 99 – 94 million years ago (Mya)). Geotechnical investigations carried out on the site indicated that the natural chalk lay at *c.* 0.40 – 0.50m below the current ground surface and was overlain by 0.20 – 0.30m of clay, which was capped by *c.* 0.25m of topsoil (Scott Wilson 2007).

3.2 The site is approximately rectangular in shape, measuring up to 120m NW-SE by 65m NE-SW, and covering an area of *c.* 0.76 ha. It is located at *c.* 30m OD on a generally flat ground surface, though with subtle slopes downward to the southwest and southeast. There are no major water courses in the near vicinity of the site, though a natural spring is located *c.* 1.2km to the southwest in Bassingbourn Village. At the time of the evaluation the land was under arable use, with the crop recently having been harvested.

3.3 The site is centred at National Grid Reference TL 3389 4409, and is bounded by The Causeway to the north, arable fields to the east and south, and by a public footpath to the west, beyond which, is the Willmott Road development.

4 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

4.1 The village of Bassingbourn and its surrounding landscape are quite rich in archaeological remains of a number of periods. The known archaeological resource has been compiled from a number of sources, including chance finds, historic documentary evidence and fieldwork interventions. Records relating to this archaeological resource are included in the Cambridgeshire Historic Environment Record (CHER), which was consulted as part of this project, all records within a 750m radius of the study site being examined.

4.2 The earliest evidence of human activity in the area, albeit slight, probably dates to the Palaeolithic period, though may possibly date to a later prehistoric period. A single, heavily-patinated flint flake was recovered by a metal detectorist, some 600m ESE of the study site (CHER No. 10319A; NGR: TL 345 439).

4.3 No evidence for further activity during later prehistoric periods is recorded within 750m of the study site, however, a little beyond this radius and to the west of the site, evidence of Iron Age activity has been detected during archaeological interventions at Bassingbourn Village College. The evidence recovered during evaluation and excavation on the site prior to the building of a new sports hall, suggested settlement here during the Middle Iron Age, though residual flints recovered, suggested some sporadic occupation prior to this (Muldowney 2006; Phillips 2008).

4.4 A single metal detector find of Roman date has been reported from a location a little more than 300m WNW of the study site (CHER No. MCB 15964; NGR: TL 334 441). This was a very worn coin of 1st or 2nd century AD date, which was pierced, suggesting re-use as a pendant and was recovered along with an assemblage of bone including part of a possible human femur. Further evidence of this date may be expected along Roman Ermine Street, which is approximately followed by the line of the modern A1198 that runs north-south within 700m east of the site. No evidence of Roman activity is recorded to the west of the Roman road and within the 750m radius of the site. However, a little beyond the study radius to the east, recent archaeological investigations in the grounds of Kneesworth House Hospital have recorded archaeological deposits of this date (Kasia Gdaniec, pers. comm.).

4.5 The name Bassingbourn is of Anglo-Saxon origin and means "the village of Bassa's people by the stream". However, there has only been limited archaeological evidence of activity during this period in the village (Ellis *et al.* 2001; Phillips 2008) and none in the vicinity of the study site. Bassingbourn is mentioned in Domesday Book in 1086, when the vill included 36 peasants and 3 serfs. It had 68 taxpayers in 1327 and approximately 180 inhabitants are recorded in 1347 (Wright *et al.* 1982). During the

medieval period the core of Bassingbourn village would have lain to the west of the study site as it does today. The site would have lain at the eastern periphery of the settlement and any activity is likely to have been peripheral and most likely agricultural, carried out in the area between Bassingbourn, and Kneesworth to the east. A trackway that ran on an approximately northwest-southeast alignment to the southwest of the study site was probably of medieval origin. The trackway would have passed within 300m of the study site and ran along a headland (CHER No. 10007; NGR: TL 343 424).

4.6 A little closer to the study site and in the same area as the Roman coin was recovered, WNW of the site, a number of features of possible date were recorded at Back Orchard, Bassingbourn (CHER No. CB15579; NGR: TL 33461 44112). An archaeological evaluation revealed a number of features that probably represented boundary plots in this area possibly also defined the northeastern limits of Bassingbourn village during the medieval and early post-medieval period, though dating evidence from the features was minimal (Wall and Bray 1998). Further to the west, a now filled-in pond in Bassingbourn village probably also had medieval origins (CHER No. 11217; NGR: TL 333 442).

4.7 Two possible medieval moated sites are recorded within the 750m radius of the study site. The nearer of the two was located less than 400m WSW of the site, in Bassingbourn village, opposite the Red Lion Inn (CHER No. 01239; NGR: TL 335 439). A rectangular moated area was identified within an orchard now built over by a housing development. The possible moat was infilled and no trace of it now survives. Approximately 750m northeast of the study site a second possible moated site is recorded at North Farm, Kneesworth, a short distance east of the line of Roman Ermine Street (CHER No. 01240; NGR: TL 345 446). The remains here are extant in two areas. A fragmentary wet moat is located close to the east side of the farm and there is a further complex *c.* 100m to the northeast, which includes elements of a sub-rectangular homestead moat. Just beyond the CHER study radius to the west of the study site is Bassingbourn Moat, which surrounds the church and graveyard in the village. This has received limited archaeological attention though evaluation has shown that the present course is not original (Bray 1995).

4.8 To the ESE of the study site and in the same area where the possible Palaeolithic flint flake (see above) was recovered, the same metal detectorist found a medieval silver coin and an approximately contemporary silver button nearby (CHER No. 10319; NGR: TL 345 439).

4.9 The core of Bassingbourn village remained to the west of the study site into the post-medieval period, though there was some outward expansion, including along the Causeway. Probably the most significant expansion of the village came in the mid

19th century when a great number of individuals associated with the thriving coprolite industry settled here along with their families. The coprolite industry involved the mining of phosphate-rich fossil beds from Cretaceous Chalk deposits for use in fertilizer manufacture. The industry began in Felixstowe in Suffolk in 1842 and spread across the chalk lands of East Anglia, reaching Bassingbourn in the 1860s (O'Connor 2001).

4.10 Most of the entries on the CHER for this period refer to buildings and/or other structures. North of The Causeway and opposite the site is a 19th-century cemetery (CHER No. 12023; NGR: TL338 443), within which are a pair of cemetery chapels housed under a single roof dating to 1879 (CHER No. MCB17221; NGR: TL 3381 4421). Activity associated with the cemetery did not extend south of The Causeway. Some 180m northeast of the chapels stood a three storey building known as "Gaunt's Tower" (CHER No. 03133; NGR: TL 3393 4436). Previously described as a windmill, this was actually a folly, subsequently converted into a house, and later falling into dereliction (Smith 1975, 21). Some distance further to the northeast is the site of an 18th or 19th century dovecote (CHER No. 10401; NGR: TL 3450 4460). Recorded in some detail in 1974 and subsequently demolished, this was of timber frame construction with brick infill and had a plain tiled pyramidal roof (Davies 1988).

4.11 Located less than 300m west of the site is Bassingbourn Gas House, a former industrial building dating to 1865 and now converted to offices (CHER No. MCB16558; NGR: TL 3356 4400). A short distance to the south of this stood a range of mostly wooden industrial workshops for agricultural engineering (CHER No. MCB16559; NGR: TL 3356 4397). The works were occupied by Wilkersons between 1873 and 1980 and a large smithy chimney for a number of forges still stands on the site (Balchin and Filby 2001, 19).

4.12 Lying just within the CHER study radius and to the WNW of the study site is "The Old Mount" (CHER No. 03132; NGR: TL 3316 4418). This heavily disturbed mound of earth was the site of a former ice house belonging to the Pigott family (Salzman 1948, 16). Other records on the CHER include two elements of Bassingbourn United Reformed Church located some distance southwest of the study site. The congregational church was founded in 1791 and located opposite the recreation ground (CHER No. CB14935; NGR: TL 3318 4371). An associated large chapel was also founded south of the recreation ground, though this was subsequently converted into a private house (CHER No. MCB17252; NGR: TL 3333 4373).

4.13 In addition to the monuments outlined above, Bassingbourn also has a number of historic Grade II listed buildings dating from the 16th to 19th centuries. The majority of these are located close to the village core in the High Street and South End areas,

though there are a handful of examples on The Causeway, including the above-mentioned cemetery chapels. Other entries include Cherry Tree House (75 The Causeway), an early 19th-century timber-framed and roughcast rendered house located 180m northeast of the study site (CHER No. 52433; NGR: TL 33933 44212); and Lilac Cottage (10 The Causeway), a small 18th-century timber-framed building located 250m west of the site (CHER No. 52435; NGR: TL 33629 44032).

4.14 Historic maps show that the site has been mostly occupied by open agricultural land and crossed by a footpath along its western edge. Some development along the north side of The Causeway took place in the 19th century and is shown on the 1903 Ordnance Survey Map, but it was not until the later 20th century that development along the south side of The Causeway reached the western edge of the site, as shown in the 1979 Ordnance Survey Map. At this time the site was occupied by allotment gardens, having subsequently reverted to arable agricultural use.

4.15 The overall pattern shows that there was little evidence for human activity in the vicinity of the study site until the late prehistoric period, when there was limited occupation in the area of Bassingbourn village to the east of the site. In the Roman period, activity is likely to have been concentrated along the line of Ermine Street. Saxon activity was probably concentrated in the village core of Bassingbourn, a pattern which continued into the medieval period, though with some expansion. This expansion continued into the post-medieval period, being particularly marked in the 19th century. Through all periods, the site appears to have lain in a peripheral location away from settlement areas and probably in agricultural land. Only in the 19th century did the village begin to expand towards the site along The Causeway, but even then the site remained as agricultural land as it is today, albeit having been occupied by allotments for a time.

5 PLANNING BACKGROUND AND RESEARCH OBJECTIVES

5.1 The study aims to satisfy the objectives of Cambridgeshire County Council and South Cambridgeshire District Council, which fully recognise the importance of the buried heritage for which they are the custodians.

5.2 In considering any planning application for development, the local planning authorities are bound by the policy framework set by government guidance, in this instance Department of the Environment, Planning Policy Guidance Note 16 (PPG 16), by current Development Plan Policy and by other material considerations.

5.3 The relevant Strategic Structure Plan framework is provided by the Cambridgeshire and Peterborough Structure Plan, adopted on 22nd October 2003. It includes the following policy relating to the Historic Built Environment:

POLICY P7/6 HISTORIC BUILT ENVIRONMENT
LOCAL PLANNING AUTHORITIES WILL PROTECT AND ENHANCE THE QUALITY AND DISTINCTIVENESS OF THE HISTORIC BUILT ENVIRONMENT.

5.4 The Plan goes on to further define the Archaeological Resource, threats to it and policies pertaining to archaeology and development:

HISTORIC BUILT AND ARCHAEOLOGICAL HERITAGE

7.17 THE STRUCTURE PLAN AREA HAS AN EXCEPTIONALLY RICH ARCHAEOLOGICAL HERITAGE ARISING FROM ACTIVITY FROM THE EARLIEST HUMAN OCCUPATION TO THE PRESENT DAY. THIS HERITAGE INCLUDES A RANGE OF SCHEDULED ANCIENT MONUMENTS, SOME OF WHICH ARE SIGNIFICANT FEATURES IN THE LANDSCAPE. HOWEVER, A HIGH PROPORTION OF OUR ARCHAEOLOGICAL SITES SURVIVE BELOW THE GROUND AND ARE LIABLE TO DAMAGE FROM AGRICULTURAL PROCESSES, MINERAL EXCAVATION, NEW ROAD SCHEMES, FORESTRY AND DEVELOPMENT. LOWERING OF THE WATER TABLE BY DRAINAGE IS ALSO CAUSING DAMAGE TO SITES, PARTICULARLY IN THE FENS. ARCHAEOLOGICAL REMAINS SHOULD BE SEEN AS A FINITE AND NON-RENEWABLE RESOURCE, WHICH ARE IMPORTANT TO PRESERVE AS AN EDUCATIONAL, CULTURAL, RECREATIONAL AND TOURISM RESOURCE. APPROPRIATE MANAGEMENT IS ALSO ESSENTIAL TO ENSURE THAT THEY SURVIVE IN GOOD CONDITION. PRESERVATION IN SITU WILL DEPEND UPON A NUMBER OF FACTORS AND WHERE THIS IS NOT POSSIBLE ALTERNATIVE ARRANGEMENTS SHOULD BE MADE PRIOR TO EXCAVATION. PLANNING GUIDANCE ON ARCHAEOLOGY CAN BE FOUND IN PPG16.

5.5 Further policy detail regarding archaeology and the planning process is provided in a guidance note issued by Cambridgeshire Archaeology Planning and Countryside Advice (CAPCA) on 1st February 2005:

Archaeology within the Planning Process – Guidance Note
The archaeological process is integral to any development proposal and should be considered as early as possible in the planning process.

Objective 1: Speak to the Development Control Archaeologist.
Get advice as early as possible. We will undertake a free preliminary site appraisal in consultation with the Cambridgeshire Historic Environment Record to identify whether important

archaeological remains are likely to survive on the site. The Cambridgeshire Historic Environment Record is constantly being updated and enhanced, so it is not advisable to rely on the results of a previous search or assessment for a new proposal.

Objective 2: Identify the potential impact of development.
Archaeological Assessment/Evaluation of the site may be required. In many instances, further information will be required before an informed judgement can be made regarding the likely impact of the proposed development on the archaeological resource. This will usually take the form of a combination of non-intrusive and/or intrusive survey techniques. Non-intrusive techniques may include Desk-Based Assessment, Aerial Photographic Assessment, Earthwork Survey, Geophysical Survey and Surface Artefact Collection ('fieldwalking'). Intrusive survey will usually involve trench based evaluation of an appropriate sample of the proposed development area in order to determine the extent, date, character, condition, significance and quality of any surviving archaeological remains liable to be threatened by the proposed development. Where early discussions with local planning authorities or the developer's own research indicate that important archaeological remains may exist, it is reasonable for the planning authority to request the prospective developer to arrange for an archaeological field evaluation to be carried out before any decision on the planning application is taken.

Objective 3: Identify Proximity of any Scheduled Ancient Monuments
Scheduling under the Ancient Monuments and Archaeological Areas Act 1979 affords statutory protection to monuments deemed to be of national importance. It makes no difference what the monument is, the protection is the same. There are 258 scheduled monuments in Cambridgeshire. It is an offence to undertake any action that will impact on the physical remains of a Scheduled Ancient Monument (SAM). Scheduled status is imposed by the Department of Culture Media and Sport (DCMS). English Heritage act as advisors to DCMS and should be consulted about schemes likely to have a direct impact, or an effect on the setting of a SAM. Schemes not likely to have a significant adverse effect on a SAM may be considered, but will require Scheduled Monument Consent. There is a presumption under the Act, reiterated in PPG16, against destruction of or development upon a SAM.

Objective 4: Minimise any potential impact before submitting a Planning Application
If there will be an impact on important archaeological remains the planning authority has three options
1. Refuse the application - when the impact on the archaeological heritage is considered to outweigh the benefits of development.
2. Place conditions on planning consent allowing for the mitigation of the impact of on archaeological remains (see below).
3. Request details of how the severity of any impact on archaeology can be reduced to an acceptable level within the proposed scheme as part of the planning application.

There are three main ways that the potential impact on archaeological remains can be reduced:
1. Preservation of archaeological remains in situ - achieved by development not being allowed within the area of archaeological interest.
2. Preservation of archaeological remains in situ - through design and engineering solutions to prevent or limit the impact of the development on the archaeology.
3. Preservation of archaeological remains by record -the excavation, recording, analysis, presentation and publication of archaeological remains which will be disturbed or destroyed by the development.

Objective 5: Archaeological Mitigation
Where nationally important archaeological remains, whether scheduled or not, and their settings are affected by a proposed development there should be a presumption in favour of their physical preservation. Preservation in situ should in any case be considered the preferred mitigation option. Development proposals may require amendments to reduce the impact upon the archaeological deposits in the ground, through sympathetic building design, raising ground levels or careful siting and management of open areas. Such proposals can be discussed with CAPCA and Planning Authority. Where development will affect remains of lesser importance, and physical preservation in situ is not feasible, an archaeological excavation for the purposes of 'preservation by record' may be an acceptable alternative. CAPCA will produce on request a free Design Brief, which sets out the requirements for any necessary archaeological work. A detailed costed specification can then be obtained from one or more Archaeological Contractors. The specifications MUST be agreed with CAPCA, on behalf of the Local Planning Authority, before any work is undertaken.

5.6 The relevant local planning framework is provided by the South Cambridgeshire Local Plan adopted in February 2004 (though currently undergoing revision). The Plan contains the following policies which provide a framework for the consideration of development proposals affecting archaeological and heritage features:

POLICY EN15: THE COUNCIL WILL PROTECT, PRESERVE AND ENHANCE KNOWN AND SUSPECTED SITES AND FEATURES OF ARCHAEOLOGICAL IMPORTANCE, AND THEIR SETTINGS, BY:
(A) REQUIRING, IN ALL CASES INVOLVING PROPOSED WORKS AT SITES OF KNOWN OR POTENTIAL ARCHAEOLOGICAL INTEREST, THAT ANAPPROPRIATE LEVEL OF ASSESSMENT AND/OR EVALUATION IS CARRIED OUT BY A SUITABLY QUALIFIED PERSON SO THAT THE ARCHAEOLOGICAL IMPLICATIONS OF ANY PROPOSED DEVELOPMENT CAN BE ESTABLISHED; AND
(B) REFUSING PLANNING PERMISSION FOR DEVELOPMENT WHICH WOULD RESULT IN DAMAGE TO SITES AND FEATURES OF NATIONAL ARCHAEOLOGICAL IMPORTANCE, AND THEIR SETTINGS, INCLUDING THE SCHEDULED ANCIENT MONUMENTS IDENTIFIED ON THE PROPOSALS MAP.
WHERE PLANNING PERMISSION IS GRANTED FOR DEVELOPMENT ON SITES OF ARCHAEOLOGICAL INTEREST, IN-SITU PRESERVATION OF REMAINS WILL BE PREFERRED. IN ALL CASES WHERE THIS IS NOT MERITED OR IS NOT FEASIBLE THE COUNCIL WILL REQUIRE THAT SATISFACTORY PROVISION IS MADE FOR A PROGRAMME OF EXCAVATION AND RECORDING OF REMAINS BY A SUITABLE PERSON OR BODY PRIOR TO THE COMMENCEMENT OF ANY APPROVED DEVELOPMENT.

POLICY EN16: WHERE PLANNING PERMISSION IS GRANTED FOR ANY DEVELOPMENT WHICH AFFECTS ANY ASPECT OF THE ARCHAEOLOGICAL HERITAGE WHICH IS CONSIDERED TO BE IMPORTANT IN TERMS OF THE ABOVE POLICIES, THE DISTRICT COUNCIL WILL ENCOURAGE, AND IN APPROPRIATE CASES REQUIRE BY CONDITION OR PLANNING OBLIGATION, DEVELOPERS TO MAKE PROVISION FOR THE DEPOSIT OF RECORDS ARISING FROM EXCAVATIONS, FOR PUBLIC ACCESS AND EDUCATION ON SITE AND/OR IN THE FORM OF PUBLICATIONS.

5.7 A Brief for archaeological work on the site was prepared by CAPCA in line with the County and District planning policies (CAPCA 2009). In response to this and the policies contained within the local authorities' plans, a written scheme of investigation was produced for a programme of archaeological work (Hawkins 2009).

5.8 The Brief issued by CAPCA suggested that interpretation of relevant aerial photographs should be included as part of the research background to the project. However, a check with the air photographic library at CAPCA revealed that no suitable images of the relevant area were available.

5.9 The evaluation aimed to determine, as far as was reasonably possible, the location, extent, date, character, condition, significance and quality of any surviving archaeological remains liable to be threatened by the proposed development. The evaluation also sought to clarify the nature and extent of existing disturbance and intrusions, and hence assess the degree of archaeological survival of buried deposits and any surviving structures of archaeological significance.

5.10 Within these parameters and given the archaeological and historical background, the evaluation sought to address a more site-specific objective of establishing the possible eastern extent of the medieval and post-medieval settlement of

Bassingbourn. The results of the evaluation would also be used to determine any further mitigation strategies for the site.

6 METHODOLOGY

6.1 The fieldwork was carried out according to the Brief (CAPCA 2009) and the WSI (Hawkins 2009), and the programme of work conformed to the IFA code of conduct.

6.2 Four trenches each measuring 30m by 1.8m were excavated, giving a total excavated area of 216m^2. Two of the trenches were aligned parallel with the long axis of the site and two parallel with the short axis, in order to give a wide spatial coverage to the evaluated area.

6.3 All trenches were machine excavated in spits to the surface of identifiable archaeological deposits or to the surface of natural deposits if identifiable archaeological remains were not present. All machining was undertaken by a 180° wheeled excavator using a toothless bucket, under archaeological supervision. Longitudinal sections and bases of the trenches were then cleaned, and sample sections and base plans recorded. Exposed sections and spoil heaps were also checked in order to collect any dateable evidence and assess the extent of residual finds preservation. A written, drawn and photographic record of each trench was made, and the location of each trench was recorded and tied into local and national grids (Figure 2).

6.4 Two temporary benchmarks (TBMs) were established on driven posts within the site. The most northerly of these (value 32.04m OD) was established in order to provide levels for Trenches 1 and 2. The southern TBM (value 32.26m OD) was established in order to provide levels for Trenches 3 and 4. The TBMs were calculated from high-resolution geographical positioning system (GPS) data, when the trenches were laid out using the GPS equipment.

6.5 When the archaeological work had been completed, all evaluation trenches were backfilled by machine, with the materials excavated from them, ensuring the excavated ploughsoil was replaced at the surface.

7 THE ARCHAEOLOGICAL SEQUENCE

7.1 TRENCH 1

7.1.1 This trench was located towards the northern edge of the site and positioned on a parallel northeast-southwest alignment with The Causeway (Figures 2 and 3).

7.1.2 The basal deposit (Figure 4) was a compact, weathered natural chalk [3] with a number of anomalies caused by subsequent natural (probably periglacial) processes. It was recorded at an upper elevation of 31.25m OD towards the eastern end of the trench but sloped down to the west. At the western end its surface was more uneven as a result of tree-rooting activity and was recorded at an upper elevation of 31.01m OD. It was overlain by up to 0.35m of a moderately compacted, mid yellowish brown, clayey silt [2], interpreted as a subsoil deposit and recorded at an upper elevation of 31.26m OD. Although apparently a naturally formed layer, this had been disturbed in antiquity as sherds of prehistoric pottery (possibly Late Neolithic/Early Bronze Age) were found near its base towards the western end of the trench.

7.1.3 Also at the western end of the trench, the naturally formed layer was cut by a number of tree-throw features. One of these [5] was observed in section and recorded in detail. It was sub-circular in plan, with a typically asymmetric profile, measuring up to 1.90m across and 0.60m deep. It was filled with a deposit barely distinguishable from the subsoil that also included tiny fragments of prehistoric pottery.

7.1.4 The tree-throws and subsoil were overlain by a thin (up to 100mm thick) layer of compacted, mid brown clayey silt [6]. This was similar to the subsoil and tree-throw fills but appears to have been a deposit modified by compaction from recent farm machinery movements.

7.1.5 The stratigraphic sequence was capped by up to 0.36m of modern ploughsoil [1], recorded at a surface elevation of 31.90m OD to the east and 31.51m OD to the west.

7.2 TRENCH 2

7.2.1 Trench 2 was aligned perpendicular to Trench 1, its northern end located 9m south of the centre of the first trench (Figures 2 and 3).

7.2.2 The basal deposit was firm, weathered natural chalk [31], again with a number of natural anomalies (Figures 4 and 5). This was recorded at an upper elevation varying between 31.26m OD to the north and 31.38m OD to the south.

7.2.3 Three of the more distinct features that cut the chalk were investigated for the presence of any possible archaeological evidence. A little more than 6m from northwestern end of the trench was a large irregular feature [12] (Figs. 3 and 4), up to 2.85m across and extending beyond either side of the trench. In profile its irregular edges could be seen cutting into the chalk and then undercutting the natural deposit,

belying the likely natural origin of the feature. It was filled with a firm, mid reddish orange sandy silt [11].

7.2.4 A further 10m along the trench was another large irregular feature [14] (Figs 3 and 4). This measured at least 3.05m across and extended beyond both sides of the trench. The feature had very irregular sides and an undulating base and was clearly another natural feature. It was filled with a firm, mid brownish orange sandy silt [13].

7.2.5 A third large feature [16] was recorded close to the southeastern end of the trench. This measured up to 2.72m across, extending beyond the northeastern edge of the trench, and was a little more regular in plan than the previous two features. It was also quite shallow, its gently sloping, slightly concave sides gradually breaking to a slightly undulating, flattish base at a depth of just 0.30m. The feature also appeared to be a natural feature and was filled with a slightly friable, very light, slightly brownish grey clayey silt [15].

7.2.6 Although all of the features in the trench were of natural origin, it is likely that [12] and [14] were formed by periglacial processes, whereas [16] may have been formed by tree-rooting. The features were all sealed by up to 0.30m of friable, dark reddish brown clayey silt [9], which appears to have been the same subsoil layer recorded in Trench 1, though it lacked any artefactual material. It was recorded at upper elevations varying between 31.63m OD to the south and 31.47m OD to the north. This was overlain by a thin (up to 100mm thick) intermittent layer of compacted, mid to dark reddish brown silt [8], which appears to have been the same machine-compacted layer as [6], seen in Trench 1.

7.2.7 The stratigraphic sequence was completed by up to 0.27m of modern ploughsoil, the surface elevation varying between 31.67m OD to the north and 31.52m OD to the south. Finds recovered from the ploughsoil indicated modern activity but also suggested a presence in the area in the earlier post-medieval period.

7.3 TRENCH 3

7.3.1 This trench was aligned parallel to Trench 1 and located 14m southeast of the southeastern end of Trench 2 (Figures 2 and 3).

7.3.2 The basal deposit was firm natural chalk [26] interspersed with areas of staining and natural anomalies (Figures 4 and 5). It was recorded at a surface elevation varying between 31.41m OD to the east and 21.24m OD to the west.

7.3.3 The chalk was cut by a number of natural features, two of which were recorded in detail. Approximately mid-way along the southern edge of the trench was a small, sub oval depression [28], measuring up to 1.65m across and 0.32m deep (Figures 3 and 4). The morphology of the feature suggested it may have been an early tree-throw rather than being produced by periglacial processes. It was filled with a firm, dark reddish brown silt [27]. Approximately 6m to the east was another small sub-oval depression [30], measuring 0.58m north-south by 0.44m east-west, but just 90mm

deep. This also appeared to be a small tree-throw and was filled with a firm, dark reddish brown silt [29].

7.3.4 The natural features and the chalk were sealed by up to 0.25m of dark reddish brown silt [25], which appeared to be the same subsoil layer as recorded in Trenches 1 and 2. It was recorded at an upper elevation of 31.58m OD and was overlain by up to 90mm of compact, mid to dark reddish brown silt [24], which appears to have been the equivalent of the thin layers recorded overlying the subsoil in Trenches 1 and 2. The sequence was capped by modern ploughsoil [23], which was up to 0.25m thick and recorded at surface elevations varying between 32.10m OD to the east and 31.66m OD. In addition to indicating modern activity, dateable finds from the ploughsoil also suggested a presence in the earlier post-medieval period and possibly also at an earlier date.

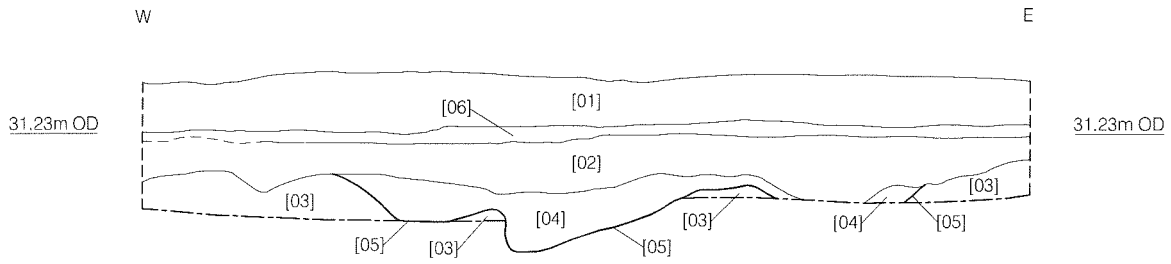
7.4 TRENCH 4

7.4.1 This trench was located perpendicular to Trench 3, with its northwestern end 12.5m southeast of the latter's mid point (Figure 2 and 3).

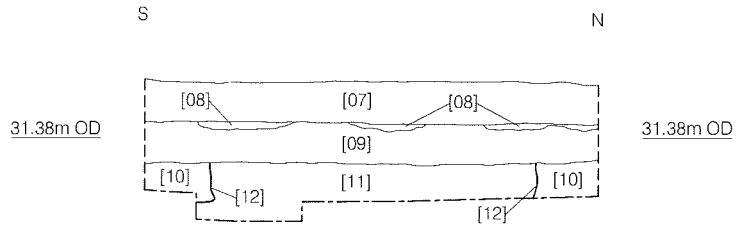
7.4.2 The basal deposit was compact natural chalk [21] with frequent staining (Figures 4 and 5), recorded at an upper elevation of 31.45m OD. It was overlain by up to 0.20m of soft, mid yellowish brown clayey silt [18], comparable with the subsoil recorded in the other trenches and recorded at an upper elevation of 31.64m OD.

7.4.3 Cut into the clayey silt deposit was a single, irregular feature [20], measuring 1.60m by at least 0.50m and 0.40m deep, extending beyond the northeastern edge of the trench. This appears to have been another tree-throw, comparable to those features cut into the subsoil in Trench 1, and like those features its fill [19] was barely distinguishable from the subsoil. This feature and the subsoil were sealed by a thin (up to 80mm thick) layer of mid yellowish brown clayey silt [22], comparable to the machine-compacted layer seen in the other trenches.

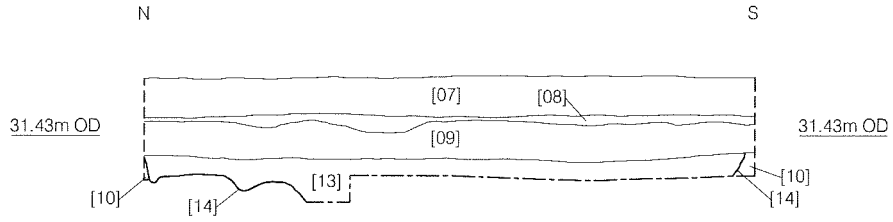
7.4.4 Sealing the clayey silt layer was the modern ploughsoil [17], up to 0.20m thick and recorded at surface elevations of between 31.92m OD to the northwest and 31.70m OD to the southeast. This layer produced artefactual evidence that there may have been activity here sometime prior to the modern period.



Section 2
Trench 1
South Facing

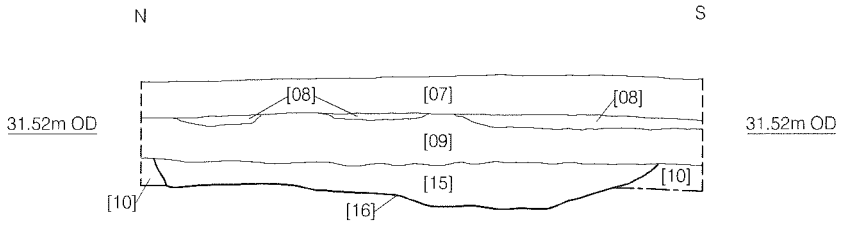


Section 3
Trench 2
East Facing

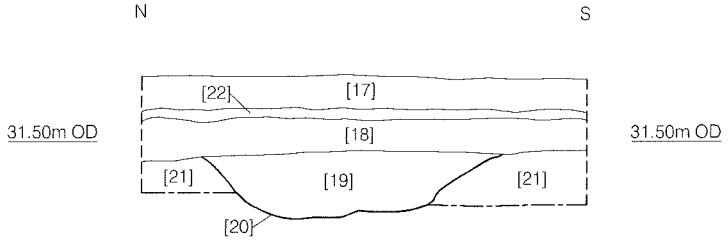


Section 4
Trench 2
West Facing

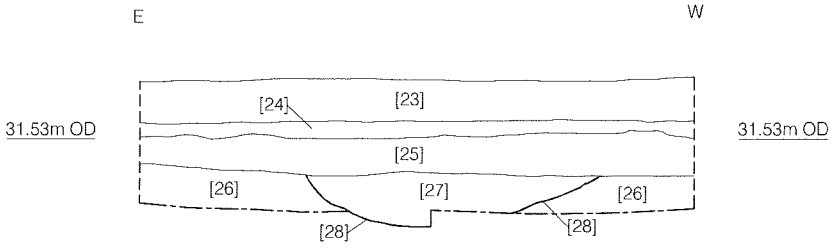
Figure 4
Sections 2 to 4
1:40 at A4



Section 5
Trench 2
West Facing



Section 6
Trench 4
West Facing



Section 7
Trench 3
North Facing

Figure 5
Sections 5 to 7
1:40 at A4

8 DISCUSSION AND CONCLUSIONS

8.1 From the information derived from the evaluation trenches, three broad stratigraphic phases could be deduced:

- Phase 1: Natural
- Phase 2: Prehistoric
- Phase 3: Modern

8.2 Despite the archaeological potential of the site and its apparent lack of previous development prior to the archaeological investigations, very limited evidence of activity pre-dating recent agricultural and horticultural disturbance was identified.

8.3 The earliest deposit encountered in all trenches was natural weathered chalk, which included frequent natural anomalies. It was recorded at a lowest surface elevation of 30.99m OD in Trench 3 and at an upper surface elevation of 31.45m OD in Trench 4. At 30.90m OD the surface elevation of the chalk was actually lowest at the southwestern end of Trench 1, but this was in an area of apparent disturbance and did not reflect the true natural surface.

8.4 In all of the trenches the natural chalk was overlain by a subsoil, generally comprising moderately compacted, mid to dark reddish brown clayey silt. The thickness of this deposit remained reasonably constant (c. 0.20 – 0.30m thick) across much of the site, except towards the southwestern end of Trench 1 where it had been disturbed by natural and anthropogenic elements. The surface elevation of the subsoil was generally between 31.47m OD and 31.64m OD, except towards the southwestern end of Trench 1, where it had been disturbed.

8.5 Very limited evidence of prehistoric activity (possibly Late Neolithic/Early Bronze Age) was recorded in the area of disturbance towards the southwestern end of Trench 1. Though this amounted to just a small number of pottery sherds and fragments from the subsoil and a tree-throw cut into this deposit, it did indicate a presence in this area during antiquity, and disturbance of natural deposits.

8.6 A thin layer broadly overlying the subsoil in all trenches and the area of disturbance in Trench 1 appears to have been caused formed as a result of recent compression by agricultural machinery. This was overlain by the modern ploughsoil, which included finds probably deposited when the site was used as allotments, but also included residual evidence of earlier activity, certainly from the earlier post-medieval period but possibly also from the medieval and Roman periods. However, the much abraded nature of pottery sherds of these periods can inform very little on the nature of activities at earlier dates.

8.7 The limited evidence suggests a definite presence on the site during prehistory but the nature and extent of activity is impossible to assess. There was probably also activity in subsequent archaeological periods, but again the nature of the recovered artefactual evidence is not sufficient to indicate anything more than a presence in the area at certain broad dates.

9 ACKNOWLEDGEMENTS

9.1 Pre-Construct Archaeology Ltd. would like to thank Lovell Partnerships Ltd. for commissioning and funding the work. PCA would also like to thank Dan McConnell of Cambridgeshire County Council for monitoring the project.

9.2 The author wishes to thank Helen Hawkins for project management and editing this report, Sandy Pullen for his assistance on site, Rick Archer for surveying, Mark Roughley for the illustrations, and Chris Jarrett and Kevin Hayward for assessing the finds. Thanks also to Lisa Lonsdale for logistical support.

10 BIBLIOGRAPHY

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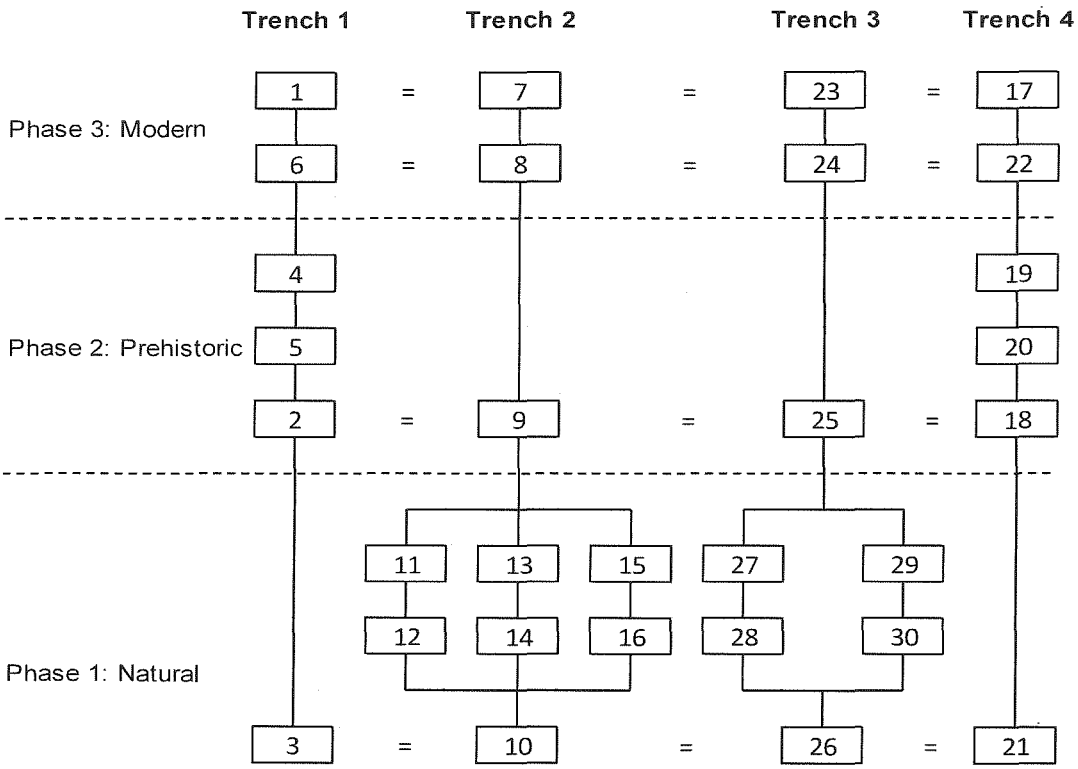
APPENDIX 1: CONTEXT INDEX

Site Code	Cxt. No	Type	Co-ords	Plan	Section	Sample No.	Date	Ph	Phot No.	Description
ECB 3238	1	Layer	TR 1	N/A	1, 2	N/A	Modern	3		Modern ploughsoil
ECB 3238	2	Layer	TR 1	N/A	1, 2	N/A	Prehistoric	2		Subsoil
ECB 3238	3	Layer	TR 1	TR 1	1, 2	N/A	Natural	1		Natural chalk
ECB 3238	4	Fill	TR 1	N/A	2	N/A	Prehistoric	2		Fill of tree-throw [5]
ECB 3238	5	Cut	TR 1	TR 1	2	N/A	Prehistoric	2		Tree-throw
ECB 3238	6	Layer	TR 1	N/A	1, 2	N/A	Modern	3		Compacted upper subsoil
ECB 3238	7	Layer	TR 2	N/A	3, 4, 5	N/A	Modern	3		Modern ploughsoil
ECB 3238	8	Layer	TR 2	N/A	3, 4, 5	N/A	Modern	3		Compacted upper subsoil
ECB 3238	9	Layer	TR 2	N/A	3, 4, 5	N/A	Prehistoric	2		Subsoil
ECB 3238	10	Layer	TR 2	N/A	3, 4, 5	N/A	Natural	1		Natural chalk
ECB 3238	11	Fill	TR 2	TR 2	3	N/A	Natural	1		Fill of natural feature [12]
ECB 3238	12	Cut	TR 2	TR 2	3	N/A	Natural	1		Natural feature
ECB 3238	13	Fill	TR 2	TR 2	4	N/A	Natural	1		Fill of natural feature [14]
ECB 3238	14	Cut	TR 2	TR 2	4	N/A	Natural	1		Natural feature
ECB 3238	15	Fill	TR 2	N/A	5	N/A	Natural	1		Fill of natural feature [16]
ECB 3238	16	Cut	TR 2	TR 2	5	N/A	Natural	1		Natural feature
ECB 3238	17	Layer	TR 4	N/A	6	N/A	Modern	3		Modern ploughsoil
ECB 3238	18	Layer	TR 4	N/A	6	N/A	Prehistoric	2		Subsoil
ECB 3238	19	Fill	TR 4	N/A	6	N/A	Prehistoric	2		Fill of three-throw [20]
ECB 3238	20	Cut	TR 4	TR 4	6	N/A	Prehistoric	2		Tree-throw
ECB 3238	21	Layer	TR 4	TR 4	6	N/A	Natural	1		Natural chalk
ECB 3238	22	Layer	TR 4	N/A	6	N/A	Modern	3		Compacted upper subsoil
ECB 3238	23	Layer	TR 3	N/A	7	N/A	Modern	3		Modern ploughsoil
ECB 3238	24	Layer	TR 3	N/A	7	N/A	Modern	3		Compacted upper subsoil
ECB 3238	25	Layer	TR 3	N/A	7	N/A	Prehistoric	2		Subsoil
ECB 3238	26	Layer	TR 3	TR 3	7	N/A	Natural	1		Natural chalk
ECB 3238	27	Fill	TR 3	TR 3	7	N/A	Natural	1		Fill of natural feature [28]
ECB 3238	28	Cut	TR 3	TR 3	7	N/A	Natural	1		Natural feature
ECB 3238	29	Fill	TR 3	TR 3	N/A	N/A	Natural	1		Fill of natural feature [30]
ECB 3238	30	Cut	TR 3	TR 3	N/A	N/A	Natural	1		Natural feature

APPENDIX 2: SITE MATRIX



APPENDIX 3: FINDS SPOT DATING

Chris Jarrett and Kevin Hayward

POTTERY		
Context No.	**Spot Date**	**Comments**
2	Prehistoric (Neo-MIA?)	Possibly Late Neolithic/Early Bronze Age – Kasia Gdaniec, pers. comm.
4	Prehistoric or early medieval	Very small fragment, more likely to be prehistoric given its location and other finds in the vicinity
7	1820 – 1900	
17	Roman	Very abraded sherd
23	1820 – 1900	
CLAY TOBACCO PIPE		
Context No.	**Spot Date**	**Comments**
23	1580 - 1910	
GLASS		
Context No.	**Spot Date**	**Comments**
23	1820 - 1900	
CBM		
Context No.	**Spot Date**	**Comments**
7	1500 – 1800	
23	1600 - 1850	

APPENDIX 4: OASIS FORM

OASIS ID: preconst1-63131

Project details

Project name	The Causeway, Bassingbourn, Cambridgeshire
Short description of the project	Four trial trenches measuring 30m by 1.8m were excavated across the site. The work was carried out prior to the proposed development of the site for social housing. In all of the evaluation trenches the earliest deposit was natural weathered chalk, though this also included a number of anomalies, mostly areas of natural staining and features formed by natural processes. In all trenches the natural deposits and features were sealed by a silty subsoil. This appears to have been naturally formed, but in Trench 1 it included sherds of prehistoric pottery, indicating a reworking of the deposit in antiquity. In Trenches 1 and 4 the deposit was also cut by a small number of tree-throw features, at least one of these in Trench 1 also producing tiny fragments of prehistoric pottery. At the top of the subsoil in all trenches was a thin layer of slightly compacted material. This appears to have been a subsoil surface layer that had been compressed by recent machinery movements above. The stratigraphic sequence in each trench was completed by the modern ploughsoil. No clear archaeological features were identified, though finds from the subsoil and tree-throws from the southwestern end of Trench 1 suggested some prehistoric activity in this area. Finds from the ploughsoil were more abundant, but these appear to have mostly derived from the site's former use as allotments.
Project dates	Start: 03-08-2009 End: 07-08-2009
Previous/future work	No / No
Any associated project reference codes	SCB3238 - Sitecode
Type of project	Field evaluation
Current Land use	Cultivated Land 3 - Operations to a depth more than 0.25m
Monument type	TREE THROW Early Prehistoric
Significant Finds	POTTERY Late Prehistoric
Significant Finds	POTTERY Post Medieval
Significant Finds	POTTERY Uncertain
Significant Finds	TILE Post Medieval
Methods & techniques	'Sample Trenches'

Development type	Rural residential
Prompt	Planning condition
Position in the planning process	After full determination (eg. As a condition)

Project location

Country	England
Site location	CAMBRIDGESHIRE SOUTH CAMBRIDGESHIRE BASSINGBOURN CUM KNEESWORTH The Causeway, Bassingbourn
Postcode	SG8 5LW
Study area	0.76 Hectares
Site coordinates	TL 3389 4409 52.0785241790 -0.04598593675090 52 04 42 N 000 02 45 W Point
Height OD / Depth	Min: 30.99m Max: 31.45m

Project creators

Name of Organisation	Pre-Construct Archaeology Ltd
Project brief originator	Cambridgeshire Archaeology Planning and Countryside Advice
Project design originator	Helen Hawkins
Project director/manager	Helen Hawkins
Project supervisor	Peter Boyer
Type of sponsor/funding body	Developer
Name of sponsor/funding body	Lovell Partnerships Ltd.

Project archives

Physical Archive recipient	Cambridgeshire County Council Archaeology Store
Physical Contents	'Ceramics','Glass','Metal'
Digital Archive recipient	Cambridgeshire County Council Archaeology Store

Digital Contents	'Stratigraphic','Survey'
Digital Media available	'Images raster / digital photography','Spreadsheets','Survey','Text'
Paper Archive recipient	Cambridgeshire County Council Archaeology Store
Paper Contents	'Stratigraphic'
Paper Media available	'Context sheet','Diary','Photograph','Plan','Section'

Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	An Archaeological Evaluation on Land at The Causeway, Bassingbourn, Cambridgeshire
Author(s)/Editor(s)	Boyer, P.
Date	2009
Issuer or publisher	Pre-Construct Archaeology Ltd.
Place of issue or publication	London
Description	Map 2 Report
Entered by	Peter Boyer (pboyer@pre-construct.com)
Entered on	12 August 2009