Archaeology South-East

ASE

Cremer & Whiting Brickworks, Sumpter Way, Ospringe (Nr. Faversham), Kent, M13 7NT

NGR: 59998 16147

Historic Buildings Record

Project no. 170341
Report No. 2017229
Site Code. COW17
OASIS ID. Archaeol6-286456

June 2017

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SUMMARY

In May 2016 Archaeology South-East (a division of the Centre for Applied Archaeology, UCL) carried out a historic buildings record of the Cremer & Whiting Brickworks, Sumpter Way, Ospringe, Kent, ME13 7NT (Figures 1 & 2; NGR 59998 16147). The work was commissioned by Orion Heritage on behalf of W.T. Lamb Holdings Ltd. and requested by Swale Borough Council, to be addressed as a condition placed on outline planning consent relating to the part demolition and retention of the existing brickworks structures on the site, ahead of its redevelopment for residential use (planning ref. 14/502729/OUT).

The Cremer & Whiting Brickworks was established during the 1920s on the site of an earlier brickfield known as 'Owen's', which had been worked since c.1850 and ceased production by the third quarter of the 19th century. The Cremer family were notable brickmasters within the Faversham area and owned a number of brickfields within the district. This included Cremer's Field in Oare Road (formerly Wildash Field), which was acquired in c.1880 and ceased production in 1912, and another small brickfield in Whitstable Road, which originated around 1870-75 and was worked up until World War II (Twist 1984). Earlier evidence of the Cremer family business dates to around the 1840s when Charles and William Cremer at Ospringe are identified as brickmakers. In the 1870s, a Cremer & Co. brickmakers is recorded in Preston-next-Faversham (SECL 2014). The Whiting family appear to have also been involved in construction and building material, at Ospringe, since the early 19th century. In 1905, Robert M. Whiting, is recorded as a brick and tile maker and insurance agent, under the name Whiting & Co., within the Ospringe directories. The Whiting's Copton Works were worked during the 1850s and closed in 1925. In 1926, Whiting & Co. are recorded as merging with Cremer & Co. and their combined brickworks are first shown on historic mapping dating to 1931 (SECL 2014).

Faversham played a significant role in the expansion of the London underground railway during the 19th century, as the major manufacturer of what came to be known as the London stock brick. Due to favourable natural resources, the Faversham area brick industry rapidly expanded, and from 1840 contained c.14 stock brick fields. Only eight or so were still being worked in the first decade of the 20th century (Twist 1984). The Cremer & Whiting Brickworks was one such brickfield, and ran throughout the 20th century, managed and owned firstly by Ben and Harry Cremer, and later by W.T. Lamb Holdings Ltd from the 1960s onwards.

The north of the site produced yellow London stock bricks, while the southern end manufactured red bricks, and later, shaped facing bricks called 'specials'. By 1966 the company ceased manufacture of stock bricks and continued solely with their red brick production. However, in 1987 the brickworks were running low in red stock brickearth and so opened a new extraction area east of Bysingwood Road, as well as resuming stock brick production within the southern half of the site. Up until 2014, the brickworks formed one of only a few such works in the country that still produced bricks using traditional hand-made techniques. The brickworks has since ceased brick manufacture and is primarily used for storage of the their existing brick stock.

The earliest components of the site have predominantly gone, including the original kilns and hacks, although a chimney that served the demolished kiln buildings does survive. Later structures include a main building, dating to the 1950s which was used for brick moulding and artificial drying prior to firing; a clay wash mill constructed during the third quarter of the 20th century, to prepare the raw clay ready for the moulding process; a making shed which was raised between the 1970s and 1980s, and in 2004, a kiln shed replaced two kiln buildings. Other structures dating to the brickworks' later history include a storage shed, office, electrical sub-station and a bungalow, all of which originate from the end of the 20th century onwards. The northern factories have been dismantled and this half of the site comprises open shrub land.

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1.2 The work was commissioned by Orion Heritage on behalf of W.T. Lamb Holdings Ltd. and requested by Swale Borough Council, to be addressed as a condition placed on outline planning consent relating to the part demolition and retention of the existing brickworks structures on the site, ahead of its redevelopment for residential use (planning ref. 14/502729/OUT). This will include the construction of up to 250 dwellings, new vehicular access and roundabout on the Western Link, a public open space and associated infrastructure. Condition 16 of 14/502729/OUT states that:

> *No development shall take place until the applicant, or their agents or successors in title, has secured the implementation of a programme of building recording in accordance with a written specification and timetable which has been submitted to and approved by the Local Planning Authority.*
>
> *Reason: To ensure that historic building features are properly examined and recorded.*

1.3 The clay wash mill and chimney will be retained in the new development.

1.4 All other structures, predominantly relating to the later 20th and 21st century development of the site, are to be demolished. These are the main building (*c.*1950s), making shed (1970s), office (1970s), shed (1970s), kiln shed (2004), bungalow (modern).

2.0 SCOPE & METHODOLOGY

2.1 The recording undertaken on the 15th and 16th May 2017, involved the survey of the buildings to Levels 1-3 standard as defined by Historic England (2016) and as set out in the written scheme of investigation (ASE 2017) and a brief issued by Kent County Council. A Level 2-3 record was made of the main building, chimney and clay wash mill, including the production of a condition survey of the Chimney and Clay Wash Mill. A Level 1 record was produced for the remaining buildings (making shed – 1970s, kiln shed – 2004, office – 1970s, bungalow – modern, shed – 1970s). A plan showing the structures surveyed and the level of the record for each structure has been reproduced as Figure 2.

2.2 Subject to accessibility, a photographic record was made of the exterior and interior of each of the buildings. The buildings and their setting were digitally photographed, including general external and internal views and surviving architectural detail, fixtures and fittings, including details of machinery. An index of the digital photography is included as an appendix to this report.

2.3 The written description and photographic record is supplemented by a drawn record of the site. This comprises a location plan including photograph locations, plans of the structures recorded to Level 2-3 standard and an outline plan of the whole site.

As-existing measured survey drawings provided by the client, were checked on-site and augmented with additional features where necessary (Figures 14 and 15). Schematic elevation sketches were produced as part of the condition survey for the chimney.

2.4 The site has been the subject of a heritage statement previously produced for the site in 2014 (Sevenoaks Environmental Consultancy Ltd (SECL) 2014), in addition to a condition survey (Gould 2014). Additional cartographic resources were consulted at the Kent History and Library Centre on the 23rd May 2017, in addition to documents held by W.T. Lamb Holdings Ltd., in order to place the site within its historic context.

3.0 SITE LOCATION

3.1 The site is located north of Ospringe Street, approximately 1.5km west of Faversham in Kent, and covers an area of *c.* 8 hectares. The proposed development site is bounded to the south by the London to Dover railway, and to the west by the Western Link road. To the north, it is bounded, in part, by premises adjoining Whiting Crescent. Its eastern boundary is irregular, but adjoins the grounds of Bysing Wood Primary School, Kiln Court, and dwellings adjoining Sumpter Way and Benstead Grove. The site consists of the Cremer, Whiting and Company Brickworks. The southern portion of the site contains a number of surviving brickworks buildings and structures. The northern portion is predominantly open scrub land.

3.2 None of the structures located within the site are statutorily or locally listed. Neither do they lie within the Ospringe Conservation Area which is located a distance to the south-east of the site.

4.0 HISTORIC BACKGROUND

4.1 The following information has been compiled from documents viewed at the Kent History and Library Centre, in addition to the existing heritage statement produced for the site (SECL 2014). A brief history of the brickmaking process at the works is also included as Appendix 1.

4.2 At the beginning of the 19th century, the site lay in undeveloped fields belonging to the Davington and Syndale estate. By 1838, a terrace of cottages was constructed to the east (Gravel Pit Cottages) for workers of the Owen Brickfield (Twist 1984), as shown on R.H. Cowell's map of the area (Figure 3), and by the end of the 19th century one or more small gravel or brickearth pits had been dug to the east of the site. The Union Workhouse was erected in 1835 immediately to the east of the site. By this date, the eastern and northern edges of the site contained a large brickearth pit. By the time the Faversham tithe map (Figure 4) was produced, the majority of the site, labelled as Davington Field, belonged to the Twisden family, while part of the southern part of the site, known as Lion Field, was owned by William Henry Baldock and leased by Joseph Kingsnorth; it was then under arable cultivation. Both became part of the Syndale estate by the mid-/late 19th century. The Ordnance Survey maps of 1877 (Figure 5), 1897 (Figure 6) and 1907 (Figure 7), show the gradual development of brickearth quarries across the site. By 1918, the owner of the Syndale estate died and portions of the outlying estate were sold off, including Gravel Pit Cottages and numerous lots around Ospringe, and probably also the proposal site (SECL 2014).

4.3 The Cremer & Whiting Brickworks was established during the 1920s on the site of an earlier brickfield known as 'Owen's', which had been worked since *c.*1850 and ceased production by the third quarter of the 19th century (Twist 1984). The Cremer family were notable brickmasters within the Faversham area and owned a number of brickfields within the district. This included Cremer's Field in Oare Road (formerly Wildash Field), acquired *c.*1880 and ceased production in 1912, and another small brickfield in Whitstable Road, which originated around 1870-5 and was worked up until World War II (Twist 1984). Earlier evidence of the Cremer family business dates to around the 1840s when Charles and William Cremer at Ospringe are identified as brickmakers. In the 1870s, a Cremer & Co. brickmakers is recorded in Preston-next-Faversham (SECL 2014). The Whiting family appear to have also been involved in construction and building material, at Ospringe, since the early 19th century. In 1840 a William Whiting is recorded in Ospringe, and in 1905, Robert M. Whiting, is recorded as a brick and tile maker and insurance agent, under the name Whiting & Co., within the Ospringe directories (Clarke Vol. 21). The Whiting's Copton Works were worked during the 1850s and closed in 1925. In 1926, Whiting & Co. were recorded as merging with Cremer & Co. and their combined brickworks, are first shown on historic mapping dating to 1931 (SECL 2014). The works were listed as the red Kent stock brick and tile makers, gravel merchants, and farmers in 1930, and the brickworks was first known as 'Union Fields' after the neighbouring institution (SECL 2014).

4.4 Faversham played a significant role in the expansion of the London underground railway during the 19th century, as the major manufacturer of what came to be known as the London stock brick. Due to favourable natural resources and a good transportation system, the Faversham area brick industry rapidly expanded, employing over 40,000 persons (Bevan 1882) by the mid-19th century. From 1840 Faversham contained *c*.14 stock brick fields (The Faversham Society). Only eight or so were still being worked in the first decade of the 20th century (Twist 1984).

4.5 By the 1930s Cremer & Whiting Co. were managed by Ben and Harry Cremer and operated two distinct factories within the proposal site. The Ordnance Survey map of 1938 (Figure 8) shows both brickwork sites. The northern part of the site made yellow stock bricks, which were transported via the nearby railway. This factory was accompanied by two large groups of hacks – used for drying the 'made' bricks before firing, in addition to several smaller buildings along the southern edge of the site (Twist 1984), as can be seen on aerial photography dating to 1947 (Figure 9). The production in the northern half of the site ceased in 1966-7. By 1980, all associated buildings within this half had been demolished. The southern factory produced red bricks, until relatively recently (2014) and comprised a long group of hacks, stretching north – south from the railway. To the east of these stood two large kilns, served by a chimney. Several other smaller buildings flanked the west side of the hacks (SECL 2014).

4.6 A narrow-gauge railway line was laid to the site in 1939, and shortly after World War II the main building of the factory was constructed, containing brick drying chambers. This building replaced some of the older drying hacks. Several asbestos-clad extensions to the west and south of the main building were added shortly afterwards, using narrow-gauge railway tracks for framing. Other drying hacks were dismantled over subsequent decades (SECL 2014). The brickworks was bought by W.T. Lamb Holdings Ltd. in 1960; Lamb Holdings had been founded over 100 years previously by William Tribe Lamb (The Faversham Society).

4.7 During the third quarter of the 20th century, the railway line into the factory was dismantled and the present wash mill was built, and the south-east corner of the site was set aside for washbacks. The present making shed was raised during the 1970s – 80s. By 1987 the brickworks were running low in red stock brickearth and so opened a new extraction area east of Bysingwood Road, as well as resuming stock brick production within the southern half of the site, in addition to the manufacture of red brick 'special' facing bricks (Clarke Vol. 21). In 1990, the Western Link road had been built along the west side of the site. In 2004, the two kiln buildings of the eastern half of the site were demolished, and the present kiln shed erected in their place. Up until 2014, the brickworks formed one of only a few such works in the country that still produced bricks using traditional hand-made techniques (Filmer Vol. 1). The brickworks has since ceased brick manufacture and is primarily used for storage of the their existing brick stock.

5.0 DESCRIPTION OF THE BRICKWORKS

5.1 Overview (Figures 2 12-15)

To the north, the Cremer & Whiting Brickworks now consists of open scrub land, with tree-lined borders separating it from the Western Link road to the west and residential housing and Bysing Wood Primary School to the east. The irregular shaped field formerly contained their yellow stock brick factory built during the 1920s. By the 1980s, all the structures within this part of the site had been demolished (Plate 1), following the closure of the factory between 1966-7. The southern half of the site contains eight extant structures, together with areas of hardstanding, metal storage containers and a modern electricity sub-station (Plate 2). All date to the later 20th and 21st century development of the site, aside from the chimney and clay wash mill which were built during the original phase of development during the 1920s, and the main building which was built between 1945 and 1950 as part of site's post World War II modernisation. All the extant structures were dedicated to the production of red bricks and the administration of the company. The structures comprise a chimney, clay wash mill, main building (where bricks were moulded and dried), making shed, kiln shed, shed (for brickearth storage), site office and a residential bungalow. They are arranged in an irregular pattern, filling the north-eastern side of this area of the site. The south and west sides were set aside for brickearth storage and washbacks, these areas have now been levelled ahead of the site's consolidation for redevelopment. Today, the manufacture of bricks no longer continues on site, instead it serves as a distribution point for the company's existing stockpile.

Level 2-3 Building Descriptions

5.2 Chimney

5.2.1 NGR: 599937 161301

5.2.2 Level of record: 2-3

5.2.3 Date of construction: 1920s

5.2.4 Description: (Figure 13)

Overview

5.2.5 The present chimney (Plate 3) originally served two large kiln buildings, both of which have since been demolished. Forming some of the earliest buildings on the site, these kiln buildings and chimney were accompanied by a long group of hacks, stretching north – south across the site, in addition to several smaller structures and two large clamp kilns to the west. The chimney is situated to the south of the office and to the east of the kiln shed.

Exterior

5.2.6 The structure comprises an essentially square plan chimney stack of orange brick construction in English bond. The entire structure rises above ground level by approximately 9m and is divided into three unequal sections by two offsets within the brickwork. The first offset is located just under halfway up its surviving extent, whilst the second is located just below its present top. The structure measures 2.11m x 2.11m at its base, reducing in thickness with each offset by *c.*110mm on all sides. The lower offset is capped with chamfered bricks, whilst the upper course is topped by overburnt ceramic tiles (Gould 2014). Each elevation is restrained with cast iron angle plates and straps which are bolted at each corner. All but the north elevation are fixed with three cast iron angle brackets, which support a type of rotary mechanism, comprising two cast iron pulley wheels which turn on their axis around a stationary rod (Plate 4). The south elevation ironmongery is additionally fitted with a chain at its western end. The brackets have been retained on the east elevation, but the rotary mechanism has been lost. It appears that additional machinery / structures originally stood against or adjacent to the mechanisms, as evidenced by the lighter colour of the brickwork in these areas, as opposed to the surrounding brick which has been discoloured by pollutants.

5.2.7 The chimney is surrounded to its south and west sides by areas of loose brick paving and concrete hardstanding, presumably relating to the demolished kiln buildings. Voids were observed adjacent to the south and west elevation bases, each measuring a depth of *c.*0.6m, another opening was recorded *c.*10.5m to the south of the structure. It is likely these voids formed part of underground passages or a flue network connecting the kiln building interior/machinery to the chimney. Strewn around the base of the structure are several displaced iron straps and a twisted steel rope with looped ends, the context of this item having been lost with the demolition of the kiln buildings.

Interior

5.2.8 The interior was not accessible for photographing. Aerial photography indicates the chimney stack is open at its top.

Condition

5.2.9 The chimney is in a generally poor condition. Comparison of its recorded condition in 2014 (Gould 2014), identifies that its overall condition has deteriorated, despite vegetation clearance undertaken on its north elevation, and its enclosure within Heras fencing. The structure is suffering from both hairline and substantial cracking to the brickwork on all sides, in addition to damage caused by encroaching vegetation. A number of bricks have been dislodged, and a limited number of bricks show signs of spalling. The iron pulley mechanism has also corroded in places, which has caused cracking in the surrounding brickwork.

West Elevation (Plate 5)

5.2.10 There is stepped cracking through the brickwork and mortar joints, measuring a width of between 50mm – 100mm, which extends through approximately 46 courses of the southern side of the two upper levels, terminating at the south-west corner.

5.2.11 Corrosion of the iron brackets has cause radiating and vertical cracking around each fixing. These cracks roughly measure between 50mm – 200mm; the cracking surrounding the northernmost bracket are comparatively more substantial and extend to the top of this lower section.

5.2.12 Ancillary hairline cracking extends through approximately 6 courses of brickwork within the central section at the ground floor level.

5.2.13 Limited areas of displaced and missing mortar are located on the uppermost level and at ground floor level.

5.2.14 The surfaces of the bricks remain in reasonable condition, although the brickwork below the pulley mechanism shows discolouration consistent with salt staining. Staining is likely to have occurred due to the close proximity of the ground level. Also, an associated patch repair in this area using a harder cement mortar, appears to be forcing moisture and impurities out through the brick rather that the mortar.

5.2.15 The iron strap work formerly secured at the north-west corner at the join between the lower and upper sections, has become loose and projects outwards from the brickwork in this location, this in turn has caused minor abrasion to the surrounding brickwork through friction caused in windy conditions. The connectivity between the angle straps encasing the brickwork of the north-west corner, has become loose due to pressures caused by climbing vegetation and warping caused by iron corrosion.

South Elevation (Plate 6)

5.2.16 Vertical hairline cracking extends through roughly 23 courses of the brickwork and mortar joins at the eastern side of the middle section.

5.2.17 The lower section is divided at its centre by a large vertical crack which extends throughout the brickwork and mortar joints, both above and below the central corroded iron bracket. The crack was widest just below the bracket, measuring

25mm. The lower section of the crack opens out approximately 10 courses above ground level, into an area of loose and missing brickwork. At its widest point this opening was noted to be 0.46m wide. The cause of the opening appears to be connected to some incursion by climbing plants and the lack of ground level support in the location of the adjacent void.

5.2.18 The angle strap securing the upper level of the south-east corner has come away from the surrounding brickwork due to warping caused by iron corrosion. The angle strap securing the south-west corner has also been forced outwards from the brickwork due to climbing vegetation. Additionally, the strap securing the join of the middle and lower sections is no longer secured at its western end.

5.2.19 The uppermost section is missing a single brick and tile to the offset at its western end.

5.2.20 Much like the west elevation, the lower section bricks show discolouration consistent with salt staining. The general condition of the brickwork is sound at the upper level, although limited areas of the lower level brickwork have suffered from spalling. Areas of pointing are open and weathered in places within the upper sections, despite this the condition of the mortar is reasonably well preserved.

East Elevation (Plate 7)

5.2.21 A vertical crack extends from the join of the uppermost offset through approximately 28 courses of brickwork and mortar, in places measuring between 50mm to 100mm thick.

5.2.22 A hairline crack runs throughout *c.* 10 courses along the southern end of the middle section. An additional hairline crack was noted on the lower section, towards the southern end, extending from the section top through the mortar of *c.* 11 courses.

5.2.23 The angle iron strap-work securing the north-east corner is coming loose. The central cast iron bracket is corroded and is most likely the cause of radiating cracking in this location. Resultant cracking situated around the bracket mortar joints most noticeably comprises a stepped mortar crack above, extending through nine courses (measuring 50mm at its widest point), and a vertical crack to the south, measuring between 50mm and 150mm, and extending 11 courses of brickwork and mortar.

5.2.24 The surfaces of the bricks are well preserved, despite a limited area of truncation where four screws have been inserted within the central upper section. The mortar joints remain intact, with only isolated areas of weathering. Surface damage was noted on the edge of the southernmost capping tile upon the uppermost offset.

North Elevation (Plate 8)

5.2.25 Hairline vertical cracking was noted extending through 13 courses of brickwork and mortar joints on the west side of the central upper section. Within the same section, a stepped mortar hairline crack was noted extended through 12 courses along the eastern side.

5.2.26 A vertical crack, measuring approximately between 50mm and 70mm at its widest points, extended throughout the entirety of the mortar and brickwork along the western side of the lower section.

5.2.27 The top courses of the uppermost section that were noted as loose within the 2014 report (Gould), have now been lost. Additionally, three capping tiles on the uppermost offset are missing.

5.2.28 The condition of the brickwork is generally good, except for a concentrated area of surface spalling at the eastern end of the lower section, and a small area of salt perforation within the centre. The mortar joints are also relatively intact, aside from a weathered area of loose mortar to the western side of the lower section.

5.2.29 The iron angle strap level with the lower offset is unfixed at the western end. Incursion of climbing plants has resulted in the angle iron straps to be forced away from the brickwork at the north-east and north-west corners.

5.2.30 *Conclusion*

Repairs should be undertaken to stabilise, make good and preserve the chimney. Where repairs are required these should be carried out on a like-for-like basis to conserve the character and appearance of the building. Such works should include the raking out and repointing of open and weathered mortar joints. Re-forming and rebuilding the chamfered offset and tiles to the top of the offsets. Where cracks have extended through the brickwork, these should be made good with new brickwork. The lower section of the south elevation will need to be rebuilt. All cast iron material, including fixed and unfixed members, will need to be treated with an appropriate rust inhibiter, painted and refixed. Any work should aim to retain and reuse as much of the original fabric, where possible.

5.3 Clay Wash Mill

5.3.1 NGR: 599917 161223

5.3.2 Level of record: 2-3

5.3.3 Function: To prepare the clay for brick production, by mixing with water to separate impurities

5.3.4 Date of construction: Third quarter of the 20th century

5.3.5 Description: (Figure 14)

Operation

5.3.6 The majority of clays require purification before their use for brickmaking. The cleaning process is predominantly done to remove hard stones, large pieces of limestone (which can cause the bricks to crack in moist air), sand, ironstone nodules, roots and other vegetable matter. The most common technique for cleaning clays (and chalk) involves mixing it with a large quantity of water. When the clay is washed, a slurry or slip is formed, this is then allowed to rest for a short time. The liquid is run off after the rest period, removing the clay and leaving any impurities behind (NPCS 2007). The appliance used for this purpose is a wash mill.

5.3.7 A wash mill of this size would usually treat from 20 to 40 cubic yards of material per day, dependant on the quality, and the frame would be rotated approximately 9 to 10 times per minute. The tank would be filled to three-quarters of its depth with water

and the material to be washed (clay). A thick slurry is formed by the tearing motion of the harrows on the clay. At suitable intervals the mill is stopped, and the slurry allowed to run out into settling tanks or wash-backs, with the stones and other undesired matter remaining in the mill. After being tilled and emptied three or four times, the mill is cleaned (NPCS 2007).

Wash Mill

5.3.8 The wash mill (Plates 9 and 10) is situated along the south-east corner of the site and was constructed in the second quarter of the 20th century, following the removal of the railway track from this area of the site. The structure consists of a circular tank measuring 4.48m in diameter and between 1.2m to 1.6m deep, the centre of which is filled by a second smaller tank (Plate 11), measuring a diameter of 2.25m. Both tanks are constructed in 225mm brown-orange brickwork laid in header bond, capped with a brick-on-edge soldier course. The inner walls of the outer tank show discolouration, approximately 0.6m from their top, caused by the composite build-up of clay layers during washing. At the centre of the inner tank is a cast iron column (Plate 11), which acts as a pivot on which is hung a horizontal metal frame containing four rectangular-section iron 'arms', each containing an L-shaped bracket at their end, and originally securing a number of suspended harrows / washing gates which are no longer *in situ.* The harrows would have originally been hung at the end of each rectangular-section iron, by chains attached to hooks. These harrows typically totalled a dozen or so teeth, made of iron rods which stopped short of the full tank depth, so as to avoid the settled stones at the bottom. The frame is additionally secured with restraining wires. The frame is rotated by an 'Arvis S4' cog mechanism, measuring a diameter of 1.53m, above which it is secured to a large I-section steel girder, mounted on two side stanchions. The overall frame is also supported by simple L-shaped steel braces to either end. The frame extends across the span of the structure in a north-east – south-west direction. The mechanism was powered by electricity – a manual 'Crabtree' switch box is mounted within a steel frame on the north-east stanchion.

Water Tank

5.3.9 The mill is accompanied by an open-top square brick water tank on its east side (Plate 12). It is constructed in the same brickwork as the mill, but laid in stretcher bond. The southern end of the tank interior has been separated from the remainder with an additional brick wall, the top of which has been capped with cement render. The ground level within each section is stepped in two parts; the shallower section lies at a depth of 0.80m and the lower level at 1.16m. The west wall of the north section contains the remains of a brick plinth, and the depth of the lower level is obscured by a wire mesh.

Water Pump

5.3.10 Located a short distance to the south of the mill (2.3m), is a small square brick structure with concrete slab lid. The brick walls are capped with a cement render at their top. The structure encases an electrically driven water pump, the cables of which run beneath the north wall towards the switchboard fixed to the mill. As was the case at this site, it was not always possible to arrange the settling tanks or wash-backs at a lower level than the wash mill. In such cases, a pump was used to transfer the slurry out of the mill (NPCS 2007). It was also common practice for the water run-off from the settling tanks to be reused in the clay wash mill, the pump would have assisted in achieving this (NPCS 2007).

Wash Backs

5.3.11 Aerial photography of the site dating to 1947 (Figure 9), shows that following the removal of the railway from this part of the site, this corner was set aside for wash backs. This is where the slurry from the mill was pressed and dried ready for brickmaking (SECL 2014). Physical evidence of these no longer remains, partially due to surrounding ground levelling works and due to the nature of their construction.

5.3.12 Wash-backs are usually constructed like shallow reservoirs by building earthwork walls so as to form a series of large ponds or tanks circa 15.24m square in area and 1.2m deep. Each wash-back should be provided with a vertical wooden or brick flue or overflow, the height of which can be altered to suit the level of the clear water in the back. This flue leads to a drain, and serves to carry off the water when the clay has settled. The flue consists of a wooden trough, sloping steeply in the wash-back, the 'top' of the trough being covered by a row of bricks which converts it into a 'square pipe'. By removing the bricks one at a time the water may be run off the clay at convenient intervals. A sufficient quantity of slurry having been run into the wash back, a second tank must be brought into use and the first left undisturbed until most of the water has risen to the surface; it must then be runoff carefully by means of sluices at the side of the tank, until only a thick mass of paste is left. This must then be left till sufficiently stiff, after which it is dug out for its further treatment. During the last period of stiffening it is common to cover the mixture with a layer of soil, which remained there throughout the winter (NPCS 2007).

Condition

5.3.13 The clay wash mill is in a generally good condition. Comparison of the recorded condition of the mill in 2014 (Gould 2014), confirms that the mill's overall condition has stayed relatively consistent. The water tank is also considered to be in a good condition, whereas the water pump brick casing is in a generally poor condition.

Wash Mill

5.3.14 The majority of the wash mill, particularly the eastern side, was heavily overgrown with vegetation (Plate 13), including self-seeded trees, which required removal before recording was possible.

5.3.15 The brick walls remain upright with no significant evidence of major structural cracking extending through either the brickwork or mortar joints. The outer face of the inner tank has suffered from substantial wear on its northern side (Plate 14), so that the upper level (measuring *c.*0.56m) protrudes *c.*100mm outwards from the lower level. This appears to have been caused by friction caused by passing clay when operational. Despite this worn area, the surfaces of the bricks remain in a fair condition free from spalling. A number of individual capping bricks have suffered from cracking and chipping. The mortar joints remain in a reasonable condition. The mechanism serving the wash mill remains in fair condition, although there is extensive evidence of surface corrosion. The restraining wires connected to the frame are either loose or have become unfixed.

Water Tank

5.3.16 As with the wash mill, the water tank was substantially overgrown with vegetation; prior to the commencement of recording, this was cleared.

5.3.17 The water tank walls remain upright with evidence of cracking extending through the brickwork or mortar joints. The surfaces of the bricks remain in a good condition. Areas of cement render capping the walls have suffered from cracking and are now loose. The majority of mortar joints remain in a fair condition, although areas within the south and east walls have been encroached by climbing vegetation.

Water Pump

5.3.18 The poor condition of the water pump appears to have been caused by the encroachment of vegetation, which predominantly fills the entire interior. All brick elevations have been subject to extensive cracking around the base (Plate 15), which extends unbroken through the mortar joints. This has caused the top level of the structure to sever from its base, which remains unsecured. The dislodged brickwork causes the entire structure to tilt in a northwards direction. The cracking occurs approximately between *c.*0.53m and 0.63m from the top of the structure, and in places measures *c.*110mm. Additional mortar joint cracking extends through six courses of brickwork in the top section of the south elevation, in an eastwards direction. The surfaces of the bricks remain in a relatively good condition, free from spalling. The concrete slab lid is lent against the structure to the east side, its condition bring relatively fair.

Conclusion

5.3.19 Repairs should be undertaken to stabilise, make good and preserve the wash mill, water tank and water pump housing. Where repairs are required these should be carried out on a like-for-like basis to conserve the character and appearance of the structures.

5.3.20 Remedial work should include the raking out and repointing of any open or weathered mortar joints, including the re-setting of the water pump joints. Where cracks have extended through the capping brickwork, these should be made good with new brickwork. The structural stability of the northern side of the wash mill's inner tank should be assessed, and made good with new brickwork if necessary. All metal components to the wash mill mechanism, will need to be treated with an appropriate rust inhibiter and painted. The metal panel door to the electrical switch cupboard should be reinstated, and the restraining wires refixed (where loose). Any remaining existing vegetation, particularly within the water pump interior, should be cleared to ground level and a maintenance programme for keeping vegetation growth down, should be implemented. The concrete lid for the water pump housing should be reinstated with a small ventilation gap, to deter further self-seeding of vegetation. Due to site clearance works, predominantly ground levelling, the surrounding ground level is considerably lower than that of the structures, by around 0.40m. This has the potential to cause an adverse reaction on their structural stability, due to changes in resistive pressure and foundation exposure which could be subject to an increased level of weathering. The immediate surrounding ground levels should be reinstated to reduce any potential harm. Any work should aim to retain and reuse as much of the original fabric, where possible.

5.4 Main Building

5.4.1 NGR: 599870 161298

5.4.2 Level of record: 2-3

5.4.3 Function: Drying shed

5.4.4 Date of construction:

5.4.5 Description: (Figure 15)

General layout

5.4.6 The original components of the main building were constructed in the period between 1945 and 1950. The building replaced a series of earlier drying hacks (a frame for drying bricks), previously situated in the centre of the range. The original structure was subsequently extended to the west and south, during the 1950s (SECL 2014). Large quantities of narrow-gauge railway track were used in forming these extensions, presumably utilised from the disbanded track which formerly ran throughout the site.

Exterior

5.4.7 The building comprises three adjoining ranges (Plate 16); the earliest components are situated to the east (Ranges 1 and 2) (Plate 17), with the western range (Range 3) (Plate 18) forming an early extension. The making shed adjoins the structure at its south-west end (see Section 5.5).

5.4.8 Range 1 comprises a single storey, rectangular brick building with asbestos-clad adjunctions, in the form of lean-to extensions to the east and south sides. The original brickwork is predominantly of yellow stock brick, laid in English bond, with rows of vitrified headers. The range extends in an east – west direction, with a flat roof. The east and south extensions are ephemeral structures, constructed of simple steel frames, clad with corrugated steel and asbestos roof sheets. Each serves as an open-sided, partially covered, circulation space; that to the south serving as a passage along the south elevation, the east comprising a storage and observation area into the east end of Range 1.

5.4.9 Range 2, adjoining the structure on its north side, comprises a rectangular structure with lean-to extensions adjoining its eastern and western ends. The range is constructed in a rather haphazard arrangement of yellow stock brick and red brick, laid in a combination of both English and stretcher bond. A number of brick buttresses have been constructed along the north elevation in an attempt to add structural support, these are constructed in the same manner and material as elsewhere. A series of six windows are situated along the upper level of the north elevation; five of which contain timber-framed, single-pane windows with concrete lintels and timber sills; one is blocked with brick infill. The upper and lower levels of the wall are separated by an offset. The east – west aligned building has a shallow pitched asbestos-clad roof, gabled to the east and west ends. The roof is interrupted at its centre by an English-bonded tall, broad stock brick built chimney, decorated with a chamfered weathering course above the roofline, and stringcourses and corbelling to the cap. The east end of the range has been extended with an English-bonded, red brick lean-to with asbestos-clad roof. The north and south elevations of

the latter contain a single pedestrian access (north) and double-width sliding steel door (south). This lean-to has been truncated on its east side in order to accommodate a further extension. This additional structure is constructed in un-mortared herringbone, slim red brick, at its base, with asbestos sheeting above. This extends to a sloping roof of the same material. The opposing west end of Range 2 has been similarly extended with an English-bonded, yellow stock brick lean-to, with sloped asbestos sheet roof. The structure creates an internal circulation area between Range 2 and 3. The north elevation is predominantly filled by a two-leaf timber boarded door.

5.4.10 Range 3 comprises a rectangular range, aligned north – south, with a lean-to extension adjoining its south end. The frame of the building is predominantly made up of narrow-gauge railway track, forming six bays, clearly visible within the west elevation. Each bay is filled at its lower level by red brick laid in English bond, above which is clad with asbestos sheeting. The northern end of the range has been clad at its lower level, beneath which formerly comprised a timber-boarded two-leaf doorway (now blocked). The range has a steep dual-pitched asbestos sheet roof, gabled to the north and south ends, with a central gulley. The south extension (Plate 19) has a sloping asbestos roof, with walls constructed in a darker, English-bonded, brown-red brickwork. A small area of acrylic paintwork on the west elevation, implies an additional small lean-to extended west from this range, but has since been demolished. The south elevation is principally filled with four Crittall-style metal-frame windows. Each contain two casements, set with four individual panes, including a single top-hung opening light. Three of the windows appear inserted, the eastern window appears original, set within closers. The inserted window trio are accompanied by a manual steel pulley system which appears to have operated a rudimentary ventilation system, connected to timber shutters. An asbestos-clad section to the east end of the elevation, indicates the location of a former pedestrian doorway which has since been blocked.

Interior

5.4.11 The principal use of Range 1 was for brick drying. It contains four long, east – west aligned, drying chambers (Plate 20). Each chamber forms a tunnel-like, brick built construction, with large double-width doorways to the east and west ends. Doorways to the west end have been removed, while those to the east end remain and comprise simple top-hung plywood boards (Plate 21 and 22). Each is served by two sliding observation hatches. The doors open outwards and are operated by a simple cord pulley. The chamber interiors have a continuous concrete screed floor and shuttered concrete ceilings. The internal walls are laid in stretcher bond and include openings at regular intervals to provide internal passages between each chamber. Above each chamber is a large void which allowed the passage of hot air between each chamber, served by a coal-fired Volex air heater, fired by two Prior hopper type underfeed stockers (SECL 2014), located within Range 2.

5.4.12 Range 2 is split centrally by the brick chimney. The west side (Plate 23) is entered internally via a series of timber-boarded single-leaf doorways which form the west elevation of the western extension. All floors throughout are cement, and the walls are constructed in English-bonded yellow stock brick, with red brick headers. A large rebuilt area of un-mortared English-bonded brickwork within the north elevation, replaces a section demolished by earth-moving machinery. The roof comprises a series of steel trusses, clad with asbestos sheeting, sections of which are lit using uPVC panes. This room contains the mid-20th century coal-fired Volex air heater with two Prior hopper underfeed stockers (Plates 24 and 25), which powered the

drying system for chambers within Range 1. Two large fans accompanying the heater, each branded with 'Sturtevant Engineering Co. London, Fan No. D22366' (Plates 26 and 27), are fitted to a substantial concrete plinth measuring a height of 1.3m, to the east side of the room. A series of openings punctuate the south wall and allow the passage of large steel air shafts into the southern chambers. The west elevation is made up of the central chimney stack. The base of the chimney supports a collection of mid-20th century 'Royal' electrical sockets, switchboards and breakers which operate the machinery within. The wall to the south of the chimney has a large blocked circular opening which formerly carried surplus heat from the kilns within the eastern half of the range, via ducts, into the drying chambers. A single timber-boarded pedestrian door is set to the north of the chimney, providing access into the eastern half of the range.

5.4.13 The eastern half of the range is predominantly empty, with floors, walls and roof arrangement, as elsewhere (Plate 28). The area served as a workshop, previously equipped with a pug-mill, used to mix and prepare the clay ready for brick moulding. The west elevation is formed by the chimney (Plates 29 and 30), which contains a timber-boarded stocking door at its base. The chimney served to dispose of the smoke, while the hot air was channelled through ducts to heat the drying chambers. Immediately to the north of the chimney is a work bench with clipper brick saw. To the south is a single modest-sized modern kiln, which was more recently heated by propane from a tank to the north of the building (now removed) (SECL 2014). The later extensions to the east side of the range provide shelved storage space for a large range of timber brick moulds (still *in situ*) (Plates 31 and 32).

5.4.14 Range 3 (Plate 33) forms a relatively simple framework comprising a continuous concrete screed floor and internal brickworks walls (as elsewhere). Steel roof trusses extend above each of the six bays, characterised by vertically-laid narrow-gauge railway tracks, which run throughout the centre of the workshop. Sections of the asbestos-clad roof have been replaced with uPVC panelling for natural lighting. The central ridge line between the roof pitches is formed by half-round sections of asbestos sheeting and connected via metal valley gutters. The south elevation separating the range from the southern lean-to, has three blocked openings, two doorways and what appears to be a blocked fireplace for a former chimney, which has since been removed. The interior originally served as a workshop for the manufacturing of the bricks, including preparing the raw material (post washing and settling) for the moulding process. The space is now predominantly empty, retaining a large collection of treble timber brick-moulds (Plates 34 and 35), supplying evidence of the building's former use. The lean-to is currently in use as a storage facility of produced bricks (Plate 36).

Level 1 Photographic Survey

5.5 Making Shed

5.5.1 NGR: 599859 161281

5.5.2 Level of record: 1

5.5.3 Function: Warehouse space used to mould the clay into bricks

5.5.4 Date of construction: *c.*1970s - 1980s

5.5.5 Description:

5.5.6 The making shed (Plates 37-was constructed to the immediate south side of the main building during the 1970s or 1980s and is first identifiable with certainty on the Ordnance Survey map of 1984. Aerial photography dating to 1990, shows the present construction to be the original form. The structure is rectangular in plan, and occupies a north-west – south-east alignment (hereafter simplified to east-west). The west end of the structure adjoins the main building on its south side. The external elevations are constructed in a combination of yellow and red brickwork, principally laid in a combination of English and stretcher bond. The western end of the north elevation is constructed using slim orange-red brick, laid in an un-mortared herringbone bond. The upper section of each wall is clad with asbestos sheet, which extends to the pitched roof. The roof is gabled to the east and west ends, and is constructed using simple steel trusses, dividing the interior into five bays. The structure is entered via a pair of double-width, roller shutter doorways, situated at its western end. The interior has been emptied, except for brick storage. A large opening within the east elevation previously served brick-making machinery in this corner with brickearth (SECL 2014).

5.6 Kiln Shed

5.6.1 NGR: 599912 161297

5.6.2 Level of record: 1

5.6.3 Function: Kiln for firing the moulded bricks, forming the last stage of the manufacturing process

5.6.4 Date of construction: *c.*2004

5.6.5 Description:

5.6.6 The kiln shed dates to around 2004. Its construction replaced two earlier kiln buildings previously situated on the eastern half of the site (near the existing chimneystack). The building (Plates 41-43) is located to the east of the main building and comprises a rectangular structure, aligned north-east – south-west. The structure is a double-height, single storey building, constructed in corrugated steel sheeting. The roof, constructed in the same material, is pitched, and is pierced at its north-east end by a pair of contemporaneous tubular steel chimneys. Roller steel shutters serve two large vehicle openings at the south-west end of the building, while a single pedestrian access is located at the north-east end within the south-east elevation. Internally, the building is predominantly empty, except for two modern

kilns at the far north-east end. The floor comprises a concrete screed. The interior is lit via uPVC panels which have been inserted at regular intervals into the roof.

5.7 Shed

5.7.1 NGR: 599886 161357

5.7.2 Level of record: 1

5.7.3 Function: Storage (brickearth)

5.7.4 Date of construction: *c.*1980s - 1990s

5.7.5 Description:

5.7.6 Located to the north of the site is a medium sized rectangular shed, aligned north-east – south-west (Plates 44 and 45). The shed consists of a single storey, with pitched roof, gabled to the north-east and south-west end. The shed appears to have built during the 1980s and 1990s, between the completion of the Ordnance Survey map of 1984 and aerial photography dating to 1990. The frame of the building is of steel, filled at its lower level with Flemish-bonded orange brickwork, above which it is clad with corrugated asbestos sheets. The shed has large openings on its south-west and north-east sides and contains a mound of brickearth. The structure is lit via uPVC panels which have been inserted into the asbestos sheet clad roof. The structure is ideally located between the northern yellow stock brick and southern red brick manufacturing halves of the site. It is likely to have been constructed to store brickearth being transferred from the northern site half, and a new extraction area of red brickearth east of Bysing Wood, which opened in 1987 after brickearth supplies within the southern half of the site became depleted (SECL 2014; Twist 1984).

5.8 Office

5.8.1 NGR: 599958 161327

5.8.2 Level of record: 1

5.8.3 Function: administration/amenities office

5.8.4 Date of construction: last quarter of the 20th century

5.8.5 Description:

5.8.6 The building (Plates 46-48) was constructed at some point between the completion of the 1964 and 1987 Ordnance Survey maps. The structure is situated along the eastern site boundary within the southern half of the site and occupies a roughly north – south alignment. The building is rectangular and extends over a single storey. It has a pitched tiled roof which is gabled to the north and south ends. It is constructed in stretcher-bonded red brick. The principal elevation faces west into the main brickworks yard and serves as the site office. The interior is accessed through a central doorway and porch on its north side. Internally the building contains a combination of administration office space and staff amenities, including kitchenette and toilet facilities. Opposite the principal elevation and to the immediate north of the office are a series of upstanding brickwork mock-ups, used for client demonstration purposes

5.9 Bungalow

5.9.1 NGR: 599959 161364

5.9.2 Level of record: 1

5.9.3 Function: residential dwelling

5.9.4 Date of construction: mid-/late 20th century

5.9.5 Description:

5.9.6 To the west of the site entrance stands a residential bungalow of modern construction (Plates 49 and 50). The structure forms a single-storey, T-shaped building, constructed in yellow brick laid in stretcher bond, with red brick dressings. The roof is pitched and is covered with tiles. All windows and doors are of modern uPVC type. The main entrance faces south-east towards the brickworks driveway. A rectangular structure is shown in roughly the same location of the bungalow from the 1940s until the 1984 Ordnance Survey mapping. The bungalow in its present T-shaped form is first shown clearly on aerial photography of the site dating to 1990. It external appearance is modern; the interior was not surveyed due to access limitations.

6.0 DISCUSSION

6.1 The Cremer & Whiting Brickworks is an example of an early 20th century brickfield which emerged as a direct consequence of London's expansion throughout the mid-late 19th century. Historically the site formed part of the booming Faversham brick industry originating from this period, supplying the capital with characteristic London stock brick, predominantly for railway construction.

6.2 The brickworks supplied both London stock brick and red brick between the 1920s and 1960s, when production of stock brick ceased for a short time until the 1980s. The brickworks formed Faversham's last functioning brickworks, until production ceased in the early 21st century, due to diminishing supplies of brickearth. Before its closure, the brickworks formed one of only a handful of brickworks still manufacturing traditional hand-made bricks on a regional scale throughout the late 20th and early 21st centuries, supplying many prolific conservation projects throughout England.

6.3 Despite much of the site's earlier infrastructure being superseded by mid-/late 20th century development, the site remains a good example of a long standing Faversham brickworks, providing context to the industrial origins of the surrounding landscape. The retained buildings predominantly reflect mid-20th century technological change in brickmaking which saw the introduction of modern gas-fired kilns and clay wash mills, and perhaps most importantly the replacement of the natural drying hacks with artificial drying chambers. Despite their late date, they serve to reflect the practice of brickmaking on the site and include some of Kent's diminishing stock of brickworks buildings. The buildings also provide context for the earthworks which resulted from the creation of brickearth pits, washbacks and clamp kilns, which can still be found throughout the surrounding landscape.

7.0 DEPOSITION OF THE ARCHIVE

7.1 The project archive will be deposited with a suitable local museum under the site code CWO17. The archive will comprise all survey material collected and produced in undertaking the project.

8.0 ACKNOWLEDGEMENTS

8.1 Archaeology South-East would like to thank Orion Heritage for commissioning the work, and to the staff of the Cremer & Whiting Brickworks for their assistance on site.

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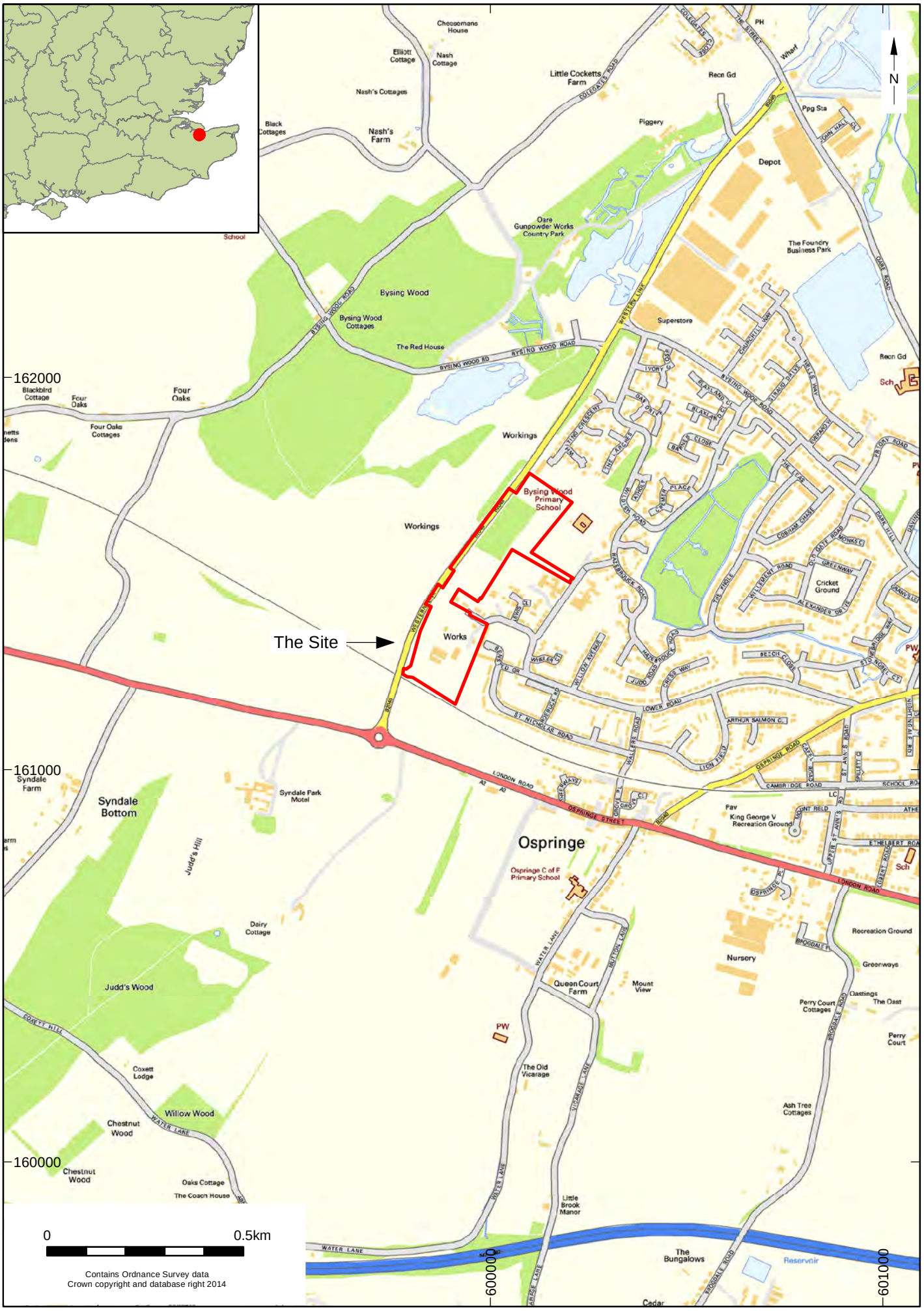

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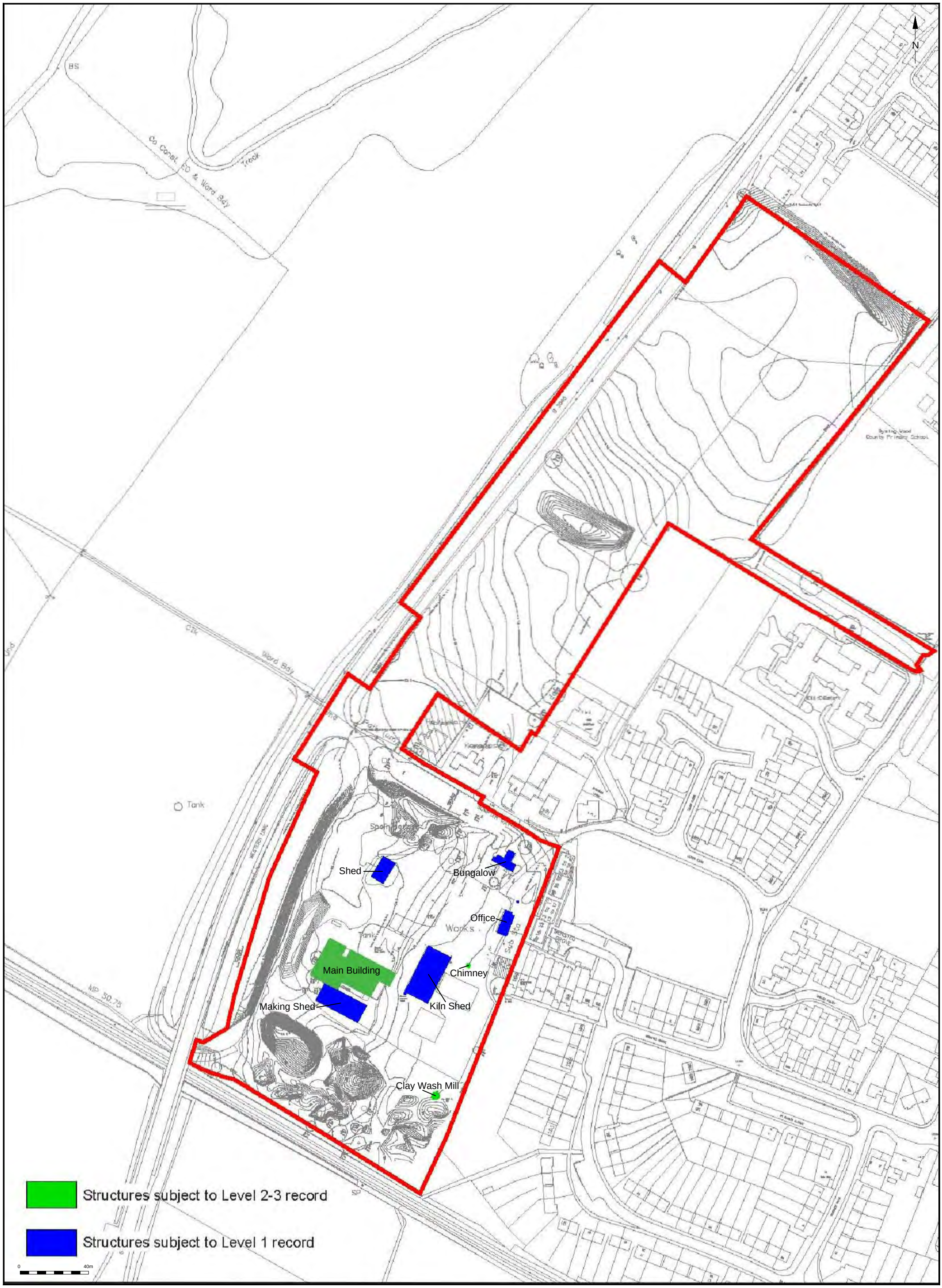
Report Ref: 2017229	Drawn by: HG		



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Project Ref: 170341	May 2017	Existing site plan with recording levels identified (1:2000)	
Report Ref: 2017229	Drawn by: HG		

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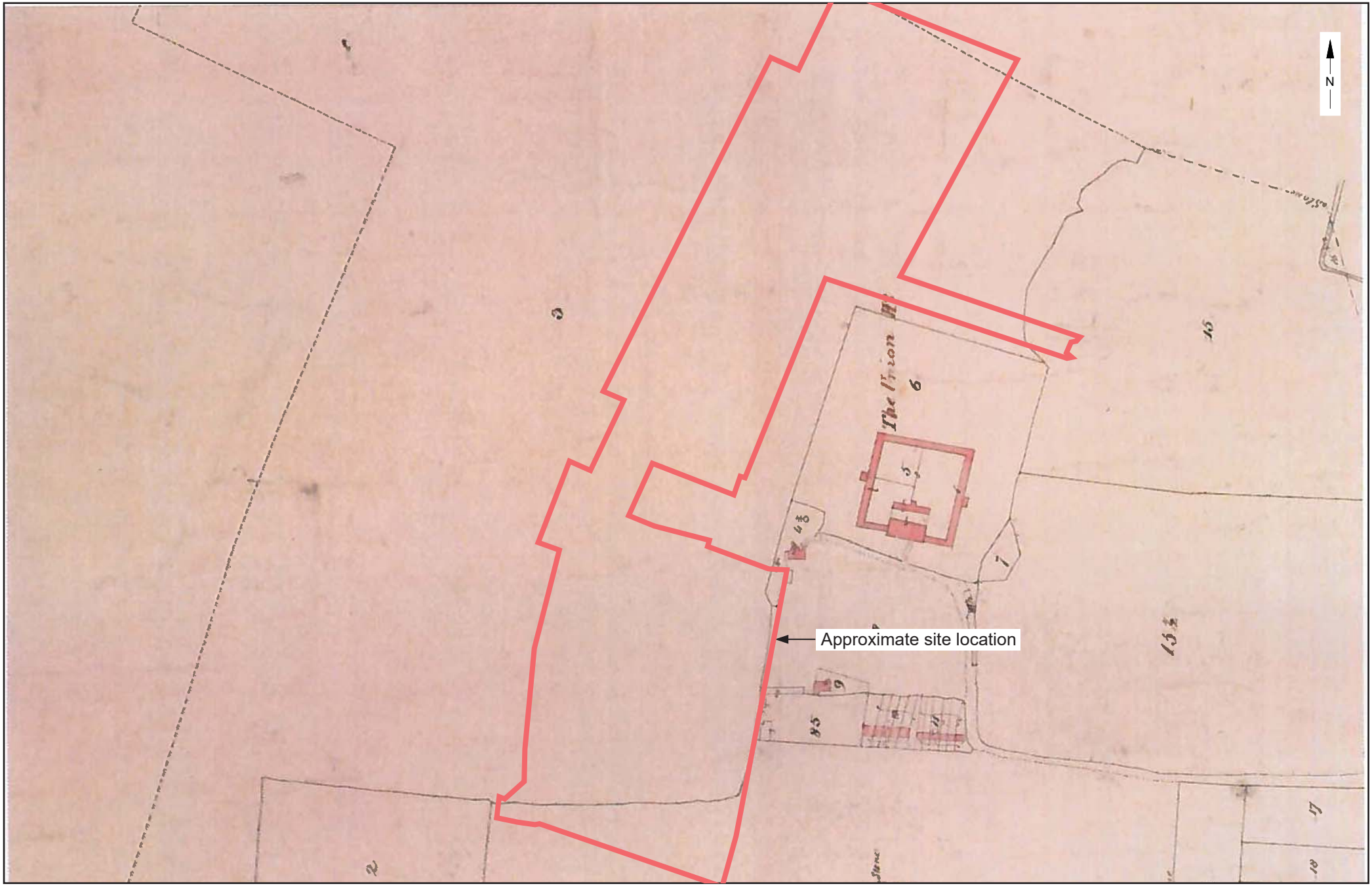
Project Ref: 170341	May 2017	R.H. Cowell's map of Ospringe, 1838	
Report Ref: 2017229	Drawn by: HG		



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Project Ref: 170341	May 2017	Faversham tithe map, 1839	
Report Ref: 2017229	Drawn by: HG		

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Project Ref: 170341	May 2017	1877 Ordnance Survey map	
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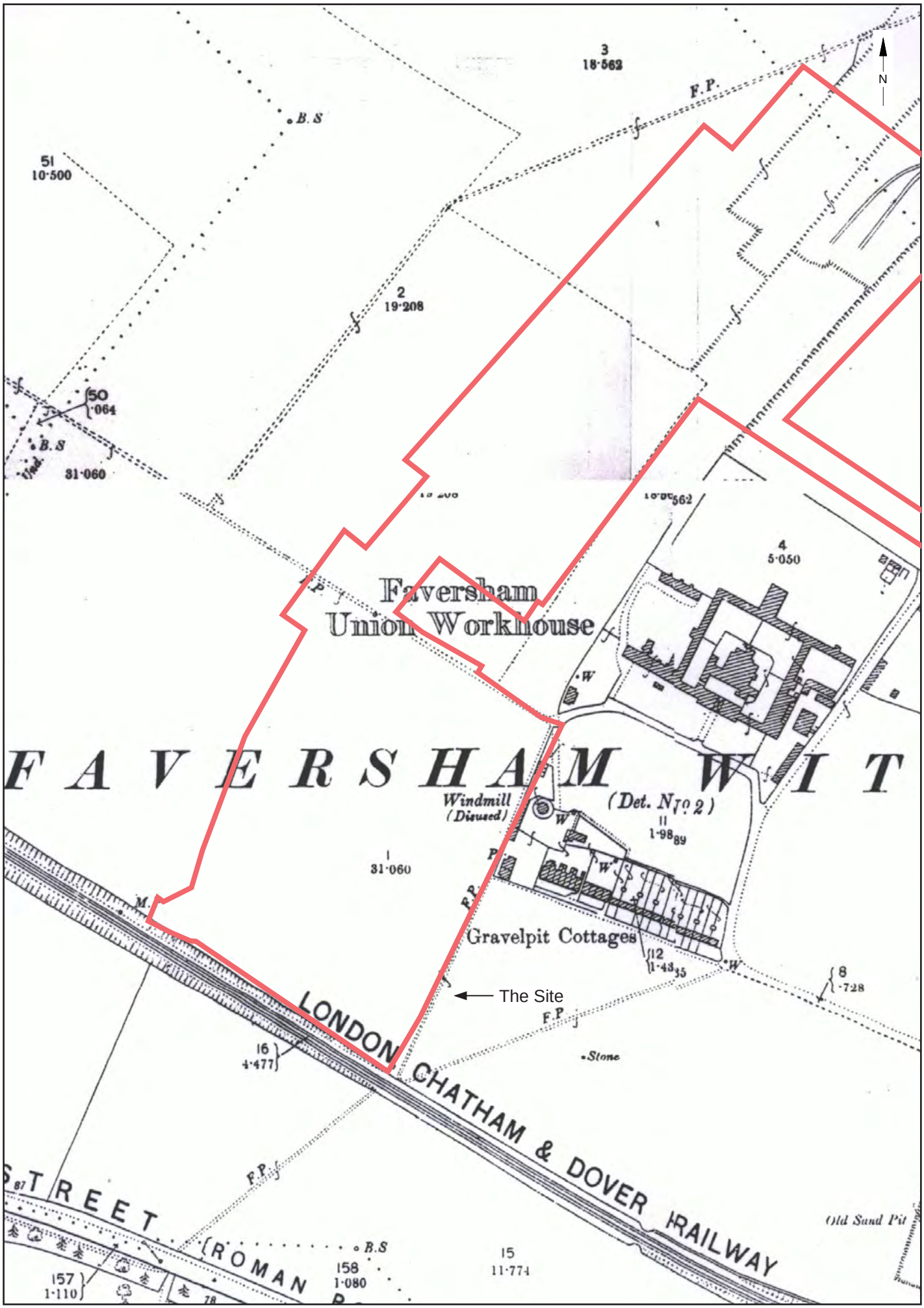

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Project Ref: 170341	May 2017	1897 Ordnance Survey map	
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Project Ref: 170341	May 2017	1907 Ordnance Survey map	
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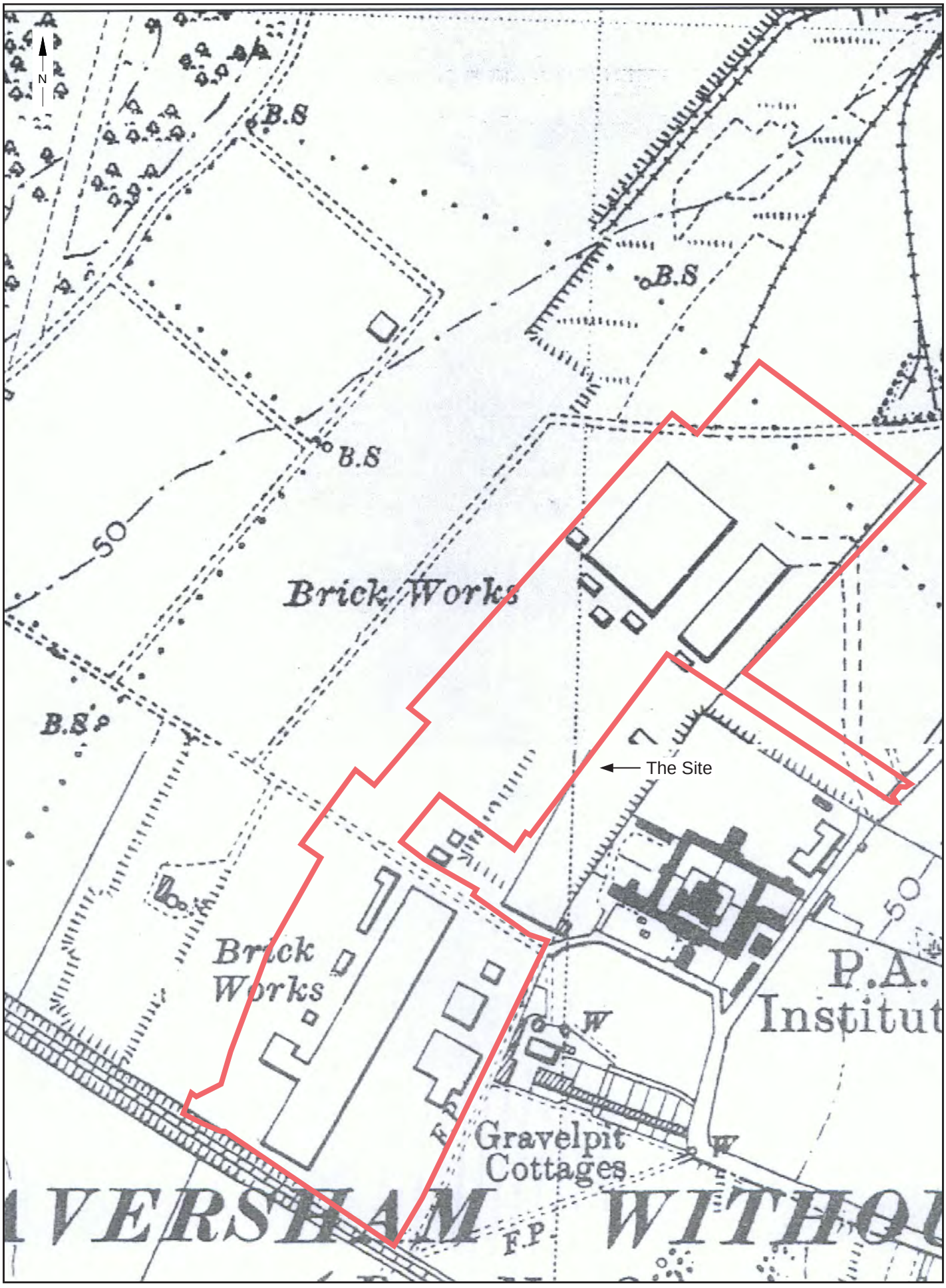

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Project Ref: 170341	May 2017	1938 Ordnance Survey map	
Report Ref: 2017229	Drawn by: HG		

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Project Ref: 170341	May 2017	1947 Aerial photograph	
Report Ref: 2017229	Drawn by: HG		

Brick Mould, Cuckle and bow

Cremer & Whiting brick mould. Note reversed initials

Cremer & Whiting hinged brick mould

Cremer & Whiting shaped brick moulds

Cremer & Whiting modern brick mould with plywoof frame and mahogany inset

© **Archaeology South-East**		Cremer & Whiting Brickworks, Ospringe	Fig. 10
Project Ref: 170341	May 2017	Photos of brickmaking equipment at Cremer and Whiting Brickworks (source: Filmer 1980)	
Report Ref: 2017229	Drawn by: HG		

Brick moulder with hack barrow

Treble moulds and sand tray

Clay being thrown into shaped mould to from a coping brick

Excess clay struck off with a wire bow

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Project Ref: 170341	May 2017	Photos of brickmaking process at Cremer and Whiting Brickworks (source: Filmer 1980)	
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Project Ref: 170341	May 2017	Existing site plan with photo locations (1:1000)	
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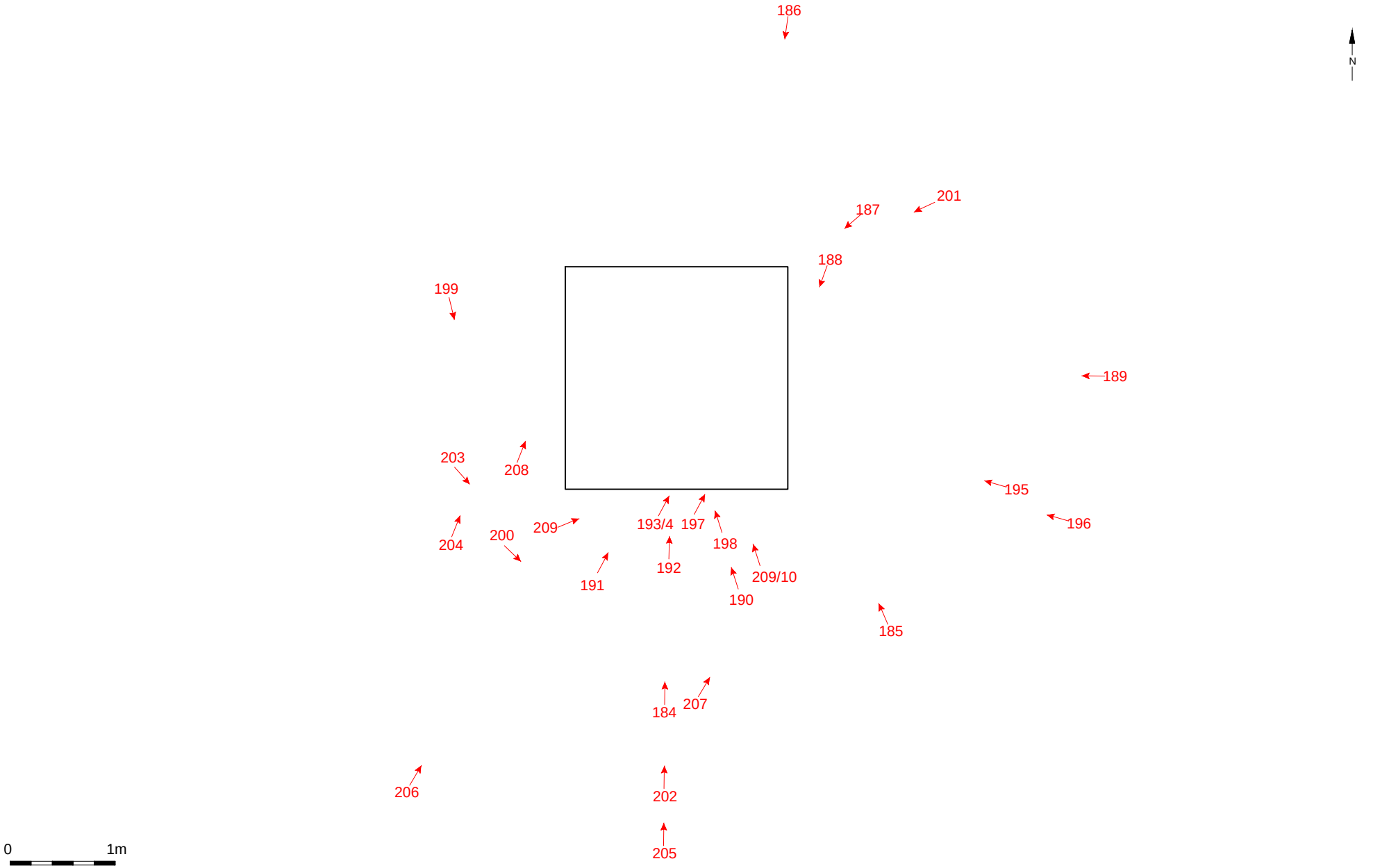

© Archaeology South-East		Cremer & Whiting Brickworks, Ospringe	Fig. 13
Project Ref: 170341	May 2017	Chimney - existing floor plan (1:50)	
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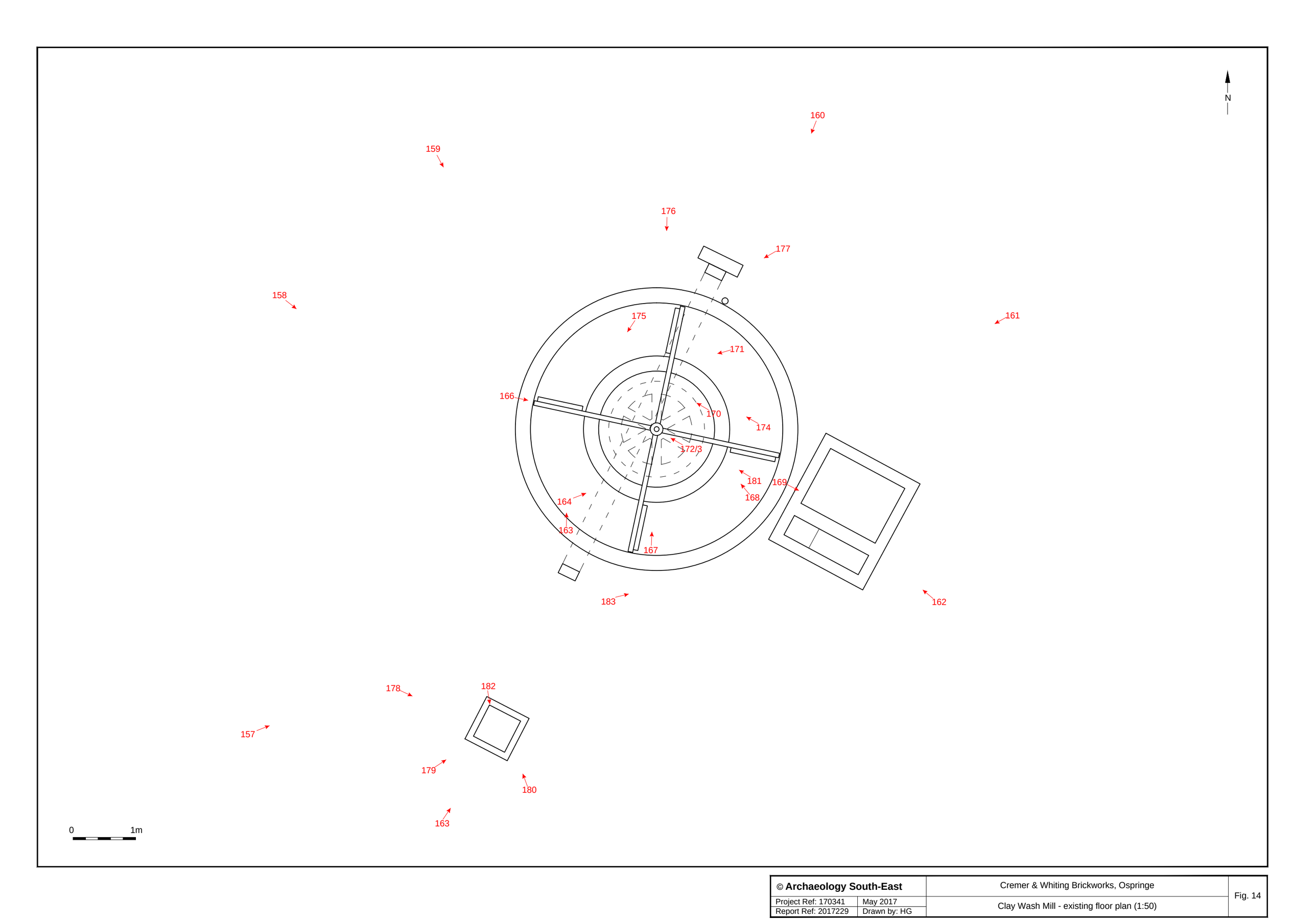

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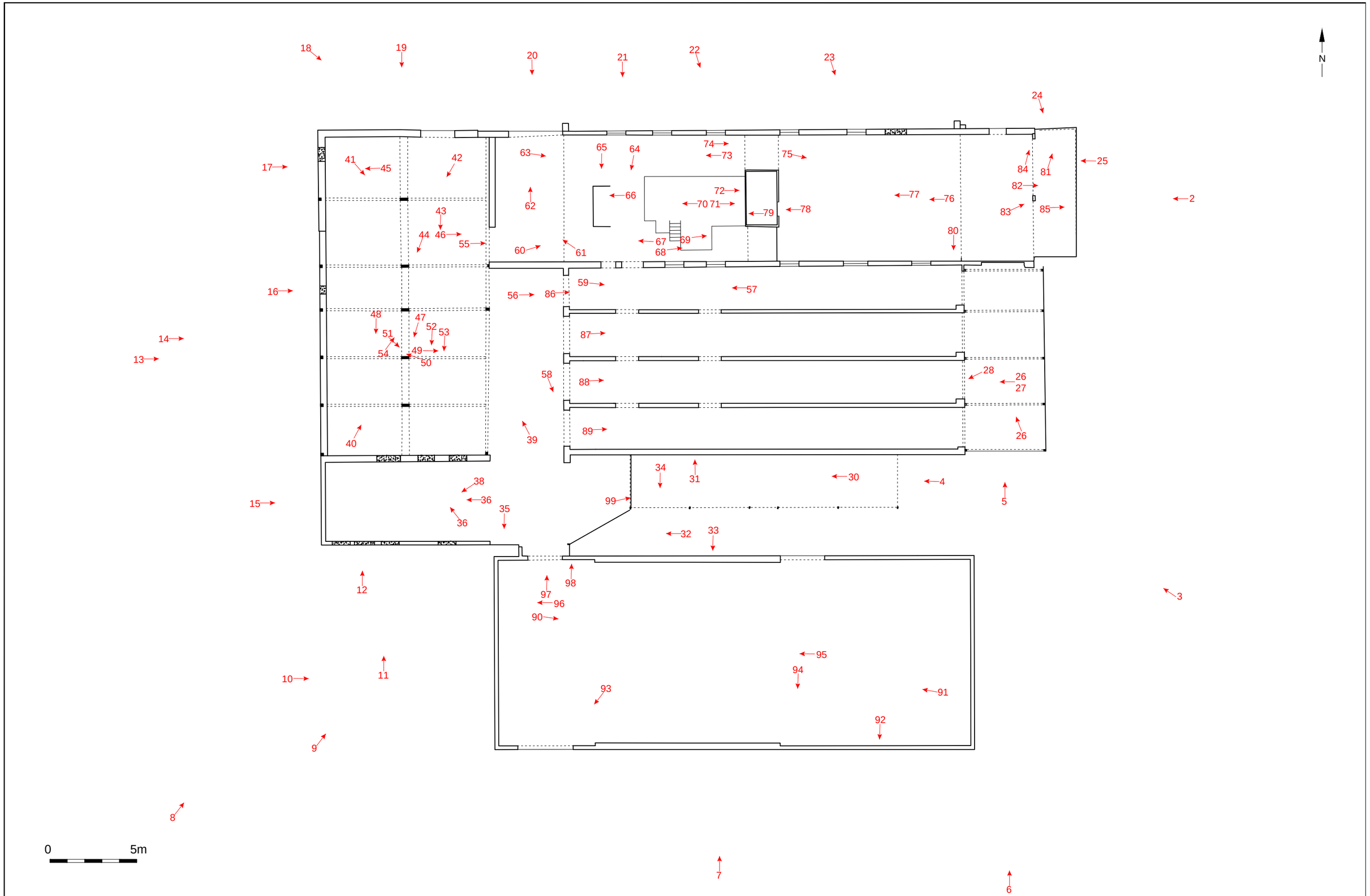
Project Ref: 170341	May 2017	Clay Wash Mill - existing floor plan (1:50)	
Report Ref: 2017229	Drawn by: HG		



© **Archaeology South-East**		Cremer & Whiting Brickworks, Ospringe	Fig. 15
Project Ref: 170341	May 2017	Main Building - existing floor plan (1:200)	
Report Ref: 2017229	Drawn by: HG		

Plate 1: View of the northern half of the site – the former site of the London stock brick factory, facing north-east (118)

Plate 2: View of the southern half of the site – the former site of the red brick factory, facing south-east (150)

Plate 3: View of the chimney and remains of the former kiln buildings to its south, facing north (205)

Plate 4: Detail of the pulley mechanism found on all but the north elevation of the chimney, facing north-east (191)

Plate 5: View of the west elevation of the chimney, facing north-east (185)

Plate 6: View of the south elevation of the chimney, facing north (184)

Plate 7: View of the east elevation of the chimney, facing north-west (196)

Plate 8: View of the north elevation of the chimney, facing south-west (186)

Plate 9: View of the clay wash mill and water tank after vegetation clearance works, facing south-west (161)

Plate 10: View of the water tank, facing west (162)

Plate 11: Detail of the mill mechanism (166)

Plate 12: Internal view of the water tank, facing east (169)

Plate 13: View of the clay wash mill prior to vegetation clearance, facing north-east (143)

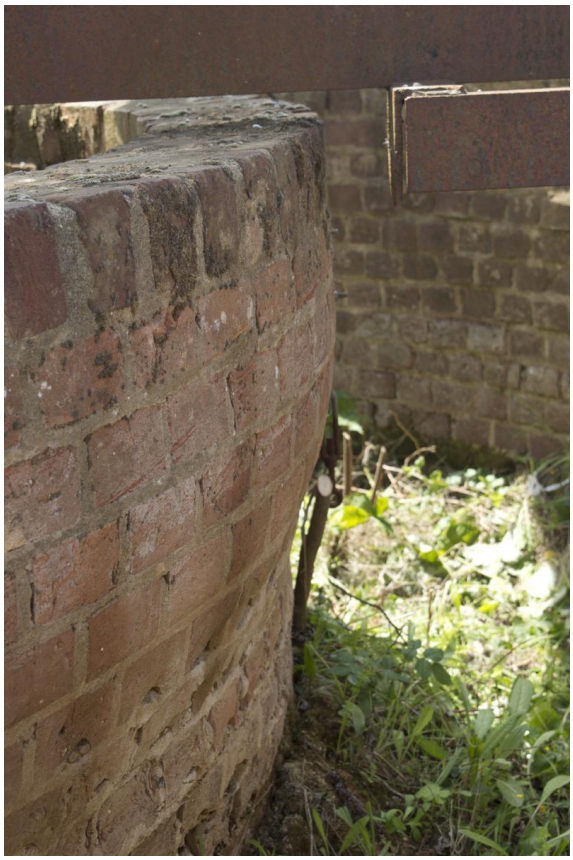


Plate 14: Detail of the worn bricks on the north-east edge of the inner tank within the mill, facing south-east (175)

Plate 15: View of the water pump casing to the south of the mill, facing north-west (180)

Plate 16: View of the main building, facing south-east (18)

Plate 17: View of Range 1 (background) and Range 2 (foreground) of the main building, facing south-west (1)

Plate 18: View of Range 3 of the main building, facing east (13)

Plate 19: View of the south elevation of the lean-to addition to Range 3 of the main building, facing north (11)

Plate 20: Internal view of No. 1 drying chamber within Range 1 of the main building, facing east (86)

Plate 21: View of the internal entrances to the artificial drying chambers within Range 1 of the main range, facing east (49)

Plate 22: External door to No. 4 drying chamber within Range 1 of the main building, facing west (27)

Plate 23: View of the western half of Range 2 within the main building, facing north-east (60)

Plate 24: View of the Volex air heater used to heat the drying chambers, Range 2, western half, main building, facing west (67)

Plate 25: Detail of the Volex air heater within the western half of Range 2 within the main building, facing west (65)

Plate 26: View of the Sturtevant fans within the western half of Range 2 within the main building, facing west (70)

Plate 27: Detail of the Sturtevant fans within the western half of Range 2 within the main building, facing west (69)

Plate 28: View of the eastern half of Range 2 within the main building, facing east (75)

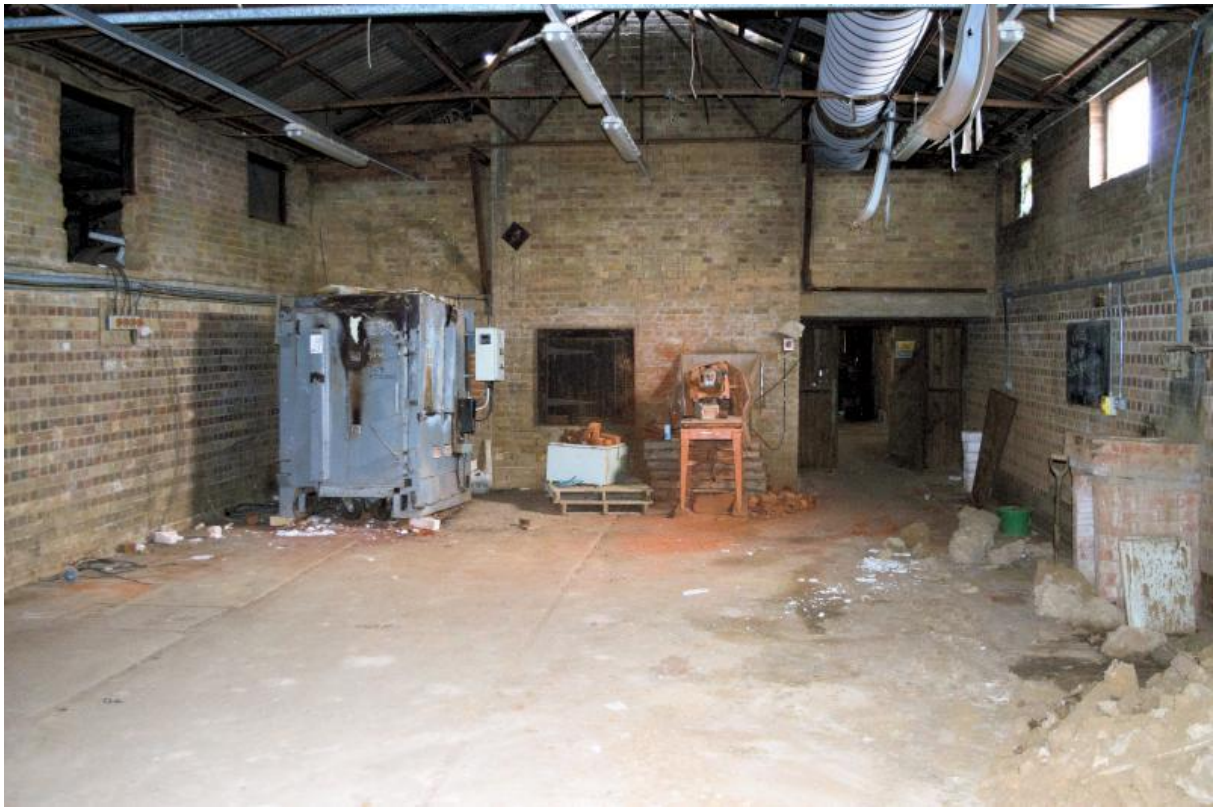


Plate 29: View of the eastern half of Range 2 within the main building, facing west (76)

Plate 30: Detail of the chimney door and kiln heat overflow (blocked) within the eastern half of Range 2 within the main building, facing east (78)

Plate 31: View of the brick mould storage within the eastern half of Range 2 within the main building, facing north-east (83)

Plate 32: Detail of the brick moulds within the eastern half of Range 2 within the main building, facing north-east (81)

Plate 33: View Range 3 within the main building, facing south-west (42)

Plate 34: Detail of the treble brick moulds within Range 3 of the main building, facing north (47)

Plate 35: Detail of the treble brick moulds within Range 3 of the main building, facing south (48)

Plate 36: View of the southern lean-to addition to Range 3 of the main building, facing west (36)

Plate 37: South elevation of the making shed, facing north (7)

Plate 38: West elevation of the making shed, facing east (10)

Plate 39: Detail of the un-mortared herringbone brickwork within the north elevation of the making shed, facing south (33)

Plate 40: Internal view of the making shed, facing north-west toward its junction with the main building (91)

Plate 41: South-east corner of the kiln shed, facing north-west (109)

Plate 42: Interior view of the kiln shed, facing north (106)

Plate 43: Detailed view of the modern kiln within the northern end of the kiln shed, facing north-west (107)

Plate 44: South-west corner of the storage shed, facing north-east (101)

Plate 45: Detailed view of the storage shed interior, facing north-west (102)

Plate 46: Principal west elevation of the site office, facing south-east (127)

Plate 47: Detail of the brickwork mock-ups built outside the principal elevation of the site office, facing east (128)

Plate 48: Detail of the brickwork mock-up situated to the north by the principal site entrance, facing north-east (129)

Plate 49: Principal south-east elevation of the bungalow to the west of the main site entrance, facing south-west (115)

Plate 50: Rear elevation of the bungalow, with fenced garden enclosing various sheds and greenhouses (114)

Appendix 1 Brief History of the Brick Manufacturing Process at the Works (Figures 10 & 11)

Faversham brickearth was of high quality and when mixed with chalk the product came out the fashionable yellow colour, instead of the natural red. The chalk used at the Cremer & Whiting works was obtained from a large pit in Vicarage Lane and transported via pipes (Melrose 2009). It was also discovered that if coal-ash was mixed with brickearth and chalk, the brick would be self-firing with no need for kilns (Perceval 2009). The sailing barges which delivered the bricks to London returned laden with domestic waste, brought from the local authorities; discarded in Faversham, this cargo was sifted for ash and the residue used to strengthen sea defences. The bricks were all hand-made, rather than the machine-moulded products which superseded them in the 20th century. The local industry began to decline when the Fletton brick came into production. Fletton, a village near Peterborough, is the location where in 1881 it was discovered that lower Oxford clay, was oil-bearing. This meant the bricks were self-firing without the need to add brick-ash (Perceval 2009).

Before the introduction of the brick-making machine, which was common by the mid-19th century, all bricks were hand-moulded. The clay was dug in the autumn before the winter and was left in large heaps to weather by the frost and snow and impurities were washed out with the winter rain. During these months the clay was constantly turned over with the traditional clay spade. After it had been broken up by natural forces it was watered and tempered by treading and kneading by foot, ox or horse pug-mill. Every stone or shell was removed. After this it was brought to the brick-moulders bench (Filmer Vol. 1). Later this cleaning process was performed by a clay wash mill.

When making ‘shapes’ each brick is made individually. A supply of pugged clay is available at the brickmakers side and a ‘cuckle’ is used to scoops out a suitable amount of clay which is rolled in fine red burning sand and moulded roughly to the shape of the brick-mould (a process known in Kent as ‘flatting’). The clay is then forcibly hurled into the mould so as to completely fill it, the force of the throw ensuring that the clay expels all air-pockets and with a wire bow the superfluous clay is removed and the top surface is dusted with sand. The brick is then turned out onto a palette and sandwiched between another palette, the green brick is carefully placed on the hack barrow. In the past, when the hack barrow was loaded, the bricks were placed in ‘drying hacks’ – long low open-sided shelters – to slowly dry naturally. They were stacked in such a manner that air could circulate, but not so that the brick was subjected to rain or too much sunshine that could cause uneven drying. The hacks at Ospringe were superseded by heated drying rooms, to dry the bricks in controlled conditions before being fired (Filmer Vol. 1).

The method of moulding the standard facing brick is very similar but quicker. Treble moulds are used and the maker has a continuous supply of pugged clay readily chopped out to the correct amount to easily fill the mould. Like the ‘shape moulder’ the clay is thrown into each compartment of the treble mould and the filled mould is pushed down on a roller system to the striker who cuts off the excess clay (Filmer Vol. 1).

The moulds are constructed rather larger than the required size of the finished brick because the brick will shrink about 12% during firing. Some of the moulds used at Cremer & Whiting were of some antiquity and some of the most complex shaped moulds were cleverly hinged to release the green brick without causing any damage. Most of the old moulds were made in hardwood, and in the 1850s some were lined out with brass, a brass-lined mould only costing about 25s. The modern moulds are of a softwood case with the inset (the reversed profile of the required shape) in hardwood (Filmer Vol. 1).

Originally clamps in the style of charcoal burner's clamps were used for the final firing but for many years down-draft kilns have been in general use. The addition of sand during the moulding process enables the brick to be released easily, and, when fired the sand fuses with the clay giving a slightly rough texture (Filmer Vol. 1).

Bricks from this brickyard have been used among other places, at Hampton Court, St. James's Palace, Chilham and Sissinghurst Castles, and more recently at Liverpool Street Station and in additions to the Faversham Almshouses in South Road (Melrose 1992).

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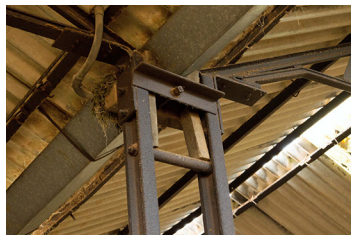

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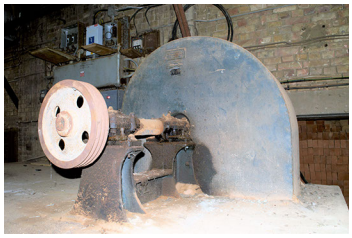

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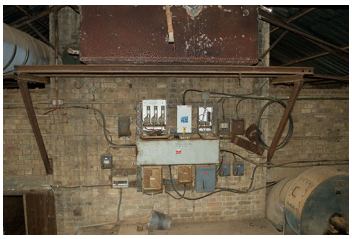

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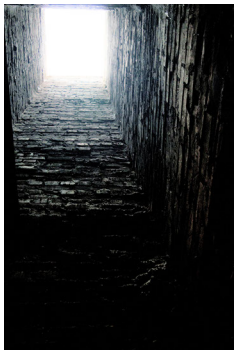

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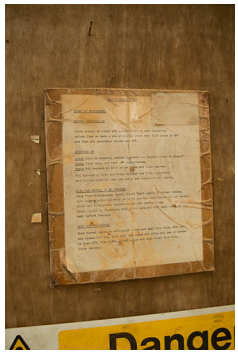

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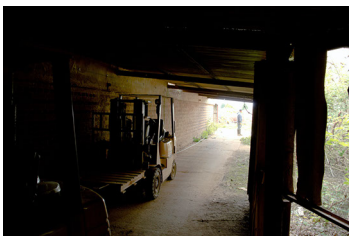

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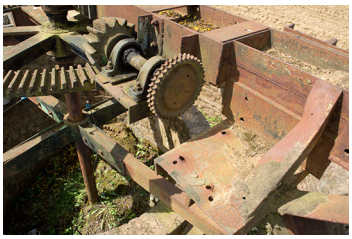

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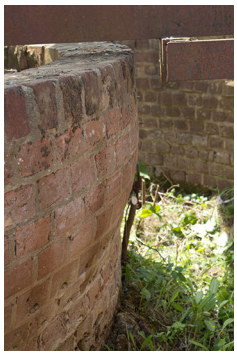

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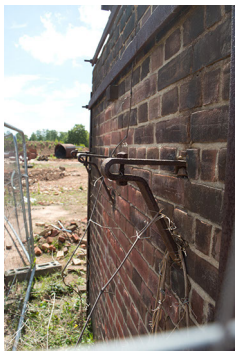

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Appendix 3 OASIS Form

OASIS ID: ARCHAEOL6-286456

Project details

Project name	Cremer and Whiting Brickworks, Sumpter Way, Ospringe, Kent - Historic Buildings Record
Short description of the project	In May 2016 Archaeology South-East (a division of the Centre for Applied Archaeology, UCL) carried out a historic buildings record of the Cremer and Whiting Brickworks, Sumpter Way, Ospringe, Kent, ME13 7NT (NGR 59998 16147). The work was commissioned by Orion Heritage on behalf of W.T. Lamb Holdings Ltd. and requested by Swale Borough Council, to be addressed as a condition placed on outline planning consent relating to the part demolition and retention of the existing brickworks structures on the site, ahead of its redevelopment for residential use (Planning Ref. 14/502729/OUT). The Cremer and Whiting Brickworks was established during the 1920's on the site of an earlier brickfield known as 'Owen's', which had been worked since c.1850 and ceased production by the third quarter of the 19th century. The Cremer family were notable brickmasters within the Faversham area and owned a number of brickfields within the district. This included Cremer's Field in Oare Road (formerly Wildash Field), acquired in c.1880 and ceased production in 1912, and another small brickfield in Whitstable Road, which originated around 1870-75 and was worked up until WWII (Twist 1984). Earlier evidence of the Cremer family business dates to around the 1840's when Charles and William Cremer at Ospringe are identified as brickmakers. In the 1870's, a Cremer and Co. brickmakers is recorded in Preston-next-Faversham (SECL 2014). The Whiting family appear to have also been involved in construction and building material, at Ospringe, since the early 19th century. In 1905, Robert M. Whiting, is recorded as a brick and tile maker and insurance agent, under the name Whiting and Co., within the Ospringe directories. The Whiting's Copton Works were worked during the 1850s and closed in 1925. In 1926, Whiting and Co. are recorded as merging with Cremer and Co. and their combined brickworks, are first shown on historic mapping dating to 1931 (SECL 2014).
Project dates	Start: 15-05-2017 End: 02-06-2017
Previous/future work	Yes / Yes
Any associated project reference codes	CWO 17 - Sitecode
Any associated project reference codes	170341 - Contracting Unit No.
Type of project	Building Recording
Site status	None
Current Land use	Other 2 - In use as a building
Monument type	BRICKWORKS Modern
Significant Finds	NONE None

Project location

Country	England
Site location	KENT SWALE OSPRINGE Cremer and Whiting Brickworks, Sumpter Way, Ospringe, Kent
Postcode	M13 7NT
Study area	7.18 Hectares

Site coordinates	59998 16147 59998 00 00 N 16147 00 00 E Point

Project creators

Name of Organisation	Archaeology South-East
Project brief originator	Archaeology South-East
Project design originator	Orion Heritage
Project director/manager	Ron Humphrey/Amy Williamson
Project supervisor	Hannah Green
Type of sponsor/funding body	Client

Project archives

Physical Archive Exists?	No
Digital Archive recipient	Kent History and Library Centre
Digital Archive ID	CWO17
Digital Contents	''none''
Digital Media available	''Images raster / digital photography'',''Text''
Paper Archive recipient	Kent History and Library Centre
Paper Archive ID	CWO17
Paper Contents	''none''
Paper Media available	''Correspondence'',''Drawing'',''Notebook - Excavation',' Research',' General Notes'',''Plan'',''Report''

Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	Cremer and Whiting Brickworks, Sumpter Way, Ospringe, Kent, ME13 7NT - Historic Buildings Record
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