

◆ Roman and late medieval/early post-medieval occupation at Goddards Green, Burgess Hill, West Sussex, 2016

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An archaeological excavation was undertaken in January and February 2016 at Goddards Green, Burgess Hill, West Sussex. The excavation identified two phases of archaeological activity, the first dating to the early/middle Roman periods and the second to the late medieval/early post-medieval period. The Roman period activity comprised boundary ditches, pits, post-holes and ovens. A large assemblage of pottery was recovered; the majority is broadly Roman in date, with more closely-dated forms suggesting an early/middle Roman date for the assemblage as a whole. Plant macrofossils recovered from the ditches indicate that crop processing was taking place nearby. Late medieval/early post-medieval activity comprised four kilns. No artefacts were recovered, and radiocarbon dating was undertaken to confirm the dating of these features. Large amounts of bracken and beech charcoal were identified within the bulk soil samples, suggesting the use of these kilns for potash production as part of the wider potash/lye industry in the area.

INTRODUCTION

In January and February 2016, Cotswold Archaeology (CA) carried out an archaeological strip, map and sample excavation at Goddards Green Solar, Burgess Hill, West Sussex (centred on NGR: TQ 287211; Fig. 1). The excavation was carried out at the request of INRG Solar, as part of a programme of mitigation works required by Alexandra Egginton, Archaeological Officer, Surrey County Council, the archaeological advisor to Mid Sussex District Council. The site area had been subjected to a desk-based assessment and field evaluation in 2015 (Cotswold Archaeology 2015a and 2015b). The evaluation revealed a ditch and three pits dating to the Roman period, alongside the remains of a post-medieval to modern field system. This was followed by a more extensive strip, map and sample excavation of 0.34ha in the south-west of the development site.

The development site, which is located one kilometre north-east of Goddards Green, is approximately 12ha in extent and lies in agricultural land, with two ponds (Pond Lye to the north and Mill Pond, associated with Leigh Mill, to the north-west) located to the immediate north-west of the site, both surrounded by dense vegetation (Fig. 1). The site lies at approximately 30m above Ordnance Datum (AOD) in the north, sloping gently down to approximately 20m AOD along its southern

boundary. The underlying geology is mapped as mudstone of the Weald Clay Formation in the south of the development site, with bands of sandstone of the Horsham Stone Member recorded to the north, both formed during the Cretaceous Period. In the south-eastern part of the development site, mudstone is directly overlain by Quaternary river terrace deposits, comprising sand and gravel. No overlying superficial deposits are recorded across the remainder of the site (British Geological Survey 2017).

A detailed record of the excavation, including full specialist finds and biological evidence reports, is contained within a typescript report (Cotswold Archaeology 2017, report no. 17047) available online via the Cotswold Archaeology website (<http://reports.cotswoldarchaeology.co.uk/>). This paper represents a summary of that report.

RESULTS

Geological deposits encountered during excavation comprised orange-brown, sandy, silty clay, overlain by a grey-brown, clayey silt subsoil and topsoil deposits measuring a total of 0.3m in depth. The acidic nature of the topsoil was evidenced by the complete absence of animal bone and the moderate to substantial degree of surface loss recorded on the pottery.

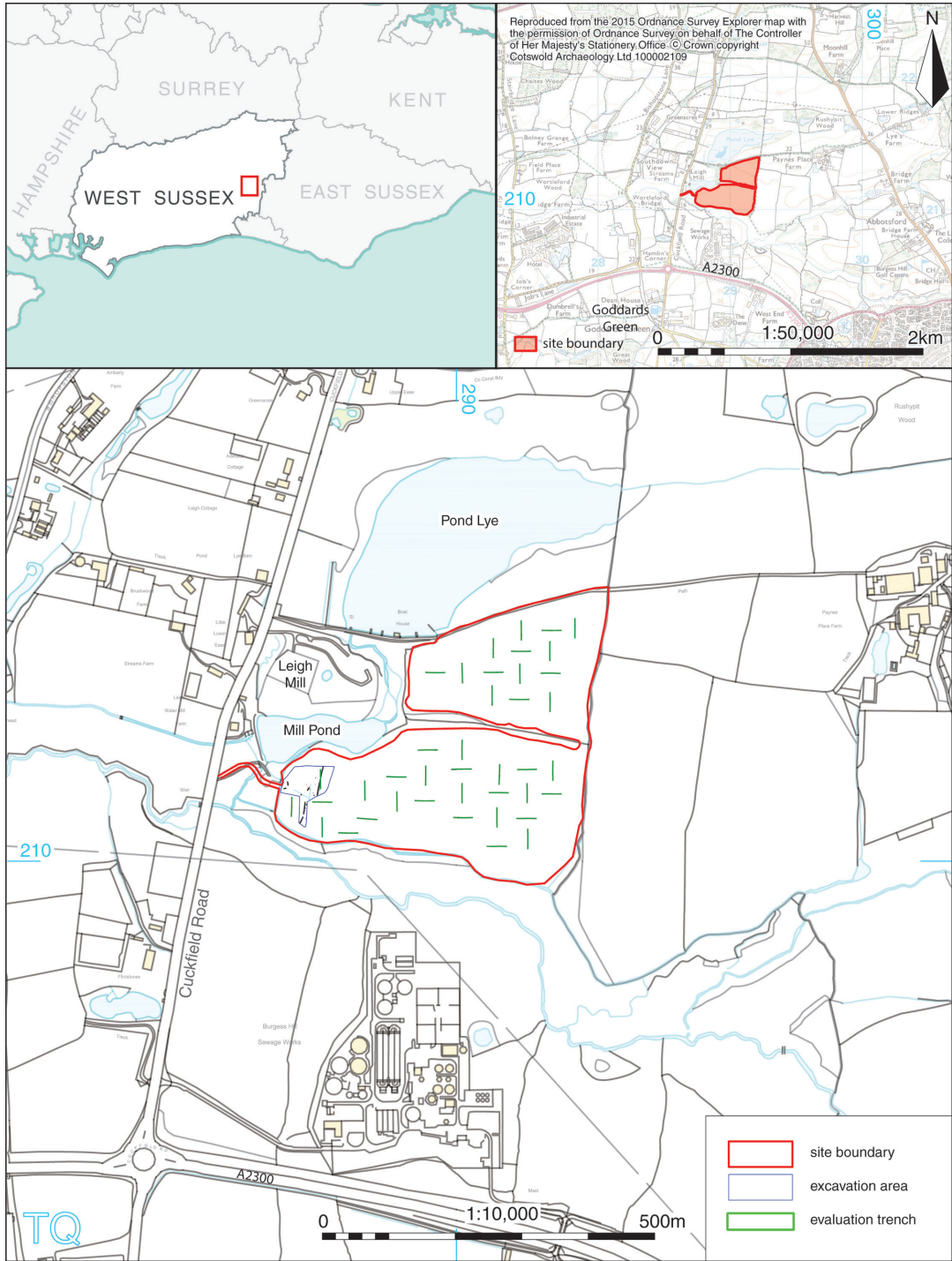


Fig. 1. Site location.

PERIOD 1: EARLY TO MIDDLE ROMAN (Fig. 2)

The early to middle Roman period (mid-1st to late 2nd century AD) was represented by three ditches, nine pits, four post-holes and two ovens, all located towards the eastern edge of the excavation area. North-east/south-west-aligned ditches 1003 and 1081, located in the south of the excavation area, appear to represent a continuous ditch line, with a 3.6m-wide gap providing access between the areas to the east and west. The northernmost ditch, 1016, was located 19m north-east of ditch 1081, and offset to the east by approximately 15m. Ditches 1003 and 1016 contained a large amount of early-to-middle-Roman pottery, and a small amount of fired/burnt clay and industrial waste within ditch 1016. Moderate quantities of Roman pottery and a residual flint flake/blade were recovered from ditch 1081. All three ditches had charcoal-rich upper fills, with ditch 1081 also containing a large dump of crop processing waste.

The pits, ovens and post-holes were all located within approximately 20m of ditches 1003, 1081 and 1016. Most of the pits and post-holes contained small amounts of Roman pottery and small-to-moderate quantities of charcoal and/or charred plant remains and were probably associated with domestic and/or industrial activity in the area. Of particular note were ovens 1080 and 2604 and pits 1020 and 1077.

Oven 1080 was linear in shape, with a layer of fine-grained, heat-affected sandy tones at its base, sealed by a charcoal-rich deposit suggesting that the fire had been lit above the basal stone layer (Fig. 3). Sealing this was a series of slumping and silting deposits which contained a small amount of pottery dating to the 2nd century AD and two residual worked flint blades and a flint core. A second possible oven, 2604, was located 0.5m east of ditch 1016. The base of the cut was heat-affected, indicating *in situ* burning, although the two fills within the oven only contained a small amount of charcoal flecking, suggesting the oven had been cleaned out prior to its final use. A single sherd of Roman pottery was recovered from the upper fill.

Pits 1020 and 1077 were located respectively 3.1m south-west of where ditch 1016 terminated and 1m east of ditch 1081. Both pits were sub-oval in shape and had charcoal-rich basal fills, containing pottery dating to the Roman period. The charcoal-rich fills from both pits possibly comprised firing debris from ovens 1080 and 2604.

PERIOD 2: LATE MEDIEVAL TO EARLY POST-MEDIEVAL (15TH TO 17TH CENTURIES) (Fig. 2)

Located at the western edge of the excavation area were kilns 1023, 1036 and 1043. No dateable artefacts were recovered; a fragment of beech charcoal (roundwood fragment) from fill 1039 within kiln 1036 was radiocarbon dated to 1489–1652 cal AD (SUERC-69659; 95.4% probability). Kilns 1023 (Fig. 4) and 1036 were broadly keyhole-shape in plan and similar in size, averaging 3.95m long and 0.77–1.5m wide. They both had fill sequences comprising a heat-affected clay base, sealed by a series of charcoal-rich fills representing raking out and re-use of the kilns. Kiln 1043 contained a similar fill sequence, but had an oval shape and was smaller, measuring 1.7m long and 1m wide. Large amounts of charcoal were recovered from the kilns, all identified predominantly as beech (*Fagus sylvatica*). Of note within the charred plant assemblage were large numbers of bracken (*Pteridium aquilinum*)/fern fronds and moderate numbers of beech nuts/cupules and hornbeam (*Carpinus betulus*) nuts. Given the similarities in shape, form and fill compositions, all the kilns are presumed to be late medieval to early post-medieval in date.

FINDS AND BIOLOGICAL EVIDENCE

Artefactual material recovered from the site includes pottery, fired/burnt clay, glass, industrial waste and worked flint. Biological material includes charcoal and charred plant macrofossils.

THE FINDS

A moderate assemblage of pottery comprising 673 sherds (7385g), all Roman in date, was recorded. Most of the pottery exhibited a moderate to substantial degree of surface loss, a result of acidic soil conditions, rather than post-depositional movement. Evidence for use, including internal carbonaceous (burnt food) residue, external sooting and internal 'limey' deposits, was recorded on 20 sherds.

The pottery assemblage consists almost entirely of locally-manufactured coarsewares, with East Sussex grog-tempered ware most commonly represented (508 sherds; 75%). Sandy fabrics in reduced-firing (98 sherds; 15%) and oxidised fabrics (52 sherds; 8%) are also represented. The only continental imports are seven sherds of south Gaulish samian ware, including a rimsherd from a Dragendorff 35 cup and a base sherd from a Dragendorff 18 platter.

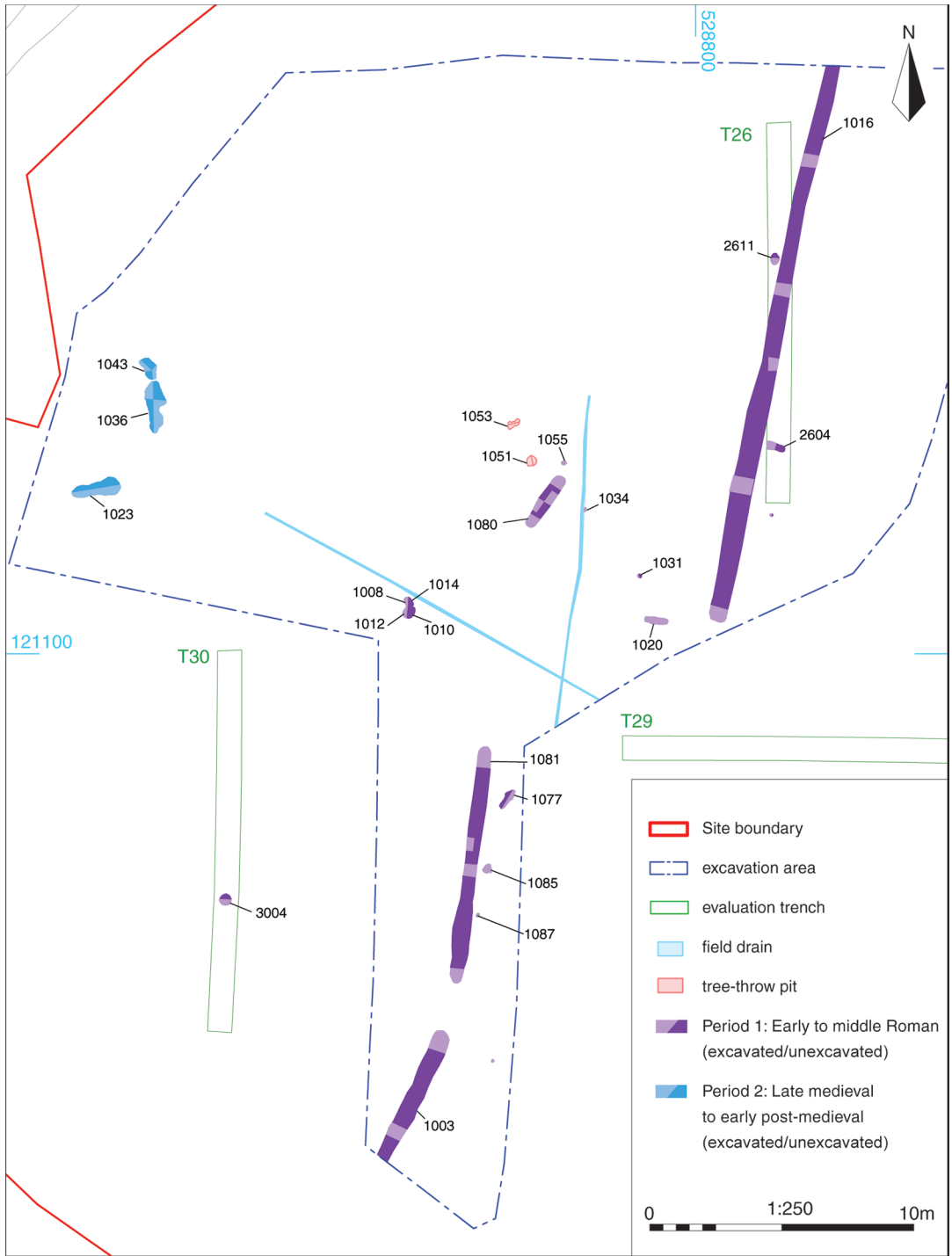


Fig. 2. Plan showing site phases.

Most of the pottery dates to the Roman period. The small number of sherds more closely dating to between the mid-1st to 2nd centuries AD, together with the absence of any forms/vessels dating to the later Roman period, suggests an early-to-middle-Roman date for the assemblage as a whole. Identifiable forms include mostly jars, the majority consisting of necked types or neckless vessels with everted rims. Other forms comprise a small number of flat-rimmed dishes, a platter and a shouldered bowl.

Other finds include industrial waste (four fragments; 109g) from an indeterminate process, amorphous fired/burnt clay fragments (approximately 1000 fragments; 4.09kg), the majority of which originate from the burnt *in situ* clay layer within the bases of Period 2 kilns 1023, 1036 and 1043, a small number of residual flint flakes, blades and a core (7 items; 211g), likely to be mesolithic or early neolithic, and an intrusive fragment (0.15g) of modern glass.

PLANT MACROFOSSILS AND CHARCOAL

A total of 17 bulk soil samples were recovered from Period 1 ditches, pits and an oven, and the three Period 2 kilns. Plant macrofossils were generally low in concentration within the Period 1 features, with the most notable remains coming from within ditch 1081. The latter comprises a large assemblage of emmer/spelt wheat (*Triticum dicocum/spelta*) cereal chaff, alongside a small number of emmer/spelt wheat cereal grains and weeds indicative of arable and disturbed environments. This assemblage provides evidence for crop processing, most likely the parching and de-husking of emmer and spelt wheat spikelets, within the vicinity of the site.

The small number of remains within other pit, ditches and post-hole features includes cereal chaff, possible vetch (*Vicia/Lathyrus*) and hazelnut shells and is indicative of dispersed hearth waste. Charcoal was dominated by oak (*Quercus*), with smaller quantities of cherry species (*Prunus*), birch (*Betula*), alder (*Alnus glutinosa*), hazel (*Corylus avellana*), willow/poplar (*Salix/Populus*), maple (*Acer campestre*), ash (*Fraxinus excelsior*), holly (*Ilex aquifolium*) and elder (*Sambucus*).

The Period 2 kilns contained a large number of bracken/fern (*Pteridium aquilinum*/fern) frond fragments and a moderate number of beech (*Fagus sylvatica*) nuts, alongside a small number of hornbeam (*Carpinus betulus*) nuts and weeds,

indicative of disturbed grassland and scrub environments. Charcoal was abundant and identified as predominantly beech, with smaller quantities of oak, birch, hornbeam and holly. Both beech wood and bracken/fern are known to have been used in the potash/lye industries, providing a possible function for these features.

DISCUSSION

The results demonstrated domestic and/or industrial activity in part of the site during the Roman period, with further industrial activity taking place nearby to the west during the late medieval/early post-medieval period.

ENVIRONMENTAL AND GEOGRAPHICAL SETTING

The site was located on the western slope of a hill, which is typical of the gently undulating wider landscape of the Low Weald. There are numerous small watercourses within the area feeding into, and draining, Pond Lye to the north and Mill Pond (associated with Leigh Mill) to the north-west of the site (Fig. 1). The local soils were acidic in nature, which is expected of soils formed from the Weald Clay Formation (British Geological Survey 2017). A series of field boundary ditches identified within the archaeological evaluation correspond with former field boundaries first depicted on the 1809 Cuckfield Place Estate Map and still extant at the time of the 1842 Hurstpierpoint Tithe Map (Fig. 5). The boundaries had been removed prior to the 1897 First Edition Ordnance Survey Map. During the 20th century the site had been used as pasture and lies within a largely agricultural landscape, with the towns of Haywards Heath 4.5m to the north-east and Burgess Hill 1.25km to the south-east.

Period 1: Early to middle Roman (1st to 2nd centuries AD)

Three broadly north-east/south-west-aligned ditches were identified on site. Ditches 1003 and 1018 appear to represent a continuous ditch line, with the 3.6m-wide gap providing access between the areas to the east and west of the ditches. Ditch 1016 was located 19m north-east of ditch 1081 and offset to the east by approximately 15m.

The pottery dating from these features provides no conclusive evidence to suggest northern (and offset) ditch 1016 can be attributed to an earlier or later phase of Roman activity. As such it is

difficult to ascertain the function of these ditch boundaries. One suggestion is that the ditches make up the eastern and western boundaries of a trackway, although this is unlikely given there was no evidence for the continuation of ditch 1016 recorded within Trench 29 in the preceding evaluation (Cotswold Archaeology 2015b). It also seems unlikely these are agricultural divisions, which are usually continuous, and they may represent segmented land boundaries for settlement and/or industry.

The pits, oven and post-holes were all located within approximately 20m of ditches 1003, 1081 and 1016. Other than pottery, no other artefacts that could aid interpretation of these features were recovered. The pottery was utilitarian in nature, consisting of jars and coarseware dishes/bowls. Few drinking/serving vessels were represented, although a small amount of fineware was indicated by the south Gaulish samian ware. Taken together, this assemblage is typical of that found associated with rural habitation/settlement (Evans 2001), although

there was no evidence of settlement-related features (such as roundhouses/structural remains) suggesting that any settlement was located outside the site/nearby.

The environmental samples recovered provide some interpretative information. A large assemblage of crop processing waste dominated by cereal chaff was recovered from ditch 1081 and is characteristic of the waste obtained from the parching and de-husking of emmer and spelt wheat spikelets. The origin of this charred processing waste is difficult to ascertain. Oven 1080 (Fig. 3) contained a large assemblage of oak charcoal with no other archaeobotanical or artefactual evidence indicative of its use; and oven 2604 appeared to have been cleaned out prior to backfilling. It is possible that both ovens had originally functioned as corn driers but had been cleaned out and reused for other purposes.

Alternative functions for oven 1080 could include cooking or industrial activities such as metalworking, although the absence of material



Fig. 3. Period 1: oven 1080, looking north-east. Scale: 0.5m.

culture means this is entirely speculative. The construction of the oven included the layer of fine-grained siltstones at the base, which would have allowed the circulation of air, and together with the use of oak (a highly calorific and efficient fuel) suggests the activity taking place may have required high, and long lasting, temperatures.

Across the Weald, few Roman settlements or farmsteads have been recorded, which may be due to the poor, acidic soils, woodland cover or simply the absence of archaeological investigations. Nearby sites providing evidence of settlement or industrial activity include Innovation Drive in Burgess Hill, approximately 2.7km south of the site (Harris 2005), land west of Burgess Hill between Eastlands Farm and Locks Manor, located just over 2km south-east of the site (Sawyer 1999), and Theobalds Road, Wivelsfield, East Sussex (Powell 2015) located 2.25km south-east of the site. These comparative examples suggest that, despite the absence of settlement-related features (roundhouses/structures), the activity

undertaken, and artefacts and biological material recovered at Goddards Green, are typical of that seen in the wider landscape and add to the corpus of material recording a picture of rural Romano-British activity in the Lower Weald area.

Period 2: late medieval to early post-medieval

Late medieval to early post-medieval activity included the excavation of three kilns (1023, 1036, 1043) at the bottom of the hill, towards the western edge of the excavation area. No artefactual material was recovered from the kilns, but radiocarbon dating of a fragment of beech roundwood from kiln 1036 returned a date of 1489–1652 cal AD (SUERC-69659; 95.4% probability).

Detailed environmental and charcoal analysis of the three kilns has revealed a predominance of beech charcoal and beech nuts, alongside a large assemblage of bracken/fern fronds. Possible industrial processes taking place include charcoal production or the extraction of tar from burning



Fig. 4. Period 2: kiln 1023, looking north-west. Scale: 1m.

wood to produce wood ash, which is used in the production of potash and lye. Given the combination of both beech wood and bracken/fern fronds, both of which are known to have been used historically in the potash and lye industries (Gale and Cutler 2000, 110 and 405), the latter of these two industries seems most plausible.

Bracken and beech, when burnt, both provide potassium-rich plant ashes. The beech would have been burnt as branches or timbers and the bracken would typically have been burnt while green, to capture the highest concentration of potassium. The ash produced would then have been soaked in water to produce liquid potash/lye (caustic potash/potassium hydroxide solution). This potash/lye solution would have been used either in its liquid state or boiled down to produce calcinated or caustic potash (potassium hydroxide salt), which was used to produce soap and in textile bleaching, glass-making and lead-smelting, and as a constituent of fertiliser.

Looking at the wider medieval to post-medieval landscape, the lye industry seemed to be prominent

within this area, as suggested by place names such as Lye Mill on the 1842 Hurstpierpoint Tithe Map (Fig. 5) (which later changes to Leigh Farm on the 1897 Ordnance Survey Map). In addition, the large pond to the north of the development site (Fig. 1) was recorded as Pond of Lye on the 1896 and 1873 Ordnance Survey Maps, Leigh Pond on the 1897 Ordnance Survey Map, and is known today as Pond Lye on modern mapping. Woodland to the south of Pond Lye/Leigh Pond, and the central part of the site, may have formed a source of timber for the kilns, with the bracken sourced from scrub on the woodland edges.

It is difficult to ascertain which type(s) of industry the potash/lye would have been used within. Castagnino (2013) notes that the burning of wood for glassmaking was banned in 1615, which led to the end of the Wealden glass industry. This may perhaps have reflected other competing demands for wood, charcoal and ash and the dominance of other industries. There does not appear to be any archaeological or historical evidence for soap or glass production, textile processing or lead smelting



Fig. 5. Extract from the 1842 Hurstpierpoint Tithe Map (WRSO: Sergison 526/14). Scale: approximately 1:7000. *Reproduced with permission from the West Sussex Record Office.*

in the immediate area. However, it is possible that potash/lye was being produced in this location and transported for use elsewhere. Alternatively, given the absence of evidence for later industrial processes, it is possible the potassium-rich ash was being utilised as a component of fertiliser, which would have been necessary to farm the naturally acidic soils in the Weald area.

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