Channel Tunnel Rail Link

Assessment of Historic and Cultural Effects

Final Report

Volume 4 of 4

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DETAILED DESCRIPTIONS OF SELECTED KEY RESOURCES

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1 ST PANCRAS STATION GRADE I LISTED (OAU NO. 3035) (Figs. B1-2)

1.1 **Historical notes** (Jack Simmons, *St Pancras Station* (1968) is the primary account of the history of the station).

The Midland Railway Company (formed by amalgamation in 1844) became one of the most prosperous railway companies in the country, but had at first no outlet to London, running instead to Euston from Rugby on the London and North-West Railway. An extension to the Great Northern line at Hitchin was authorised in 1853, opened in 1857 and by the following year allowed alternative access to the capital at King's Cross (with the GNR obtaining a handsome toll for the running powers). But it soon became clear that the Midland would need a terminus of its own, and the position was exacerbated by the heavy traffic coming to London for the International Exhibition of 1862 and the eviction of Midland trains from King's Cross. The Midland Railway (Extension to London) Act passed through Parliament in the first half of 1863.

Land was acquired close to King's Cross, most of it occupied by housing. The Midland approach to the Terminus was different from the Great Northern in that it passed over rather than under the Regents Canal. It incorporated a link to the Metropolitan line (the present Thameslink Tunnel) which allowed traffic to pass through into Kent on the London Chatham and Dover Railway. The line had to negotiate the Fleet sewer and St Pancras Churchyard, while avoiding the works of the Imperial Gas Light and Coke Company; as a result it ended at a height of 15 feet above Euston Road.

The station, late amongst London termini, followed Paddington in having a hotel placed transversely across the end of the tracks, and followed the now lost Charing Cross and Cannon Street in having single-span roofing (both of these outstripped in span by Birmingham New Street). W.H. Barlow, Chief Engineer of the Midland Railway, consulted with the engineers of these roofs, especially with Ordish who had worked on the Crystal Palace, Birmingham, and designed a station in Amsterdam which presages St Pancras in some ways. As Barlow explained in his paper to the Civil Engineers, the design of the station flowed from the necessary rail height, and the design of the storage area beneath the track on the module of the Midland beer barrel, which precluded intermediate roof columns. The tie-beam for the huge single-span roof was thus formed from the floor-girders that served as the ceiling of the storage undercroft. The pointed crown of the roof was intended to increase its strength and improve its appearance, while it was also noted by Barlow that with an unencumbered interior 'the Company may make any alterations in the arrangements of the lines and platforms which may from time to time best suit their large and growing traffic.' His plans for the station were accepted in 1865 after which it was decided to hold a competition for the Hotel and station buildings.

The contract for the station and tunnel went to Waring Bros., and the separate contract for the roof to the Butterley Company of Derbyshire. Work started in 1866, demolition in Agar and Somers Town lasting from March to June when the main site was completely cleared. The approaching line was carried over the St Pancras burial ground on a girder bridge, but the tunnel drove through it, and the removal of bodies (partly supervised by the young Thomas Hardy) continued over the winter. At the same time the Fleet River had to be entirely enclosed in an iron pipe, completed in January 1867. The station foundations had begun in July 1866, and the tunnel progressed through 1867. There were inevitable delays, and the vast moveable scaffold for erecting the roof was not ready until the autumn of 1867 and the slow production of the roof trusses meant that the first

section to be erected in November was a year behind schedule. Moreover, this was a time of considerable anxiety about commercial railway undertakings (two companies were bankrupted in 1866-7) and the bold construction of St Pancras at the same time as the company was forwarding the Settle & Carlisle line while restraining the demands of shareholders only emphasises the determination of the company to make its mark in the capital. In the autumn of 1867 Warings contracted for the side walls of the shed (to be built in Scott's Gripper bricks, and presumably to his design). A second scaffold was erected in spring of 1868 to speed the completion of the roof, and the unfinished station was able to open (without much ceremony) in October the same year.

A competition for the station buildings and hotel had been initiated in May 1865 when the Company invited eleven architects to prepare designs. Gilbert Scott was chosen early in 1866, and while his grand Gothic fantasy made some use of his famously rejected Foreign Office designs, the efforts of his rivals have (as so often) not been preserved for any comparison to be made. Following the company's necessary retrenchment in that year, revised plans were ready by December, and the Clerk of Works was appointed in January 1867, though beyond foundation work nothing was done for another year. While the Booking Office was complete early in 1869, the hotel was not to open until May 1873 and work on the west wing continued for at least another three years.

1.2 **Description of Station** (omitting St Pancras Chambers; see Figure B1, and Appendix D Glossary for architectural terms.)

The *trainshed roof* spans some 75 m and consists of curved trusses of even depth, each formed of a pair of box joists separated by a double lattice of struts and springing from a large respond that disappears into the flank walls. The one decorative element in the ironwork is the spandrel in the space above the springing, with geometric patterns. The spandrels rest on a stout iron post which supports the longitudinal lattice bracing running between the trusses at the head of the wall. Above this lattice bracing across the span of the roof are fifteen equally spaced 'purlin' girders running the length of the building (seven in each slope) to give longitudinal support. This can most clearly be seen at the north end, where the lattice in the truss has a 4-X pattern at the springing and above that there are 3-X lattices between each purlin. The large reticulated screen at the north end is formed of a double truss joined with a grid of girders aligned on the purlins of the roof and ending at a false 'tie' level some 10 m above the track. This is nonetheless quite translucent, and the well-known view of the gasholders is seen through it as much as below it. Precisely the same arrangement is found at the south end against the hotel wall, again emphasising how essentially independent the roof structure was of the brickwork that was later added to it.

The roof covering was of ridge-and-furrow glazing (after the manner of Paxton's Crystal Palace roof) on three intermediate rafters (i.e four ridges per bay). Originally the top eight roof sections were lit (four each side) and the remainder slated, in contrast with the present striped pattern

As previously described, the main work is done below deck level, where the responds are tied to the network of floor girders, and the brick piers in the side walls are very substantial (they continue down into the foundations with inverted arches). Compared with this, the upper brick walls are largely for show, and this is demonstrated not only by the presence of the longitudinal braces described above as connecting the trusses, but also by the fact that construction of the roof had commenced on a separate contract

before the walls were even started. The earliest photographs of the site show the huge curved springings for the trusses standing independently. Only their front edges can now be seen, appearing inside the station as neat iron piers of square section supporting the roof, with the inscribed base: 'Manufactured by the Butterley Company Derbyshire 1867.'

The *west side* of the station contains the principal railway offices, and a booking hall that has lost its fine hammer-beam roof, but retains some splendid carvings of 19th-century railway figures, and original woodwork. The booking office and adjacent railway offices have tall gothic windows overlooking the station (brick with alternate stone voussoirs, filled with stone plate tracery, decorated frieze and marble nook shafts); further north these are mostly blank arches.

On the outside to the west are a series of structures which have clearly been altered and whose function has changed during the lifetime of the station (see Fig. B1); many of these minor buildings will disappear. The main station offices **A** run some way north alongside the glazed cab road **B**, then continue as a lower and narrower building **C** shown as the 'Parcel Office' on the 1871 OS plan. The narrow yard **D** to the north of this is surrounded by a high brick wall with blank arcading and a parapet, carrying the E-W girders for ridged roofing over the yard that has now mostly gone. The wall skirts round the cab entrance **E** descending to Midland Road. At the north end of the yard **D** the return wall has two gothic arches and one flat one next the trainshed. This admitted one or more lines to the goods offices **F**, a tall single-storey building (now uncovered, but with iron rod trusses for a N-S ridge roof), whose large open arches on the west side indicate a transfer point from rail to road. The northern part of this building **G** has an upper floor with a workshop and roof vent. Outside of the yard **D** is a modern single-storey building **H** in a different position from that shown on the 1895 OS plan. Beyond this and against the wall of the trainshed is the remains of a narrow canopy roof over a former platform **I**. The 1895 OS plan shows coal shoots in this position, though the only trace of this is perhaps to be seen in the arched openings in the west wall.

The *east side* of the Station consists of a single depth block running the entire flank of the train shed, of two storeys above the basement, and with a lean-to roof continuing the downward sweep of the main roof but punctuated by a row of chimneys. The ground floor has one broad 'shop' arch and the upper floors share a single large pointed window (Scott's drawings show two ranks of window here). Internally towards the trainshed there is a blank arcade of tall pointed arches with voussoirs alternately of brick and white stone, and a band of stone at the arch springing level, which corresponds with the level from which the main trusses appear to spring.

The plan of the *undercroft* (Fig. B2) clearly reflects the main structure above, with a central area (partly subdivided) below the trainshed containing a forest of iron columns at 4.47 m (14 ft 8 in) centres. The columns are of no outstanding decorative quality but have pleasing rounded capitals beneath the girders; about a metre below the caps are bracketed offsets, whose chief function was probably to hold planks for the riveters to work from. The Chambers and Station offices are separately cellared, and there is a series of arches on the east side along Pancras Road let as commercial premises, and some, allowing for dead space behind the cab road, on the western side. In the northern extension beyond the trainshed are further arches on each side, with curved ends and more dead space. In the middle here was the lift that brought down the beer waggons which could run on tracks down the centre of the undercroft, or turn off at any of the three turntables. This has now been blocked off.

The continuous series of arches at basement level all round the station are a prominent feature of the building as townscape, and they are continued up Pancras Road with the plainer yellow-brick arches under the coal shoots, while on the western side of Pancras Road and lower down on Midland Road are the red brick arches of the Midland Goods Yard. These are of hard brick with fine cement pointing, and answer the station arches across the road.

1.3 Assessments of the station

Attitudes to the station and its hotel have changed with the growing appreciation of Victorian architecture. As remarked by Simmons, the delayed and partial opening of the new buildings affected the number of contemporary views that would normally have been expressed, though from the first there were some negative opinions (see Biddle in Hunter and Thorne 1990, 72-4). Fears for the station's future in the 1960s provoked a number of comments, resulting in the Grade I listing of the trainshed and hotel in 1967: Betjeman called it 'A station apart... a Royal Station'; Piper 'the great Gothic phantasmagoria' (Simmons 1968, 101-8). A more recent assessment of stations across the world has referred to St Pancras as 'the undisputed King, or more properly Queen-Empress of Stations.' (Richards and MacKenzie, 1986). For the present purpose, however, it is Ian Nairn's description of the townscape which is most relevant:

'St Pancras Station; Shed, W.H. Barlow, 1868; Fancy work, Sir G.G.Scott, 1874

'St Pancras is the most Continental of London train sheds. By comparison, the others are put together additively, like an English cathedral; this is one huge all-embracing sweep of the same family as Hamburg or Cologne. A vast throbbing hangar; the phrase needs to be repeated sixteen times to make enough weight in the book and convey the overwhelming solid force of this beginning or end to journeys. It is painted light as some kind of campaign to 'brighten the image of British Rail', but its only true colour is jet black.

Gasholders loom up at the far end of the platform. They are worth a close look, and to get there turn right out of the station. The concoction in front of the shed is by Sir George Gilbert Scott, incredibly clever in composition and incredibly heartless. No Victorian quaintness here, in this competent reckoning up of fees-per-crocket.

Right again, and you are in Midland Road. You might as well be round the backside of New Street at Birmingham or London Road at Leicester. It is one of the most astonishing transformations in London, a jump of a hundred miles in a few yards, achieved with the unemphatic red brick and hypnotic arcading of the Goods Station. London for a moment - and just for a moment - seems fussy and flurried, using two words where one will do. Anyone whose heart was lost to bricky Leicestershire would find this place unbearably nostalgic.

Up Midland Road to the traffic lights, turn right under the railway bridges; then, in Goods Way, the gasholders come back, a cascade of intersecting circles, a shout of sheer joy from the most unlikely place. All of them come to the party equipped with classical columns, simple Doric and a kind of gasholder Composite. The nineteenth-century equivalent of a Baroque angel is not a Victorian angel but a Baroque gasworks.

The whole of this place at the back of St Pancras is incredibly moving: tunnels, perspectives, trains on the skyline, roads going all ways. If you get nothing from it at first, stay there until something happens: it is really worth the effort.'

Nairn's London (1966), 105-62

2. MIDLAND RAILWAY WATER TOWER (GRADE II LISTED, OAU NO. 3031)

The Water Tower is listed Grade II in its own right, and stands on the east side of the Midland Main Line, just north of St Pancras station and next to the group of three Gasholders. It is of brick with stone dressings (perhaps, like St Pancras itself of Nottingham Bricks and Ancaster Stone) and in three stages of Italianate Gothic style. The chamfered plinth has two stone offsets, and a stone string course marks the first floor. The narrow south wall is relatively plain, with a round-headed door having alternate brick and limestone voussoirs and moulded brick shafts to the jambs; the brickwork of the upper stages has alternate courses of red and orange bricks. The west face towards the line has three windows on the lower stage, the central one with a stone segmental pointed arch and alternate stone voussoirs (this has the form of a door, but the window sill is of stone and is probably original). The first stage has an arcade of brick piers above a sloping stone sill with moulded pier bases, a stone band with square stone capitals, and pointed arches with alternate brick and stone voussoirs. Between the piers are tall ventilation slits in the brick wall. The top stage consists of a bold parapet above a corbelled stone cornice, entirely of brick, but with a tall narrow arcade using a variety of brick widths for the piers and round-headed arches with cut mouldings.

Internally the tower has a large tank on the first stage and above, and workshop on the ground floor, featureless except for the water pipes and stopcocks. The chimney in the north-east corner implies a hearth for domestic or workshop use. There is a plain single-storey extension at the north end, of brick and stone, and possibly contemporary.

3 LISTED GASHOLDERS AT ST PANCRAS (GRADE II LISTED)

3.1 Historical note

The Imperial Gas Light and Coke Company began in 1821 with a vast franchise covering the whole north London suburb from Pimlico to Whitechapel (Everard, *History of the Gas Light & Coke Company*, 1949). The Pancras premises, eminently suitable for service by canal, date from 1822, and only ceased to manufacture gas in 1904 thereafter being kept on as a holder station. The most imposing visible remains are of the group of gasholders west of Goods Way which caused a bottleneck in the St Pancras approach for the original engineers of the Midland Railway. Another group lies east of Goods Way.

3.2 Description

3.2.1 *The three listed gasholders* (OAU No. 3024)

The main gasworks site was north of Kings Cross, and was occupied by many gasholders, but it was only in 1860 that the site to the west of what is now Goods Way was purchased for three further gasholders. The original plan for this area was to build one large gasholder with a tank diameter of 236 feet (71.9 m) and excavated to a depth of 52 feet (15.8 m) into the London Clay. It was subsequently decided however to replace this single structure with three smaller tanks of 145 feet (44.2 m), 134 feet (40.8 m) and 105 feet (32 m) in diameter all to a depth of 55 feet (16.8 m) into the London clay. The larger tanks were completed in July 1861 and the single lift holders erected later the same year. The smaller tank was completed in 1867.

All three tanks to the west of Goods Way were telescoped to three lifts in 1880 and formed the 'siamese triplet' in which columns were shared between adjacent holders. It is known that the walls of the in-ground tanks were constructed of brickwork and were reinforced by the addition of hoop iron bands. A cone of London clay was left in the central portion of each tank to reduce the volume of water required and which acted as a seal to the enclosed gas.

The Grade II listed triplet of gasholders consists of a ring of three superimposed columns joined by narrow lattice girders. The gas bell rises on runners on vertical rails on the interior face of each column. As previously noted, a subtlety of the design is that each of the three gasholders is of a different size, and they have 13, 15, and 17 columns respectively. This adds interest to the geometry of their meeting, since each gasholder has one column shared with each other gasholder and two columns linked with short lattice girders. The central space is a series of triangles with lattice girders. The southernmost gasholder has no tank, the superstructure alone standing over a water-filled hole.

3.2.2 *The single listed gasholder* (OAU No. 3027)

The single gasholder to the east is of similar construction, on a 16-column plan and of only two stages, with a telescopic three-lift tank of riveted wrought iron plate, approximately 40 m in diameter and 24 m high.

4 THE STANLEY BUILDINGS, NOS. 1-10 (GRADE II LISTED, OAU NO.3037)

The Department of National Heritage list entry for Nos. 1-20 reads as follows:

'Flatted, philanthropic accommodation, built in 1865 by Sydney Waterlow's Improved Industrial Dwellings Company with the help of the builder, Matthew Allen. Painted stucco to ground floor where it is treated as rustication, and to full-height, balconied recesses and window architraves. Brick in Flemish bond to projecting ranges; moulded brick to cornice; roof parapetted. Five storeys. Brick ranges of two windows each, alternate with two-bay balcony ranges to produce a bay rhythm of A:B:A:B:A. Balconies supported by cast-iron columns and enclosed by railings in a lattice pattern; the rear walls of the recesses with segmental-arched openings and pilasters with stylized Ionic capitals; the balcony fascia composed of a simple metal beam. All windows to brick ranges flat arched. Plain utilitarian style to rear elevation dominated by WC and scullery towers. Returns unfenestrated. Forms a group with flats 21-30, Clarence Passage (q.v.) to the south, and with the King's Cross Gasholders (q.v.) and Barlow's great shed to St Pancras Station (q.v.). Among the earliest blocks built by Waterlow's influential and prolific IIDC. (See John Tarn's *Five Per Cent Philanthropy*', for a detailed account.)'

Tarn (1973, 50-52) describes the foundation of the Improved Industrial Dwellings Company in 1863, following the foundation of the Peabody Trust in 1862. He notes that when these opened as the 'Palmerston' Building in 1866 they were favourably reviewed by *The Times* [23 July 1866] which gave the following description:

"The pile, strictly speaking, consists of three blocks of buildings, side by side, or 72 dwellings in all, each block being six stories in height from the basement. The plan may be described as a parallelogram having a frontage of 56ft by a depth of 44ft, divided into four sections by a party wall in the centre and a passage in the middle of each wing. The two centre sections are set back 3 ft from the front line for the purpose of affording space for a balcony of that width on each of the upper floors. The balconies are accessible by a fireproof staircase, extending from the basement to the roof. The larger tenements, consisting of three rooms and a washhouse, occupy the end sections of the building. The living-room in each tenement is provided with cupboards and with a range having an oven and boiler. Leading out of the living room is the washhouse or scullery, which contains in every case what have been called the accessories of the dwelling - water-cistern, sink, a small fireplace, washing copper, dust-shoot, and watercloset.. The fireplace in the washhouse is used for cooking, and it conduces greatly to the comfort of the living-room in summer. The front room of the three-roomed tenement is a spacious apartment with two windows, one of which looks out on the balcony. The centre sections comprise the smaller lettings, and consist of only two rooms and a washhouse, but they are supplied with exactly the same conveniences as the larger lettings. Every floor or flat is a repetition of the other, and each room is provided with a ventilator, which communicates with air shafts running through the centres of the chimney stacks, an arrangement by which the air in the shaft is constantly rarified by the warmth of the flues, and a system of natural ventilation is produced. The windows are made to open outwards like ordinary French casements, and so as to avoid the danger of children falling out. Drainage is effected by means of stoneware pipes, which pass down the corners of the washhouses directly to the common sewer, and the dust shaft carries the dust to a covered receptacle at the base of the building. Every tenant has his apartments completely to himself, and nothing is used in common except the fine spacious roof, which serves as a drying and recreation ground

5 GERMAN GYMNASIUM (GRADE II LISTED, OAU No. 3040) Fig. B3.

5.1 Historical notes

Despite precursors in London, Oxford and Much Wenlock, the foundation of the German Gymnastic Society was the first British Gym club, and its premises one of the earliest public gymnasia when opened in 1865. The first modern Olympic Games were not held until 1896, but the National Olympian Society was inaugurated in 1865 and held its first championships in London in 1866. The new Gymnasium was described in *The Builder* for 1866:

'It is the aim of the German Gymnastic Society, established in the Old St Pancras Road, King's Cross, to afford its members an opportunity for bodily exercise, not only for the sake of healthful recreation, but with a view to render them fit to serve their fellow men and their country in all cases where bodily strength, endurance, and skill are called for..... The German system of Gymnastics has been introduced in other countries. A German Gymnastic Society was established in London in 1861 by 170 Germans who subscribed to a foundation fund. All classes are represented, but the mercantile class preponderates. The hall, of which we give a view, has been built by Messrs Piper and Wheeler, from the designs of Mr. Ed. Grüning, architect. The apparatus has been manufactured by Messrs Snoxell, from designs supplied to them. The fittings are as yet far from complete. When all is done about 30 squads of men each will be able to practise at a time. A structure at the end of the hall, not shown, is intended for escalading exercises..... [Dimensions of hall 120 by 80 ft, 57 ft to top beam; club room 60 by 35 ft; also a reading room...] It is proposed to ornament the hall with busts of celebrated Germans and others who have worked in the cause of human progress... The land is held on a lease for 94 years at a rent of £42. The building cost about £6,000 exclusive of the fittings and apparatus. All the money required, over £10,000, has been raised. The number of members is about 1,100, the majority being English. The foundation stone was laid on the 14th May 1864, the hall was opened for use on the 28th of January 1865. The entrance and others parts are still incomplete.'

The Builder, 19 May 1866, 366-8

Later historical events associated with the German Gymnasium include the inauguration of the Amateur Gymnastic Association there in 1888 and a Zeppelin raid in 1917 which caused some damage to the entrance hall.

5.2 Description

In plan the Gymnasium block consists of four (unlisted) houses on Pancras Road with a passage entry in the centre, a transverse hall with a storeyed wing at the south end, and the main gymnasium at the east end. The houses are of three storeys with shops, of yellow brick and stone detailing to the windows and stone cornice to the parapet. The north and south corners are rounded and the second-floor windows have arched heads, except at the north end, and some windows have decorated keystones. The centre of the elevation is offset into the street and has an arched entrance with a segmental pediment. A label above the door reads TURNHALLE.

The *exterior* of the Gymnasium is of yellow brick with broad red stripes at the plinth and first floor, and red brick for voussoirs, the prominent stepped arcading that marks the parapet stage, and the final cornice (the wall on the opposite side of Cheney Road was

built in similar style to match this). The gabled east wall has a row of five pointed windows with a round window above, and a stair turret at the south-east corner with slit windows. A small off-centre porch is probably original, but the door beside it is modern. The long side walls have been much altered but had pairs of round-headed windows in each bay at ground and first floor, in sunk panels with sloping sills. The windows have mostly been replaced with a single flat-topped openings. The transverse hall at the west end of the Gymnasium had a different elevation, with pointed arches on the ground floor and a round window over the door, but much altered windows in the two upper storeys (probably after WW1 bomb damage).

The *entry* is through a narrow passage leading to a wider hall with a stair ascending on each side of a passage through to the Gymnasium. The stair is of stone with iron rails, and top-lit. The ground-floor vestibule is a transverse hall with a row of five iron columns supporting the floor above, and five arches into the Gymnasium (Fig. B3).

The *Gymnasium*, which now has an inserted floor, is of seven bays with clerestory lighting, aisles and a first-floor gallery. In each bay on the ground-floor piers with crocketed stiff-leaf caps carry transverse brick arches to the outer walls, and provide the corbel base for the gallows bracket that supported the overhanging wooden gallery. This has now gone, though the outline of the balustrade remains in the east wall. At the first floor similar piers immediately above the lower ones support an arcade of brick pointed arches. On the inside they carry the large stone corbels for the springing of the roof trusses, and on the outer side they spring a second tier of transverse arches lying below the slope of the roof; the latter are effectively flying buttresses to take the thrust of the roof.

The seven-bay *roof* consists of regular trusses with principal rafters but supported by arch-bracing in laminated timber, having cast-iron spandrels and topped by a queen-strut apex, which itself mounts a king-post supporting the ridge of the clerestory roof. The laminate is of twelve pine boards, bolted at regular intervals (and still carrying hooks for ropes). The reference to the first roof of King's Cross Station is obvious, though there the whole roof was circular and so the 'rafters' were also laminated, and eight rather than twelve boards were used; but the iron spandrels were of similar general appearance, and also in two pieces.

The upper hall at the top of the stairs has been altered (after bomb damage) but appears to retain a 19th-century king-post roof.

The Gymnasium is of importance for its roof, and its association both with the German community in London and the early history of competitive athletics which eventually led to the foundation of the modern Olympic Movement.

6 PURFLEET PALAEOLITHIC AND LATER DEPOSITS (Figs. B4-5)

6.1 Palaeolithic

The Purfleet Valley contains evidence of palaeolithic flint artefacts and palaeo-environmental remains recovered from pleistocene geological deposits. These deposits consist of a sequence of stratified clays, silts, sands and gravels lying in a channel cut into the north-facing chalk slope to the south of the Mar Dyke. This channel and its infilling pleistocene deposits (the Mar Dyke channel) represent an early course (or courses) of the Mar Dyke or an early loop of the Thames itself. A substantial part of these deposits has been removed by quarrying (Fig. B4). This has enabled limited archaeological and scientific observations to be carried out, although these have been mostly small scale and/or unsystematic, especially with respect to the post-pleistocene material.

Palaeolithic flint artefacts were collected by Snelling from Botany Pit (OAU No. 1521) in 1961. This flint industry has been attributed as 'Proto-Levalloisian' and dates to between 200,000 and 300,000 years ago. Snelling recovered this assemblage from a deposit of gravel c.3.5 m thick resting on chalk bedrock at c.12 m OD.

More detailed investigations of the Mar Dyke channel deposits were carried out less than 1 km to the east by Palmer in the late 1960s at Greenlands Quarry and Bluelands Quarry (OAU No. 1516). Palmer recovered palaeolithic artefacts from channel deposits in both quarries. These artefacts occurred in three distinct bands of gravel within the pleistocene sequence (which are shown extrapolated into a diagrammatic section in Fig. B5). The artefacts from each gravel band have been attributed to, respectively: the Levalloisian industry (Gravel 1), the Clactonian and Acheulian industries (Gravel 2) and the Clactonian industry (Gravel 3). Palmer identified these gravel-bands within a deep sequence of pleistocene deposits filling the middle of the Mar Dyke channel. At this point the base of the channel was cut into chalk bedrock at 6.7 m OD, and the top of the pleistocene sequence occurred at 13.75 m OD. In between the gravel-bands 3 and 2, 2 and 1, and over gravel-band 1, are complex sequences of clays, silts and sands. The lower clays and silts (between gravel-bands 3 and 2) have been shown to contain both mollusc shells and pollen grains. The presence of molluscan remains suggests suitable conditions for the preservation of faunal remains, and in particular small mammals (voles, shrews and mice), of importance as evidence for the past environment. The co-occurrence of three distinct artefactual horizons in association with deposits containing molluscan, faunal and pollen evidence makes the pleistocene Mar Dyke channel deposits at Purfleet of national importance for palaeolithic archaeology.

Work undertaken by Bridgland in connection with the designation of the Geological Site of Special Scientific Interest (OAU No. 1851), showed that further palaeolithic material survives in the vicinity of the 'Esso Pit', immediately east of Botany Pit and south of the Purfleet By-pass (Bridgland 1994).

The depth of the channel is known from the work of Palmer - the shallower channel recorded by Snelling must reflect the fact that the section he examined was truncated by quarrying and hence did not show the full depth of the pleistocene sequence at Botany Pit. The profile of the channel-base is estimated from bore-hole evidence and from certain relevant data recorded by Palmer.

6.2 Mesolithic and Neolithic

Archaeological remains from these periods have been discovered at several locations. At the west end of Greenlands Quarry pottery (possibly Neolithic), flint artefacts (Mesolithic/Neolithic) and two possible post-holes (unattributed) were found in the top metre of the deposits exposed in the quarry section (OAU Nos. 1516-19). A prolific Mesolithic flint industry was also recovered from the topmost part of the section at the northeast corner of Greenlands Quarry (OAU No. 1517). An assemblage of over 300 flint artefacts, including flakes and a polished axe of likely Mesolithic and/or Neolithic age, was recovered from the topsoil at Beacon Hill during an archaeological salvage operation after the destruction of the hill-top by quarrying in 1969 (OAU No. 1961).

6.3 Bronze Age

The only place in the area where unambiguous Bronze Age archaeological remains have been found is at the top of Beacon Hill where a Bronze Age cinerary urn was recovered during the 1969 archaeological salvage operation (OAU No. 1961).

6.4 Iron Age and Roman

Isolated finds of pottery, bricks, tiles and loomweights attributed to the Roman and/or Iron Age periods have regularly been found in the upper parts of the old quarry faces around Botany Pit (OAU No. 1522). An inspection of 'the old working face' in 1956 showed traces of pits and ditches containing pottery, bones and much charcoal (OAU No. 1523). These features can probably be linked with the isolated Roman/Iron Age finds common in the Botany Pit. No precise locations have been recorded for these archaeological remains, although they most likely came from the high west-facing side of the quarry.

7 THE ARCHAEOLOGY OF THE EBBSFLEET VALLEY (Fig. B6)

The Ebbsfleet Valley is rich in archaeological remains from all periods, containing pleistocene deposits of palaeolithic significance, a waterlogged Mesolithic site, at least two waterlogged Neolithic sites, a probable Bronze Age settlement, a concentration of Roman buildings, and traces of other prehistoric and also Saxon remains.

The Ebbsfleet was a tidal river (OE *fleot)* and in earlier times must have presented some barrier to east-west communications, since the Roman road avoids crossing it. A considerable area on each side of the stream was prone to flooding in historic times, and one area known as The Brooks was partially managed by a series of drains. The southern end of the valley, at Springhead, may possibly be the site of a Roman wharf or hythe associated with the small town and religious centre of *Vagniacis* (see section 8 below). This is the point towards which the Roman road was directed. It is only for this length (from Dartford to Rochester) that the Roman road is not followed by the medieval and turnpike roads, which diverted through Gravesend until the building of the A2 Trunk Road in the present century.

7.1 Pleistocene geology of the Ebbsfleet Valley

The Ebbsfleet is now a small stream which enters the Thames from the South. At this point the Thames channel is cut into chalk bed-rock, and pleistocene deposits (so-called Boyn Hill gravels, more properly known as the Orsett Heath gravel unit), associated with a previous course of the Thames, line its southern bank. In this area the Boyn Hill gravels are known to be rich in palaeolithic evidence, and have been extensively investigated in quarries at Swanscombe to the west. The Ebbsfleet Valley cuts transversely through these pleistocene deposits and into the underlying chalk bed-rock.

The Ebbsfleet Valley is thus filled with a complex sequence of pleistocene deposits which post-date the Boyn Hill gravels. There are two main categories of deposit:

- water-lain deposits (fluvial silts), reflecting warm climatic periods when the Thames flowed at a higher level than today and the Ebbsfleet Valley was a marshy back-water;

- colluvial and solifluction deposits reflecting cold climatic periods when the banks were exposed to the elements and the surrounding land-surface was destabilised so as to accumulate in the valley bottom.

Palaeolithic evidence can be found incorporated in both types of deposit. Fluvial silts are noted for their environmental evidence and the possible occurrence of undisturbed accumulations of lithic artefacts, within or buried beneath the silts. Colluvial and solifluction deposits can contain disturbed environmental and artefactual remains gathered and moved from the ground surface on which they originally lay, or can bury accumulations of artefacts or faunal remains with little disturbance to them.

The climate and the level of the Thames have fluctuated several times since the formation of the Ebbsfleet Valley. Each warm-cold cycle would have been accompanied by the formation of water-lain deposits on the base and sides of the Ebbsfleet Valley. They would subsequently have been eroded of buried as the drainage channel of the Ebbsfleet eroded more deeply, and the banks of the Ebbsfleet Valley were denuded as the deposits

covering them slipped down into the valley. The pleistocene deposits now filling the Ebbsfleet Valley are the result of the processes described above. The shallow depressions close to TQ 617733 and TQ 616727 have acted as traps for sediment, and these areas are filled with a deep and complex series of pleistocene deposits.

Much of the valley has been quarried this century, destroying the vast majority of the deposits which would have enabled a full and accurate reconstruction of the pleistocene history of the area. The picture is further complicated by small valleys (now dry) which enter the main valley from the east and west. However the following summary is possible. The oldest deposit in the Ebbsfleet Valley is a soliflucted chalk deposit (Coombe Rock) which lines the sides of the valley-cutting. This is overlain by gravels, or in some places other Coombe Rock deposits. The gravels relate to development of water-drainage out of the valley and in places gravel-bottomed channels cut into Coombe Rock can be, or have in the past been, seen. In some places fluvial silts have been preserved in such channels, and in others the channels have been filled with colluvial or solifluction slopewash deposits which in turn are occasionally overlain by fluvial silts. These pleistocene deposits are overlain by thick deposits of fine colluvial silt, probably of Holocene age.

This general summary has described the main types and sequence of deposit present in the Ebbsfleet Valley rather than presented a detailed description of the sequences in specific locations. The sequences preserved in different parts of the valley are quite different, and their integration into a unified geological history is difficult due to the wide scale destruction of deposits which has left only isolated pieces of stratigraphic evidence. The geological details of the different remaining deposits in the Ebbsfleet Valley are discussed below.

7.2 Palaeolithic Archaeology

The Ebbsfleet Valley has been known since the late 19th century as a rich area of pleistocene deposits containing significant palaeolithic evidence. R.A. Smith (British Museum) excavated the nationally important Levalloisian site of Baker's Hole there in 1910 (Levalloisian is a distinctive type of lithic technology involving the manufacture of large flakes). The Ebbsfleet Valley has been regularly investigated since, notably by Burchell in the 1930s and by Sieveking in the 1960s and 1970s. This work has established the palaeolithic significance of certain pleistocene deposits in the Ebbsfleet Valley.

Figure B6 shows the locations (Nos. 1-12) of remaining pleistocene deposits in the area of the Ebbsfleet Valley. Other areas are not thought to have had pleistocene deposits or have had all pleistocene deposits quarried away. The twelve individual areas of pleistocene deposit have been assigned to one of the following four categories of palaeolithic priority:

Category 1	nationally significant site of limited extent
Category 2	nationally significant site of less limited extent
Category 3	pleistocene deposits of high palaeolithic potential
Category 4	pleistocene deposits of low palaeolithic potential.

Each numbered area is discussed below in more detail, where a summary is given for each location of the known or likely palaeolithic significance of each area.

Area 1 (category 1): This area is part of an SSSI (OAU No. 1852) and also of the scheduled ancient monument of Baker's Hole (Kent 267a, OAU No. 1526). The pleistocene deposits consist of a deep sequence of silts and clays overlying a sandy fluviatile gravel, which in turn lies in a channel cut into a deposit of Coombe Rock. The silts and clays are rich in molluscan and faunal remains, and the underlying gravels are extremely rich in faunal remains as well as containing lithic artefacts. This site is particularly important for environmental remains and chrono-stratigraphy, being one of only three sites in Britain reliably dated to the little-known Oxygen Isotope Stage 7 (240,000 - 190,000 BP), and containing artefactual, molluscan, faunal and (possibly) floral remains.

Area 2 (category 1): This area is part of an SSSI and also of the scheduled ancient monument of Baker's Hole Levallois site (Kent 267b). The pleistocene deposits here consist of a sequence of, from the base:

- Coombe Rock containing mammal fauna and lithic artefacts,
- gravel containing lithic artefacts in the base of a channel cut into the Coombe Rock,
- colluvial silts containing molluscs filling the channel and topped by a buried pleistocene land-surface on which in-situ artefacts are found,
- fluvial silt containing a temperate molluscan and mammal fauna. The age of this deposit is as yet unknown, although current research is attempting to address this issue. This site is particularly important for the sequence of environmental change it presents, accompanied by Levalloisian artefactual evidence which is rare in Britain.

Area 3 (category 1): This area is part of an SSSI. Its southeastern end contains the lower part of the same sequence of deposits as area 2, with a particularly clear section across the channel, showing its bank cut into the underlying chalk bed-rock. Lithic artefacts and faunal remains have been recovered from the channel fill. A buried Devensian (last ice-age, Oxygen Isotope Stages 4-2) land-surface is reported from its northern extremity.

Area 4 (category 3): This area is part of an SSSI. Potentially significant fluvial silts are visible at its eastern corner, and may also be present on the northern side, judging by the local topography and its proximity to known sites. This site is one of high potential, rather than of proven significance.

Area 5 (category 2): The pleistocene deposits in this area consist of two superimposed levels of Coombe Rock both divided, and also overlain, by periglacial involutions and a layer of homogeneous silty sand. The Coombe Rock levels contain both Levalloisian lithic artefacts and also faunal remains. The importance of this unit of Coombe Rock is that it is a lateral continuation of the Coombe Rock in which Smith found the classic Levalloisian site of Baker's Hole in 1910, hence its study has potential to help place this site in a chrono-stratigraphic and environmental context. Furthermore, it is likely that parts of the original Baker's Hole site are still preserved in this part of the Coombe Rock. If so it would be important to both recover an assemblage of artefacts using modern excavation and recording techniques, and preserve most of the site for possible future study.

Area 6 (category 1): This area is not currently protected as a scheduled monument or an SSSI. However it is one of the most significant parts of the pleistocene deposits surviving in the Ebbsfleet Valley. The pleistocene deposits consist of, from the base:

- two superimposed levels of Coombe Rock containing faunal remains and Levalloisian lithic artefacts,
- fluviatile sands and gravels filling a channel cut into the Coombe Rock levels and
- a layer of homogeneous silty sand.

The importance of this site lies in the fact that its Coombe Rock deposits are also a lateral continuation of Smith's 1910 Levalloisian site, which was located roughly 10-20 metres to the southeast. Furthermore, the channel deposits overlying the Coombe Rock are of particular importance as they can be correlated on height OD and clast-lithological grounds with those in Areas 1,2 & 3. This therefore provides a stratigraphic datum unifying the disparate faunal, molluscan and artefactual evidence recovered from these sites, and making them of international significance when considered together as a group.

Areas 7 & 9 (category 2): The pleistocene deposits in these areas consist of stratified gravel and silt deposits lying on chalk bed-rock. These deposits are part of the Boyn Hill (properly called Orsett Heath) gravel unit and were laid down by the Thames prior to formation of the Ebbsfleet Valley. This gravel unit is known to be rich in palaeolithic evidence, both faunal and artefactual, and its study has played a central role in investigations into the British palaeolithic. It has been shown to contain:

- human skeletal material (the Swanscombe Skull) (OAU No. 1529),
- a stratified sequence of lithic artefacts, showing a chronological relationship between a flake and chopper/core industry ('Clactonian') and a hand-axe dominated industry ('Acheulian') in the early British palaeolithic, and
- in-situ lithic artefacts associated with faunal and floral remains in the same horizon.

These deposits were once widespread, but are now mainly quarried away although several hectares still survive under the town of Swanscombe. The Swanscombe Skull site was some distance to the west, outside the Ebbsfleet Valley. Any surviving part of these deposits, surviving to full depth, must be viewed as a palaeolithic site of international significance.

Area 8 (category 3): This area is uninvestigated but must be considered as of high palaeolithic potential due to its closeness to Area 1. However it is lower than Area 1, and the important fluvial silts in Area 1 may be horizontally laid and hence truncated before they reach this area. On the other hand, they may deepen and become richer in this area, and it could preserve the stratigraphic relationship between the Area 1 fluvial silts and other more recent deposits also of palaeolithic significance.

Area 10 (category 4): This area is not known, or likely, to contain any evidence of palaeolithic significance. However it is possible that pleistocene deposits containing palaeolithic evidence may be preserved in patches.

Area 11 (category 3): This area is uninvestigated although there are reports of significant fluvial silts within it. The topography of the chalk bed-rock in this area has caused it to act as a trap for colluvial and solifluction sediments. There is a high chance that buried somewhere under these are pleistocene deposits of palaeolithic significance.

Area 12 (category 3): This area is uninvestigated, but it is likely on topographic grounds that it could contain an upstream extension of the fluvial deposits found in Area 1. If this were the case the fluvial silts in this area would be of sufficient palaeolithic significance for a significant proportion of them to require preservation.

7.3 Upper Palaeolithic and Mesolithic Archaeology

There is no known Upper Palaeolithic material from the area, but in view of the earlier and later archaeological sequence its discovery would not be surprising. Mesolithic material is recorded from immediately adjacent to the Ebbsfleet in the late 1930s (OAU No. 1538), apparently in the same location as some neolithic deposits (see below). In the available records there is some confusion as to which of three locations this material is from. The most likely is the southern of two scheduled monuments in the bottom of the valley (OAU No. 1541). Although not a large assemblage of flints, it is of national significance because of the potential indicated by its association with waterlogged organic deposits, and two distinct surfaces (one at least also producing neolithic material) beneath considerable depths of alluvium. This potential can be assumed to extend throughout the floodplain of the Ebbsfleet and extend beneath colluvial deposits either side where these have not been quarried away. This may be indicated by a few other stray finds such as a pebble macehead.

Key characteristics of mesolithic remains from the Ebbsfleet Valley:

- moderately sized assemblage of flints
- within sequence of deposits preserved beneath deep alluvium
- waterlogged deposits with potential for recovery of pollen, seeds, wood, insect remains, etc.
- sedimentary and molluscan sequence to enhance evidence of environmental context and development
- possible association with early neolithic flints and plain pottery suggesting significant potential for investigating the little understood transition from hunter-gatherer to farming societies

7.4 Neolithic Archaeology

The Ebbsfleet Valley is well known among prehistorians for a type of middle to late neolithic decorated pottery known as Ebbsfleet Ware after the exceptionally fine group of material excavated in 1938. The sites, comprising two localities (OAU Nos. 1536 & 1541) on the floor of the valley are a scheduled ancient monument (Kent 268), and are of national significance not only for the importance of the finds, but also the potential for further discoveries and for investigating the possible relationship to mesolithic activity and the environmental sequence (as explained above).

The first of these sites, near the sewage works (OAU No. 1536), is located by the side of the current channel of the Ebbsfleet. Publication of the 1938 excavation (Burchell and Piggott 1939) concentrated on the pottery, giving little detail of geomorphology or stratigraphy. The site was re-excavated in 1960 and was found to contain a series of estuarine muds and silts with some peat deposits. The main archaeological horizon was c.6 feet (1.8 m) beneath ground level where pottery was found in a fine grey silt. Waterlogged timbers placed horizontally were found immediately above a distinctive type of neolithic 'B' pottery (Ebbsfleet Ware). Radiocarbon dating of the timbers has produced a date of 3500-3050 cal BC (68% confidence, 1σ range based on published uncalibrated date) which suggests an early date for the pottery.

The second site, further south towards Springhead Nurseries (OAU No. 1541), is also waterlogged, and contained coarse pottery and bones of oxen associated with a lithic

assemblage which included both mesolithic elements (microlithic tools and debitage) and neolithic elements (leaf-shaped arrowheads). This site has been interpreted as partly contemporary with the first site. The state of preservation of excavated remains from these sites shows their high potential for the investigation of the neolithic period and the mesolithic/neolithic transition in the lower Thames Valley. Any further remains here would be of national importance.

These two areas were discovered by chance, and there is every reason to suspect that more deposits of this type may exist along the base of the Ebbsfleet valley sealed beneath alluvium (shown on Fig. B6). The whole of the flood plain of the Ebbsfleet down to the sewage works can be regarded as having high potential. This is probably also true of the larger body of alluvium further downstream south-west of the present NSE railway, not least because of the date range of material recovered from the surrounding areas during quarrying.

Other casual finds, for example in the area south-east of the sewage works, further indicate the presence of neolithic activity.

Key Characteristics of the neolithic remains in the Ebbsfleet Valley are:

- substantial assemblage of decorated neolithic pottery and some associated flintwork at northern site
- stratified sequence of two working floors or land surfaces
- associated organic deposits stratified beneath considerable depth of alluvium
- possible association of neolithic material with earlier mesolithic activity at southern of two sites
- proven importance of two sites with considerable potential for whole of undisturbed valley floor beneath alluvial and colluvial deposits

7.5 Bronze Age Archaeology

Local activity in the Bronze Age is indicated predominantly by stray finds, eg from Baker's Hole, area of Blue Circle sports club (OAU No. 1533), and north-east of sewage works (OAU No. 1537). A surface collection survey carried out in 1993 in the area by OAU west of the Sainsbury's Superstore north of Pepper Hill showed significant concentrations of Bronze Age struck and burnt flint (OAU No. 1467). This potential Bronze Age site is of significant interest in the context of the Ebbsfleet valley and also within the county of Kent. Although material dating to the Bronze Age is widespread in Kent, there is little information from settlements and other contexts from which evidence concerning agriculture, subsistence and the environment can be obtained (Champion and Overy 1989). In the context of Kent as a whole this area is therefore potentially of importance should it prove to be a settlement site.

7.6 Iron Age Archaeology

There is a record of an Iron Age pit (OAU No. 1786) being observed in the quarry north-east of the sewage works, and a suspected Iron Age phase for the Roman site (OAU No. 1532) near the Blue Circle sports centre.

7.7 **Roman Archaeology**

A group of Roman buildings (the Northfleet 'villa', OAU No. 1532) was found during the construction of a cement railway in the vicinity of the Blue Circle sports club in the 1930s. These buildings may be the remains of a villa, or perhaps a lesser farm or industrial complex. Following the closure of the cement railway, a local group the Thameside Archaeological Group, undertook a number of seasons of excavation on the villa site. Two wells and evidence for a substantial building were located along with considerable quantities of finds including 1st to 4th century coins, tesserae, building debris and pottery. The surrounding area is covered with much Roman tile and brick, suggesting that this was an industrial site, possibly for the production of building materials.

The site is located on top of the significant palaeolithic site in Area 6. There is evidence that there were several buildings at the site, and it might have had a more industrial focus than has been recognised to date. Its archaeological significance is increased by its proximity and possible relationship to the nearby Roman town at Springhead (described below). Although there has been quarrying in the area to the south, and an electricity sub-station has been constructed nearby, much of the site remains undisturbed, except by the archaeological trenches which are still visible. The site may well extend further north in the area of the Blue Circle sports field and further east towards the Ebbsfleet where there could be well preserved deposits beneath the alluvium (conceivably including wharfage or a river crossing).

Other finds are known from the surrounding quarries, including a ritual shaft (OAU No. 1528). Surviving remains around the sports centre are probably of significance at least in a Kentish context, unless they have already been heavily disturbed by landscaping and levelling for the playing fields.

7.8 **Saxon Archaeology**

Some potential in the area of the sewage works is indicated by records of a cemetery north-east of the railway (OAU No. 1785) and pottery from the quarry north-east of the sewage works (OAU No. 1535). No Saxon features are reported from the Northfleet villa excavations, lying on the opposite side of the Ebbsfleet stream.

7.9 **Environmental sequence**

The full environmental sequence of the area has never been examined in detail using the full range of modern methods, though much of the work on the pleistocene sequence was highly innovative for its day and has done much (and is still important) in establishing the pleistocene geomorphology of the Thames valley. The Ebbsfleet valley has exceptional potential for studying the complete pleistocene and holocene sequence, the latter having excellent waterlogged deposits and colluvial material as well as alluvial sedimentary stratigraphy. Archaeological records refer to episodes of dewatering associated with the neighbouring minerals workings but it appears that organic deposits have survived, presumably because of the hydrology of the Ebbsfleet itself.

The potential of the remaining pleistocene deposits and the alluvial and colluvial deposits on the valley floor for elucidating the environmental history of the pleistocene and holocene is thus certainly of national if not international importance.

8 SPRINGHEAD ROMAN TOWN (Fig. B7)

The Springhead area has been of interest to antiquaries and archaeologists for at least three hundred years. Much of the earlier work was related to the recovery of objects including a large number of Roman coins and metal implements (Arnold 1889), although there are several 19th-century references to structural remains being unearthed. These included a bath-house found in 1814 (OAU No. 1554), a substantial building in 1864 (Archaeol. Jnl,. 1865), and building foundations in 1889 (Arnold 1889). Early publications were mainly concerned with establishing the site as the *Vagniacis* of the Antonine Itinerary, which is recorded as lying between *Noviomagus* (Crayford) and *Durobrivae* (Rochester). Figure B7 shows the principal recorded elements of the site.

Road widening and realignment in the 1920's and 30's revealed sections of Watling Street and building remains (OAU No. 1857), while a walled Roman burial ground (OAU No. 1551) was discovered in 1801 (Jessup 1959). Springhead was scheduled as an ancient monument in 1954 (OAU No. 1553), encompassing the area of known archaeology together with an area to the west where it was thought at the time that Watling Street ran. The Ordnance Survey still shows the line of the Roman road to cross this field, although fieldwork in the last twenty years has established that its true line runs across the Springhead Nursery to the north (Harker 1980; Smith 1991).

In the 1950's a local group, working under the auspices of the Gravesend Historical Society, began the systematic excavation of Springhead Roman town, as the site had come to be known. This work began with a trial trenching exercise and proceeded to the excavation of five temples, the so-called bakery, a well and a number of smaller features such as kilns and corn-driers (OAU No. 1545). This concentration of features north of the A2 and adjacent to the main temple complex (OAU No. 1553 probably represents the main focus of the Roman town, centred around the spring. This feature, which may have been the head of the tidal stream, was revetted and surrounded by metalling (Burnham and Wacher 1990).

Publication of the excavations took the form of a series of articles in *Archaeologia Cantiana*, the journal of the Kent Archaeological Society. A summary in the 1965 volume presented a plan of the findings to date. W.S. Penn, who directed and published the excavations, died before the work was complete and it was left to Syd Harker to see this phase of the Springhead excavations through to its close.

A summary report, presented in the BAR volume on Roman Temples (Harker 1980), added the results of subsequent years work to Penn's 1965 plan, while other recent appraisals of the Springhead site were presented by Detsicas (1983) and Burnham & Wacher (1990). In recent years the Springhead Excavation Group has continued to be active, observing ground disturbances in the area and undertaking limited fieldwork beyond the limits of the scheduled ancient monument. Kent Archaeological Rescue Unit recently undertook fieldwork, including an evaluation and a subsequent excavation (OAU No. 1566) in the area, to the southeast of the monument, that is at present being developed as a garden centre (Philp & Chenery 1992; Dyson pers.comm.; Smithers forthcoming)

A fieldwalking survey and partial geophysical survey in 1993 covered the scheduled area. The eastern field was found to contain a fairly dense concentration of Roman pottery and tile, mirrored by a similar concentration in the north eastern corner of the larger scheduled area west of the disused railway line. It is in the latter area that excavation has

revealed the remains of the Roman ritual and domestic settlement. Elsewhere in the western field, no concentrations of Roman material were located. In the geophysical survey two previously unknown buildings and a trackway were located in the western field, while the southern edge of the field east of the old railway was shown to contain a number of archaeological features including possible buildings, pits and a trackway.

Excavations in advance of the garden centre on land to the south of the A2 are reported to have uncovered building footings and other features, suggesting that settlement remains extend beyond the edge of the scheduled monument in this eastern section.

North of the A2, fieldwalking for the CTRL has located a well defined scatter, about 75 m in diameter, of Roman pottery (OAU No. 1801). This is a dense scatter of 99 sherds including locally produced shell and sand-tempered early Roman coarsewares, greywares, whitewares and finewares including a sherd of red colour-coat and the rim and base of a Samian bowl. The date of the group is 1st-2nd century AD.

Widening of the A2 in 1964 revealed a further temple (SAM Kent No. 158, OAU No. 1550) located c.450 m to the south-east of the main temple copmplex (OAU No. 1553). Taken in conjunction with the evidence of burials in the vicinity (OAU Nos. 1547, 1551, and 1556) this suggests a degree of non-domestic activity external to the main settlement as shown in Fig. B6, which may also spread down the line of Watling Street.

The limits of Springhead Roman Town are clearly not the same as the boundaries of the scheduled ancient monument. Important remains have been found to the north of the A2, while some of the best preserved deposits are likely to lie beneath the disused railway embankment and possibly may survive beneath the A2 itself. Excavation and publication has concentrated on the unusual complex of temples, with less attention paid to the domestic, industrial, and military remains discovered. The site is clearly of national importance, as indicated by the status of some of its elements as a SAM.

9 COBHAM PARK (Figs B8-11)

Cobham Park is a Grade II* Registered Park (OAU No. 2150), and was originally a deer park dating from the 16th or 17th century. The earliest map of the park in 1641 shows an Old Park round the house, and a much larger area of new park including most of the estate, and stretching from Cobhambury Wood in the south west to a line east of the course of the present M2. This more extensive perambulation was 'park' in that it was enclosed for the preservation of deer, but consisted of enclosed farms and woodland rather than open parkland (OAU Nos. 2147-8). As mapped in 1718, 1749 and 1758 (Figs. B9-11) the central core of old parkland round the Hall (OAU No. 1000) remained much the same, although slightly reduced on the west, and partly extended to the south. The north boundary remained the line of the Roman road, and the east boundary was a sinuous curve just west of Knights Place. Even this contained some woodland, some of which remains today around the Golf Course (OAU Nos. 2152-3). The English Heritage Register of Parks and Gardens includes the whole of this central core within the illustrative map (Fig. B8).

The 18th-century plans supply details of the grounds near the Hall. Immediately to its north was the 'old garden' (c.1718), beyond that 'Windmill Hill' and a series of ponds near the road, where there were also the Dog Kennels (OAU No. 1976, later the Poultry Yard and Slaughter House, all now demolished leaving only fragmentary ruins). Radiating from the west side of the Hall were three avenues, of which only that to the south-west survives (now replanted after storm damage), and a long north-south avenue reaching as far as the road (OAU No. 2192). As mapped in 1749, these were double avenues with four lines of trees, and a great circle just west of the Hall. On the east side of the Hall was an orchard, which by 1758 had a formal garden layout, while the garden on the north was a narrow strip along the front of the Hall.

The landscape was transformed from 1790 by Humphry Repton, who produced one of his Red Books for the new landscape at Cobham, and laid out a series of pleasure grounds in the immediate vicinity of the Hall, together with more distant planting. The avenues were removed, although the north-south line was kept (OAU No. 2192) as the boundary of the northern pleasure ground, replaced by a sunken fence. The windmill hill was extensively quarried for materials for the landscaping and terraces and was turned into a Wilderness, creating the earthworks which were subsequently thought to be of greater antiquity; the four 17th-century or earlier ponds near the north entrance were enlarged and remodelled and slightly extended, by linking the three western most ponds in two (OAU No. 2194). They were supplied with a decorative Engine House (OAU No. 1977) to supply water to the house and gardens and a Fountain house was also built to further utilise this (OAU No. 1975). A lodge was also built at Brewers Gate (OAU No. 1878), now demolished. This was linked to the house by a sweeping drive (OAU No. 2191), still visible as an earthwork, designed to allow the great house gradually to be revealed as it was approached. To the north east of the Hall is an avenue which is first noted on George Russell's 1716 Estate Map of Cobham Hall (Fig. B9). To the south west of this avenue are two ponds (OAU No. 2197) referred to as brick kiln ponds on the same map.

The northern boundary of the park along the line of the CTRL has been affected by widening the A2 from 1924 onwards. Working from west to east, in the first section, between Halfpence Lane and the link over the A2 for Brewer's Road (west of the site of Brewers Gate (OAU No. 1878)), a bank (OAU No. 1969) survives parallel to and south of the old Watling Street lane with an amorphous ditch or series of hollows on the north

side. This might represent part of a park pale, but on 25" OS plans is showing as turning south before it reaches the western side of the park. It may mark the northern end of an area along the western side of the park which is shown as a separate field or paddocks and areas of plantation or woodland on 18th-century and earlier maps. A building (OAU No. 1859) is shown in this area on an estate map of 1758 (but not earlier ones). Another possibility is that the boundary is of greater antiquity still. Remains of the early 19th century iron eight-bar deer fencing c.2 m high survive along the south side of the lane itself.

In the second section, east of Brewer's Road, the deer fencing recurs, forming a dog leg round the site of Brewer's Gate lodge before heading south alongside the ponds and The Wilderness, approximately on the line of the earlier avenue (OAU No. 2192), to divide Repton's Pleasure Grounds from the western part of the park. The deer fencing between the Pleasure Grounds and the eastern part of the park starts from the south east corner of the southern pond and skirts the foot of The Wilderness. Along the northern boundary from the site of Brewer's Gate to a point level with the poultry house, the original boundary of the park has been modified since 1933 by the rebuilding of the lane along the foot of the embankment for the A2. It does not appear to have encroached significantly into the park.

The third section of intact boundary is from the poultry house eastwards to the point where the old Watling Street lane has been diverted south alongside the A2 on the edge of the golf course. This section is marked by the survival of the lane as a deep hollow way with simple iron posts and wire fencing marking the boundary of the park. North of the lane, in a narrow sliver of ground next to the A2 is a sometimes prominent bank and hollows visible under an old woodland ground flora. These appear to represent the former southern edge of Brewer's Wood (or a shaw extending east from it), severed from the main body of the wood by the A2. Also east of the poultry house is a marked lynchet within the edge of the park south of the lane aligned on the easternmost portion of the lane. This may have resulted from the use of the area to the south as 'Dog Kennel Field' in the early 18th century, but it is possible that the alignment reflects the original line of Watling Street before the sinuous alignment around Brewer's Gate was established.

The eastern part of the park is now occupied by the Cobham and Rochester Golf Club, but includes a series of wooded areas which are recorded on historic maps and the original OS Surveyors' drawings (OAU No. 2152). Cole Wood (OAU No. 2153) forms part of this group of woodland areas within the park, but was very much smaller in the 17th and 18th centuries, the main body of 'Coal' Wood being further east, north and east of Knight's Place. The present woodland consists of mixed broad-leaved species, including a number of massive sweet chestnuts, with several examples up to 2 m in diameter, which may survive from when the wood was more open parkland in the 17th and 18th centuries. A concentration of massive chestnuts south of the golf club house, however, may be the remains of a rectangular area of woodland, shown on both the 1641 and 1758 Cobham estate maps, to the west of what was then known as 'Coal' wood. The eastern boundary of Cole Wood is the edge of the Registered Park and is marked by a further section of the eight rail c.2 m high metal deer fence, probably dating from the Repton period of work on the park. The area safeguarded for CTRL contains several large hollows, up to 20 m across and 1.5 m deep, almost certainly the silted up remains of early quarries. There are also various small mounds and a wide low bank of uncertain origin within the wood.

The most important part of the historic landscape is the area of the Repton Pleasure Grounds near the house, extending northwards as far as the Wilderness, and including the line of the avenue to the south-west. While long-distance views across the park are restricted, the character of parkland survives and includes planting by Repton. The historic woodland and rides within the park, the mausoleum and other features are also key survivals. The pattern of fields within the parkland landscape is a further historic feature, though one whose pattern has changed with time.

10 WHITE HORSE STONE (Fig. B12)

The Upper White Horse Stone (OAU No. 1051) belongs to a tightly-knit group of neolithic tombs known today as the Medway Megaliths (Fig. B12). The other members of the group are The Coffin Stone, Kits Coty House (OAU No. 1065), Little Kits Coty, and the now lost Lower White Horse Stone (OAU No. 1053) and Smythe's Megalith (OAU No. 1585). Of these the former two are reasonably likely to represent ruined or destroyed tombs, while the White Horse Stone itself and the latter pair are more dubious. Together with more distant tombs: Addington Long Barrow, The Chestnuts and Coldrum, all these sites form the Medway Group which has no parallel east of the Berkshire Downs - indeed, they are virtually the only visible monuments of the first farmers in Kent.

Although the Medway group has attracted considerable academic attention (Holgate 1981a, b; Ashbee 1993) only one site - The Chestnuts - has been excavated to modern standards apart from trial trenching by OAU at Little Kits Coty (OAU 1991). Our understanding of the group is therefore poor, and heavily reliant on the earlier observations of antiquaries (Stukeley 1766; Surtees Society 1883; Thorpe 1788). A potentially important archaeological factor is the probable existence of colluvial (hillwash) deposits in the coombe north of the White Horse Stone. These could provide both a detailed record of the changing character of the landscape and possibly well preserved sites deeply buried beneath later hillwash. The sub-surface archaeology in this area is very important. Flint scatters and crop marks suggest prehistoric sites, while scatters of pottery and other finds are probably indicative of Roman and later sites.

The Upper White Horse Stone (OAU No. 1051) is a scheduled ancient monument (Kent No.17), consisting of a large upright sarsen in a broad hedgerow next the Pilgrim's Way with smaller fragments nearby. As it stands upright it is very reminiscent of a chamber stone wall, and the outline of a possible mound may be detected in the hedgerow, if desired. The site has never been properly excavated.

It was thought that this monument may represent the remains of a megalithic tomb, with the smaller stones surrounding it representing either broken pieces of the tomb, or the *in situ* remains of a burial chamber beneath a mound, or they could just be stones picked up from the nearby fields. An alternative theory is that the stones were originally placed here as markers along the Pilgrims Way or as part of the Ashford-Boxley parish boundary. Recent theories have tended to believe that the stone seen today (the Upper White Horse Stone - OAU No. 1051) is the successor to the original (Lower) White Horse Stone (OAU No. 1053) which originally stood at the opposite angle of the cross roads to it, and that the Upper stone has attracted the legendary history of the Lower one. The Upper White Horse Stone has retained both the name and tradition of the original and the fact that it is not the original does not detract from the significance of the site or its place within the ritual landscape.

The manner in which certain monuments occur as groups (e.g. the Avebury area) has given rise to the idea that whole areas of landscape, and not just individual sites, may have been regarded as 'sacred' in the prehistoric period. The area under discussion here is a possible candidate for a 'sacred' landscape of this nature, though the monuments concerned appear primarily to be of a funerary rather than a ceremonial nature. Settlement activity was not precluded from such 'special' areas, and work around Stonehenge and Avebury, and in the Thames Valley has shown how, if anything, these areas attracted settlement activity. 'Settlement' at that period was generally of an often

transitory and ephemeral character, repeatedly returning to favoured locations. There remains in the present landscape some hint of this prehistoric integrity, both from the megaliths and from the tracks and pathways which link them. The backbone of this network is the Pilgrims Way (OAU No. 1052) on which lie both of the White Horse Stone sites; it is likely to be a trackway of prehistoric origin, while many of the other routes could date back to the pre-Roman period.

11 BOXLEY VALLEY HISTORIC LANDSCAPE (Fig. B13)

Boxley Park and the historic landscape around it occurs to the east of Boxley Abbey (OAU No. 1055) the only Cistercian house in Kent. The Abbey, in use from 1146 to 1530, is a rare survival of a monastic foundation with its precinct wall completely intact. The only building which survives of the Abbey itself is the Grade I 'barn'.

The origins and exact boundaries of Boxley Park (OAU No. 2023) are not entirely clear. The evidence of estate plans and deeds has briefly been examined to try to elucidate this, but there is a fairly complex series of property exchanges and land divisions which make it difficult to determine details, especially since acreages attributed to recurring names vary widely. It is possible that there was a large area of park belonging to the Boxley Abbey estates, or it may have been created by the first secular landowners after the Dissolution. The Park is mentioned in a deed of 1596 which refers to 'Lea Park' and 'Park Wood alias Boxley Park' though its bounds are uncertain (Rochester Archives, Best Collection.). The general topography of boundaries, later maps and the occurrence of a number of 'Lodge' names around the park may indicate its extent as shown on the EFM. The earliest estate plans show a smaller area as Boxley Park which extends as far north as Park House and the northern edge of Park Wood (East) (OAU No. 2024), and as far east as the east boundary of Beulah Wood. The plans of 1697 and 1743 show field boundaries largely conforming to those still present or visible as earthworks. The pond (OAU No. 2098) just south of Park Wood (East) was there in 1697, while Beulah Wood was then called 'New Wood'. The land with the traces of ridge and furrow around the Stonehouse was probably arable then, while the lower ground nearer Park House was meadow.

The present Park House is not on the original site (OAU No. 1863) which was closer to the old Boxley Road (OAU No. 1222). In the 19th century the parkland landscape was created in something like its present form by the Best family who moved there from Chatham. The poet Tennyson was a frequent visitor to the park, where his sister lived. Specific features of the layout survive in the two fishponds (OAU No. 2088) and more generally in the planting which includes some fine native trees. This is not a very formally designed parkland (and it is not registered as such) but it contributes very significantly to the surviving landscape quality of the area especially when one compares this area with that to the west of Boarley Lane and to the east of Boxley Road where to a great extent most of the hedges and old field boundaries have been removed. The area between the Abbey and the Park still retains some of its historical integrity as seen by a number of field boundaries and the survival of 'Park Wood'. The complex history of the area is thus detectable within the surviving boundaries, earthworks and other features.

12 THURNHAM ROMAN VILLA (FIGS B14-15)

The site of this scheduled ancient monument (OAU No. 1061) (Fig. B14) has been partially excavated at various times, the earliest recorded excavation being in 1833. Two tessellated floors were excavated in 1933, at Parsonage Farm, Thurnham (Collingwood and Taylor 1934).

In 1958, an excavation was undertaken for the Ministry of Works at the villa site. The investigation was limited to the route of the Maidstone By-pass. Two sites, A and B were excavated (Price 1960) (Fig. B15). Site A revealed a building which contained three apsidal rooms, with occupation material of the first to fourth century, and with signs of reconstruction in the second century. Site B was an outbuilding which had been much robbed.

Site A (Fig. B15)

The first phase of construction of the ragstone building appeared only to cover the central rectangle consisting of an anteroom and three main rooms. The second phase of building was an adaptation of the above built late in the second or early in the third century. The three apses must have been contemporary with the reconstruction because their ragstone walls were not bonded into the earlier building and the alignment was also different.

Site B (Fig. B15)

The building on this site appears to be the robbed remnant of an outbuilding. The main structure consisted of ragstone walls with a flint core. There was evidence of only one period of construction and occupation within the two long rectangular rooms.

The absence of any finds of ornaments or personal possessions within these two areas probably indicates that the area was not part of the main living quarters of the villa. The building on Site B was probably just an outbuilding of the villa. Air photography by RCHME in 1990 has revealed the plan of the building on Site A suggesting that it was an aisled building about 30 m long and 15 m wide. Faint cropmarks north of the main building may indicate another small outbuilding, but this is not certain. It would appear that this is a modest farmhouse-type villa, with a few outbuildings.

13 BROCKTON FARM, BARN ETC.

13.1 Brockton Farmhouse, Charing Heath - (OAU No.170, Grade II listed)

Grade II listed, at south end of Charing Heath, with barn, oast and other outbuildings. Brick with tiled roof; square plan made of two blocks with separate roofs; various extensions to south. The brickwork has similar rubbed brick voussoirs on the windows and an offset plinth in both parts.

Interior: Groundfloor. The western block appears to be timber-framed and clad in brick: the walls are thicker than would be expected for brick construction, and are not solid internally. Three-room plan with large brick chimney-stack, the northern room with a large fireplace and chamfered ceiling joists of small scantling morticed to a larger transverse joist. The other two rooms have a central beam running south from the chimney-stack (ovolo-moulded in centre room), but no other joists or features are visible (the southern room is heated by a stack in the south wall, but the ceiling joists suggest that this end has been extended or altered). The original entrance may have been in the east wall opposite the chimney-stack.

The eastern block may have been added in several stages: the southern end is separated off by a lightly framed wall, and is constructed over a *cellar* with stone walls and brick alcoves, and brick drains in the floor. The passage between the front and back doors (containing the staircase) is within the eastern block, and may represent the site of a former outshut; it has a framed partition dividing it from the rest of the eastern block, though its original form is obscured by the addition of reused timbers with mouldings, and false bracing of modern date; a brick floor and large chimney-stack in the south wall suggest that this may have been a kitchen. Beyond this to the east is the present kitchen, built as an outshut to the eastern block, beyond which is a single-storey outer room, possibly a dairy or washhouse, now converted to a garden room.

First floor. As on the ground floor, the walls of the western block are evidently timber-framed, though little of this is visible apart from the ceiling joists, some framing beside the chimney in the central room, and a jowled wallpost in a cupboard at the top of the stairs. The rooms in the eastern block have few diagnostic features, apart from some original casement windows.

Roof. The roof of the western block is largely obscured by paper sacking, but appears to be of one build, with tall A-frames, the slim collars clasping light purlins, and the common rafters of small scantling (c.12 x 12 cm) The framing of the ceilings and partitions appear to be contemporary with the chimney-stack. The roof of the eastern block is similar, of even lighter softwood construction, but still with clasped purlins, and the ceilings supported on a series of diagonal joists running the length of the roof between the ties.

Assessment

The original, western, block appears to be a timber-framed house of three-room plan built round a brick chimney-stack in the early 17th century. This may be a building of unexceptional type, but the amount and quality of framing that survives cannot be determined without complete stripping and detailed investigation of the internal wall surfaces, and no decision on the future of the building can be taken without this being

completely revealed. Although apparently extended in more than one phase, the construction of a brick eastern block seems to have been the occasion for the cladding of the timber frame, to produce a more regular external appearance. This perhaps took place in the early 19th century, and the further extensions may have been made then or later.

13.2 **Brockton Farm Barn, Charing Heath - (OAU No.171, Grade II listed)**

Timber-framed barn to north of Brockton Farm, with attached byres/sheds. Weatherboarded, with thatched roof.

Aisled timber-frame, with long downward braces to aisle posts, and plain A-frame roof, not dissimilar from that in the adjacent farmhouse. Central threshing floor with boarded partitions. The byres have some original timber fittings of vernacular form and clasped purlin roofs.

Assessment:

Probably contemporary with the farmhouse, or of about 1700; extensions original, altered probably in 19th century.

13.3 **Other outbuildings (unlisted curtilage buildings)**

Shed between house and barn
Of brick and stone, roofed in two parts internally with ?pigsty in E half, walled-off by low stone wall and with low entrances in E wall. Probably 19th-century.

Shed to north of barn (OAU No. 385)
19th-century stable on east side of former farmyard.

Garage next Oast
Either a traditional framed cartshed reroofed, or a 20th-century creation from another building, on north side of former farmyard.

Stable north of house (OAU No. 172)
Stable, now collapsed, of c.1700 on west of former farmyard. When visited in 1993 observed to be brick with timber loft and well-made butt-purlin roof (purlins in line and not staggered; common rafters in two lengths, pegged to purlin); central tie parted from wall-plate, and wall turning out. Traditional fittings in stalls and lofting, and wooden pegs for harness hanging on east wall.

14 YONSEA FARM, FARMBUILDINGS ETC.

Historic farm site (name recorded in 13th century), rebuilt as model farm in c.1830 by Strouts family (whose son Fred Strouts, 1834-1919 went to New Zealand and became a notable architect).

14.1 **Farmhouse** (OAU No. 193, Grade II listed)

Rendered brick double-pile house of c.1830, with porch and pediment on front, brick pilasters at the corners and overhanging eaves below slate roofs; triple sashes on the front elevation. At the rear a two-storey service wing, and a single-storey kitchen wing that may be a later addition. *Interior* features plain but of good quality: marble fireplaces and panelled doors, central stair without decoration, but moulded beams to drawing room. The *roof* is of softwood, with clasped purlins. The *service wing* is a remarkable survival, with a cast-iron range in the fireplace flanked by a large brick oven on one side and a double copper on the other, and a stone sink. The whole room is unplastered, in pink washed brick. Outside the back door are a small brick and slate coalshed and store.

14.2 **Oast House** (OAU No. 194, Grade II listed)

Double brick oast at end of barn, built together c.1830 (continuous plat-band at first floor, and dentil eave cornice below slate roof). Two store rooms below, with open storage area above having a king-post roof raised on cranked tiebeams; at the end of this a pair of doors lead into the oasts. These are unchanged, with open floor and plastered roof. The oast forms the north side of the walled kitchen garden, partly surrounded by a moat, which may represent the nucleus of the medieval farm.

14.3 **Bungalow** (OAU No. 196, Grade II listed)

Small square single-storey brick cottage with pyramidal slate roof and central stack, of c.1830. Central door and two windows on front, two casement windows at back. The cottage faces onto a lane and is reputedly a former Toll cottage, but even though the road alignment has moved in the length past Yonsea, it is difficult to see why there should have been a toll house at this point.

14.4 **Granary and cartshed** (OAU No. 195, Grade II listed)

Granary of c.1830, built into the brick wall along west side of the farmyard, with two long walls of brick and the short walls timber-framed, open on the north for cart access. Stout double-framed ceiling with posts and knee-braces to each principal joist; upper door in large dormer with external platform for hoisting. A cartshed extends along the wall to the north of the Granary.

14.4 **Beast yard** (OAU No. 198, Grade II listed)

Byres in L-shape on south and west of central yard, with brick outer walls and inner timber frame facing yard, and pitched slate roofs. King-post roof trusses and many original pens and feeders. At the north-west corner is a small brick and slate barn with an upper floor (roof not seen); on the east side of the yard is a ruined animal pen and a lean-to brick shed with a timber front, containing timber stalls and possibly a stable.

14.5 **Barn Yard** (OAU No. 197, Grade II listed)

Next to the road is a large barn of brick and weather-boarded timber-framing, of c.1830, flanked by an unlisted original cart shed on one side and an unlisted 20th-century barn on the other (probably a replacement). The cart shed has a belt-driven drive shaft in it. The barn, which has a framed porch on the east side, has substantial framing, with diagonal wall braces, and a king-post roof also with clasped purlins. There are solid curved knee-braces to the tie-beams, similar to those in the Granary.

14.6 **Entrance Yard** (OAU No. 283, unlisted)

The gated yard that leads to the barn porch and the north side of the house has one L-shaped range of timber-framed buildings in the north-east corner, animal byres possibly cowsheds, of the same general character as the other sheds of c.1830.

14.7 **Assessment**

These are all individually Grade II listed buildings, with the exception of the outbuildings of the farmhouse, the cart-shed by the barn, and the range in the entrance yard; these are, however, curtilage buildings. This well-preserved and unusually complete set of buildings dating from the early 19th century is rather unusual for Kent.

15 WILLESBOROUGH, NOS. 2 & 4 BOYS HALL ROAD

15.1 2 Boys Hall Road - (OAU No. 210, Grade II listed)

Small house next to existing railway line at Crow Corner Bridge. Rubble stone walling on ground floor and gable ends, tile-hung over framing on first floor, tile roof. Outshut to north side gives a square plan.

Interior: Two-bay plan with central stack and jettied front to north, covered by outshut. The *outshut* now contains kitchen and bathroom, etc. The *framing* of the visible walls, ceiling and jetty is plain and of modest scantling, with short chiselled carpenters' marks. The post below the centre of the jetty has a long straight jowl, and the ends of the jetty joists are cut back square as if for a fascia board. The central *chimney stack* is of brick, with a large fireplace (and oven on the south) in the principal *west room*, and a smaller fireplace in the east room. The ceiling of the west room has been replaced in the southern half (with a reused wallplate), but the whole appears to be integral with the framing, i.e. the room was not an open hall.

A stair, probably modern, rises behind the stack in the eastern room to the *first floor*, which is ceiled above the level of the tie beams, the central tie being truncated for a door. The tie in the west wall is a former tie or wallplate, turned through 90 degrees and showing mortices for a window with timber mullions.

The *roof* has reused rafters of medieval proportions, but the trusses are later. The apparent soot-blackening seems likely to be a modern preparation applied to the beams by the former occupant in the 1950s. The central truss has mortices for struts to the tie beam, and a collar beam clasping the side purlins. The roof is hipped, with a true hip apex only at the east end, and some evidence for alterations at the west end.

Assessment

As all the components appear to be contemporary, probably of one build, c.1600, with reuse of medieval rafters from another building. The roof and two-bay plan may indicate the existence of a former third bay at the west end, though this could only be established by excavation.

15.2 4 Boys Hall Road - (OAU No. 209, Grade II listed)

Immediately west of No. 2, another house beside the railway line, where the SER cut through the village of Willesborough and truncated the lane which ran past the front of this house. According to the present occupants, this was a single-storey cottage until c.1895 when the upper floor was added.

Brick and tile hung. No features on the ground floor indicative of date earlier than 19th century. Three room plan cottage with stair from kitchen at one end.

Assessment

Original cottage possibly older than 1800, but no diagnostic features are visible, remainder of c.1895.

16 TALBOT HOUSE (FORMER RAILWAY COTTAGES)

Talbot House, Ashford Road, Sellindge - (OAU No. 247, Grade II listed)

Four-bay late medieval Wealden house (timber framed) facing south to existing railway embankment. *N side exterior:* exposed framing on 1st floor, underbuilt in brick; entrance door to screens passage with solid E jamb and arch, replaced on W.
S side exterior: end wings jettied out but now underbuilt; recessed central hall tile hung and underbuilt, but central bracket to flying plate visible in wall-space.

Interior, E end: present kitchen is 'upper' end, with ceiling joists running out to the jetty in the S half, but running E-W in the N half (and with trimmer on N side for former stair to best room), and former door from hall in NW corner.

Hall: open hall now floored in and with brick stack; original features include moulded dais beam at E end (crenellated, rolls and hollows) above screen of plank and muntin panelling, with mortice for spere (screen against former door to stair in NE corner); and holes in posts below dais beam for pegs to hold bench for high table. Inserted floor is well made with all joists chamfered, run to bridging joist along centre of room which itself tenons into the joist before the fireplace (with double tenon and diminished haunch). The ceiling joist in front of the stack has mortices for studs at each end, and larger mortices for posts on either side of the fireplace, suggesting that there was a framed smoke-bay before the stack was built. The brick stack does not fill the remainder of the hall but has left space for the screens passage behind it.

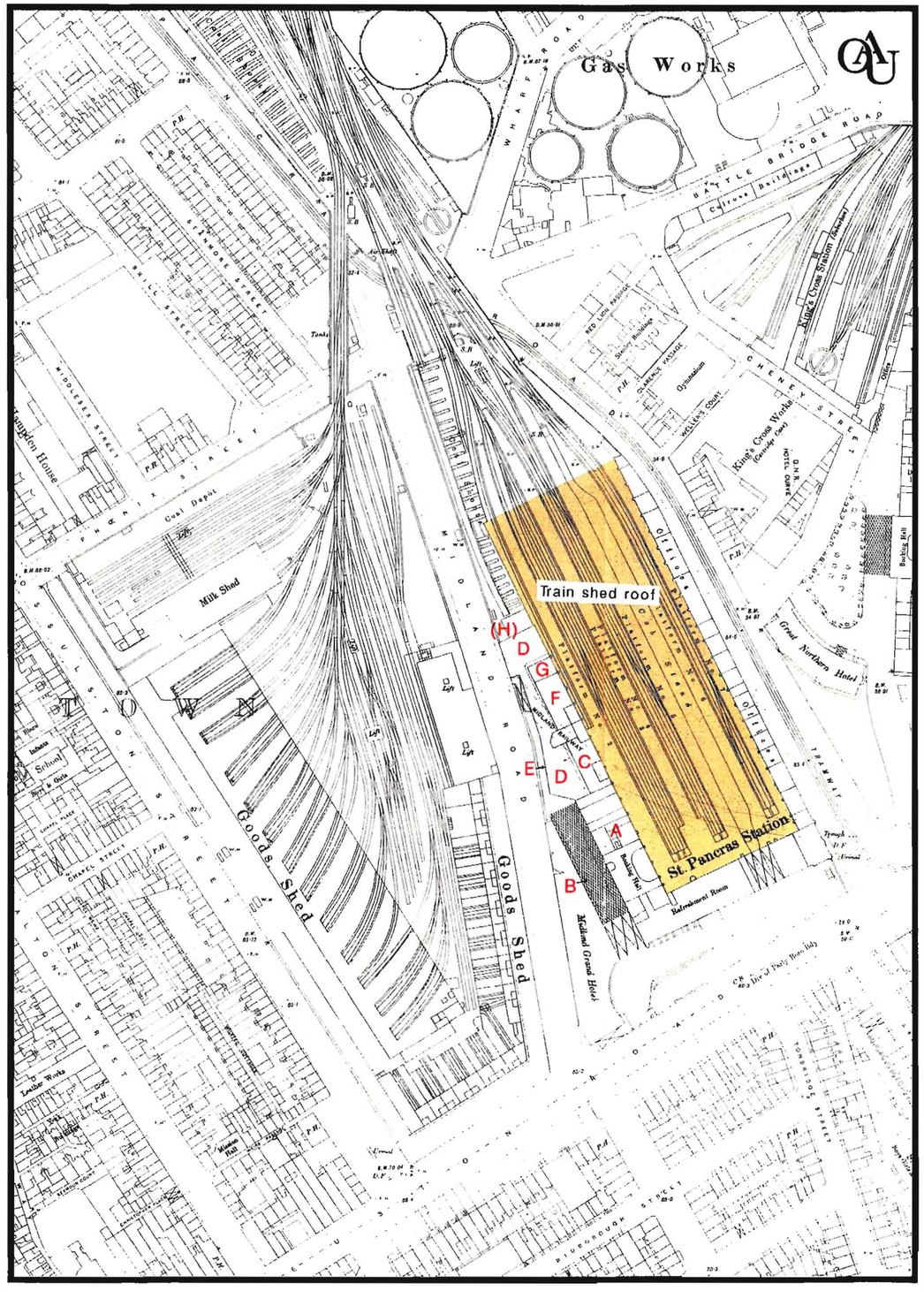
W end interior: the ceiling joists run out to the jetty on the S side, but have been replaced on the N side. Above the S door is a hole in the wall in which the interior of the tile-hung area can be seen across the recess for the hall.

First floor: In each end room the downward braces on the partitions can be seen in the centre of the wall, with the base of the crown-post above off-centre to the wing (but centred for the hall, which is less deep). The central tie has been cut back to the wall (thus no surviving crown-post), and the next tie W has a door cut through it. The central room has a brick fireplace. On the E stair the end of the hall top plate can be seen.

Assessment

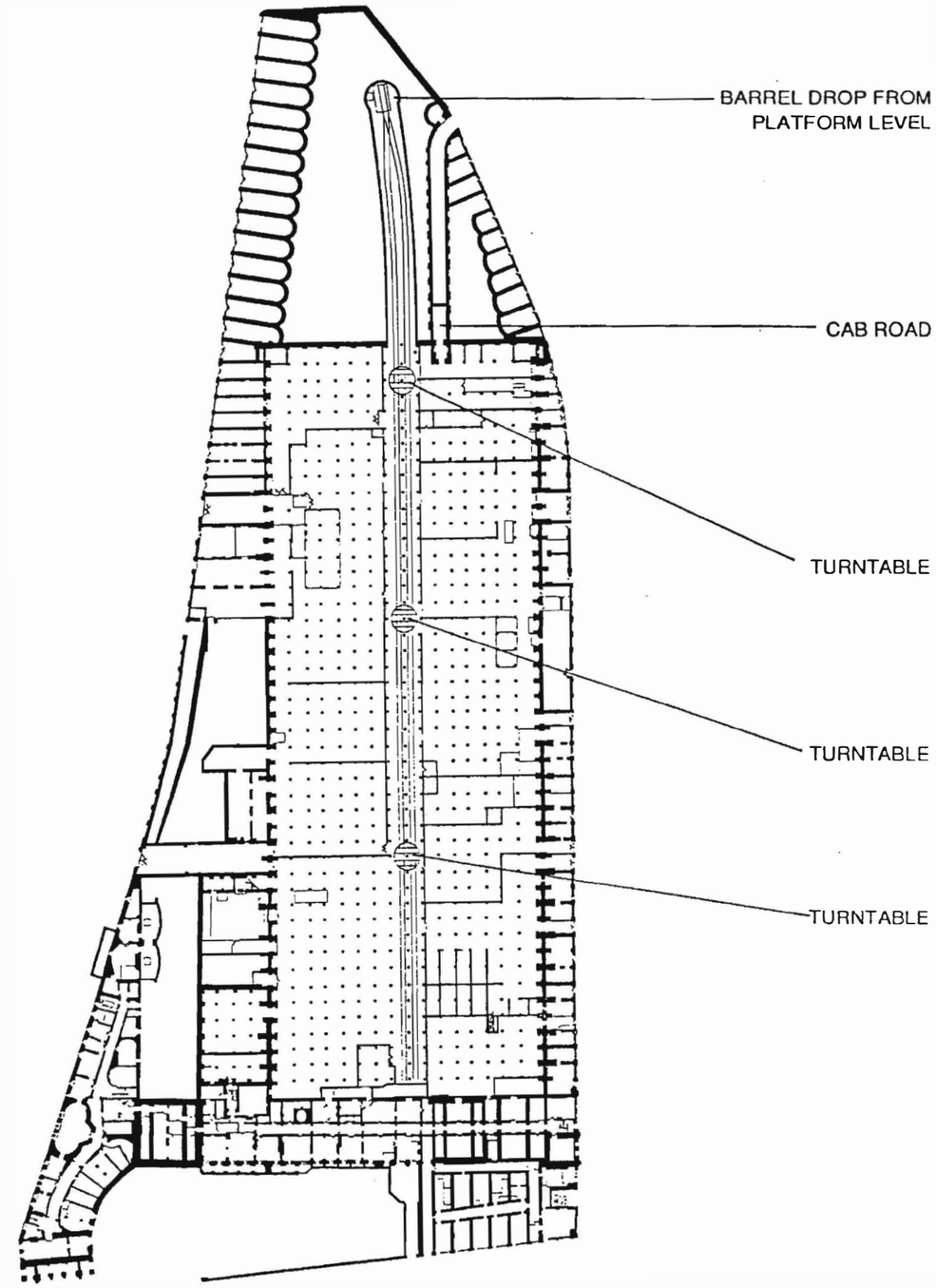
A substantial framed house, probably of mid 15th-century date, with much of its original framing intact. It underwent a two stage conversion of typical post-medieval type first by the insertion of a first floor over hall and timber smoke bay (say c.1550), and then by its replacement with the brick chimney stack (say c.1600) Not a first-rate building in the Kentish context, but a good example of its kind, with well-preserved features such as the hall screen.

FIGURES B1 to B15



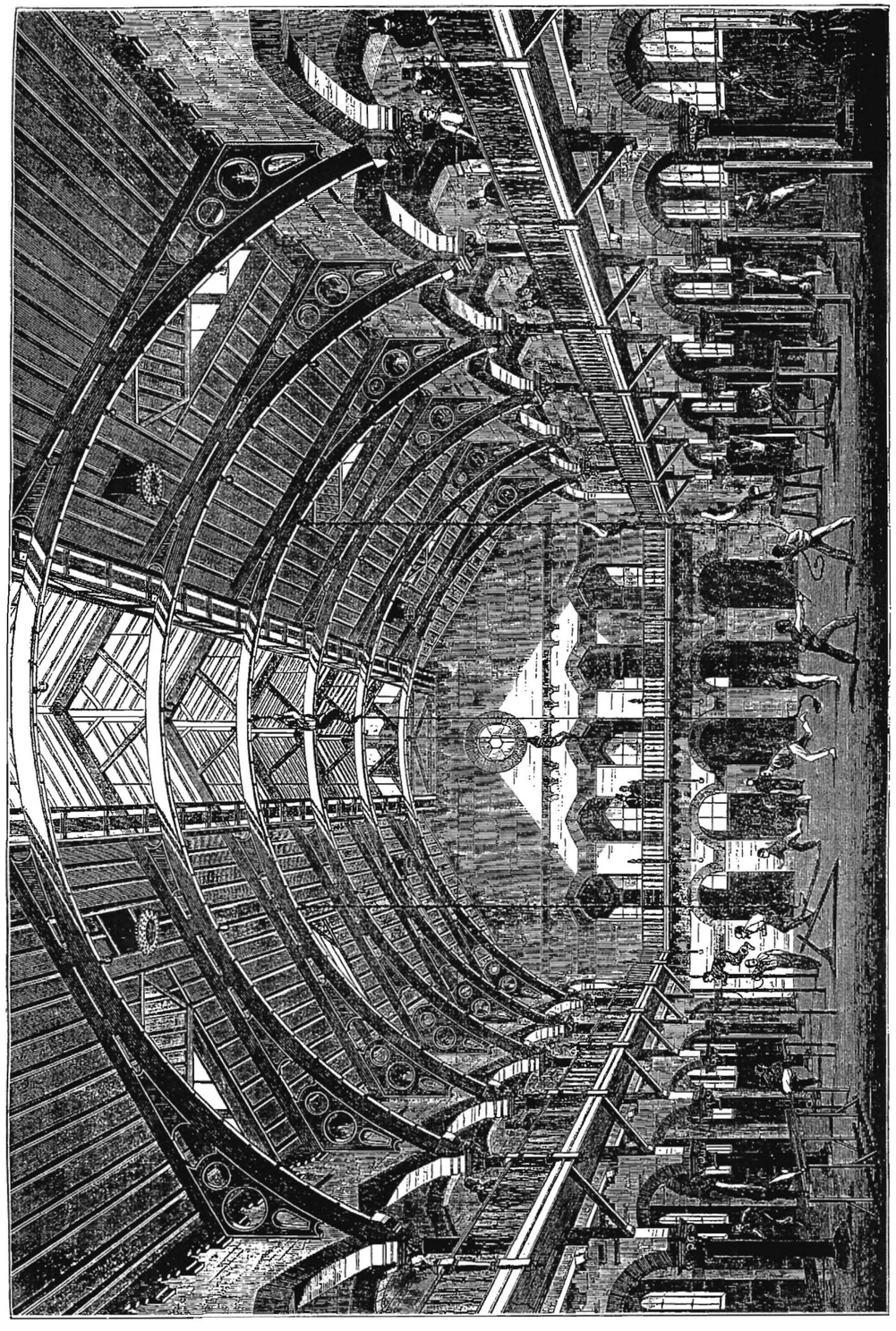
St Pancras Station in 1895

Figure B1



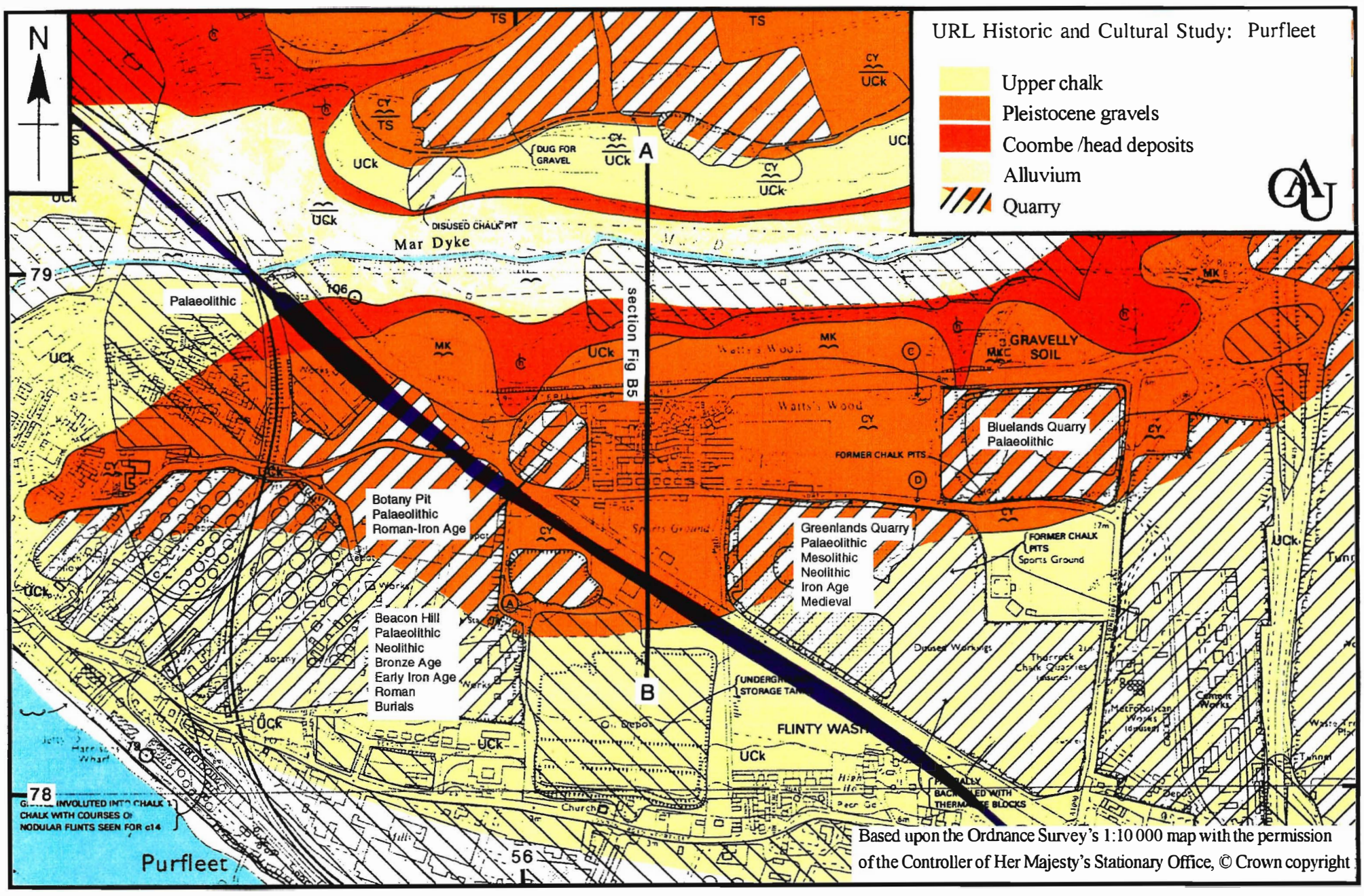
St Pancras Station undercroft

Figure B2



The German Gymnasium, *The Builder*, 19th May 1866

Figure B3


URL Historic and Cultural Study: Purfleet
Upper chalk
Pleistocene gravels
Coombe /head deposits
Alluvium
Quarry
N
TS
UCk
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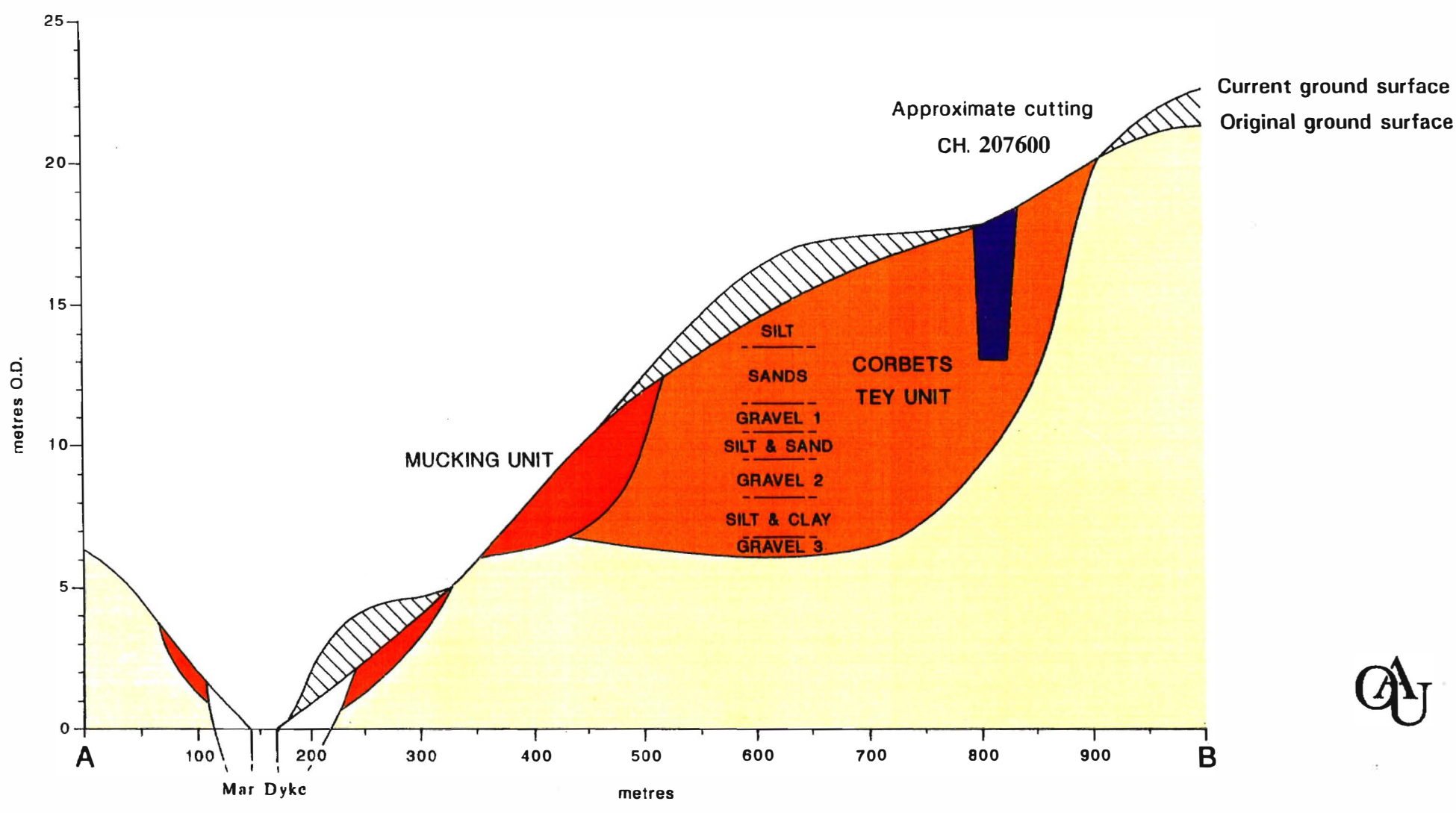
DUG FOR GRAVEL
DISUSED CHALK PIT
Mar Dyke
Palaeolithic
section Fig B5
A
B
MK
GRAVELLY SOIL
Watts's Wood
Bluelands Quarry
Palaeolithic
FORMER CHALK PITS
Botany Pit
Palaeolithic
Roman-Iron Age
Greenlands Quarry
Palaeolithic
Mesolithic
Neolithic
Iron Age
Medieval
FORMER CHALK PITS
Sports Ground
Beacon Hill
Palaeolithic
Neolithic
Bronze Age
Early Iron Age
Roman
Burials
FLINTY WASH
Purfleet
79
78
56
Based upon the Ordnance Survey's 1:10 000 map with the permission of the Controller of Her Majesty's Stationary Office, © Crown copyright

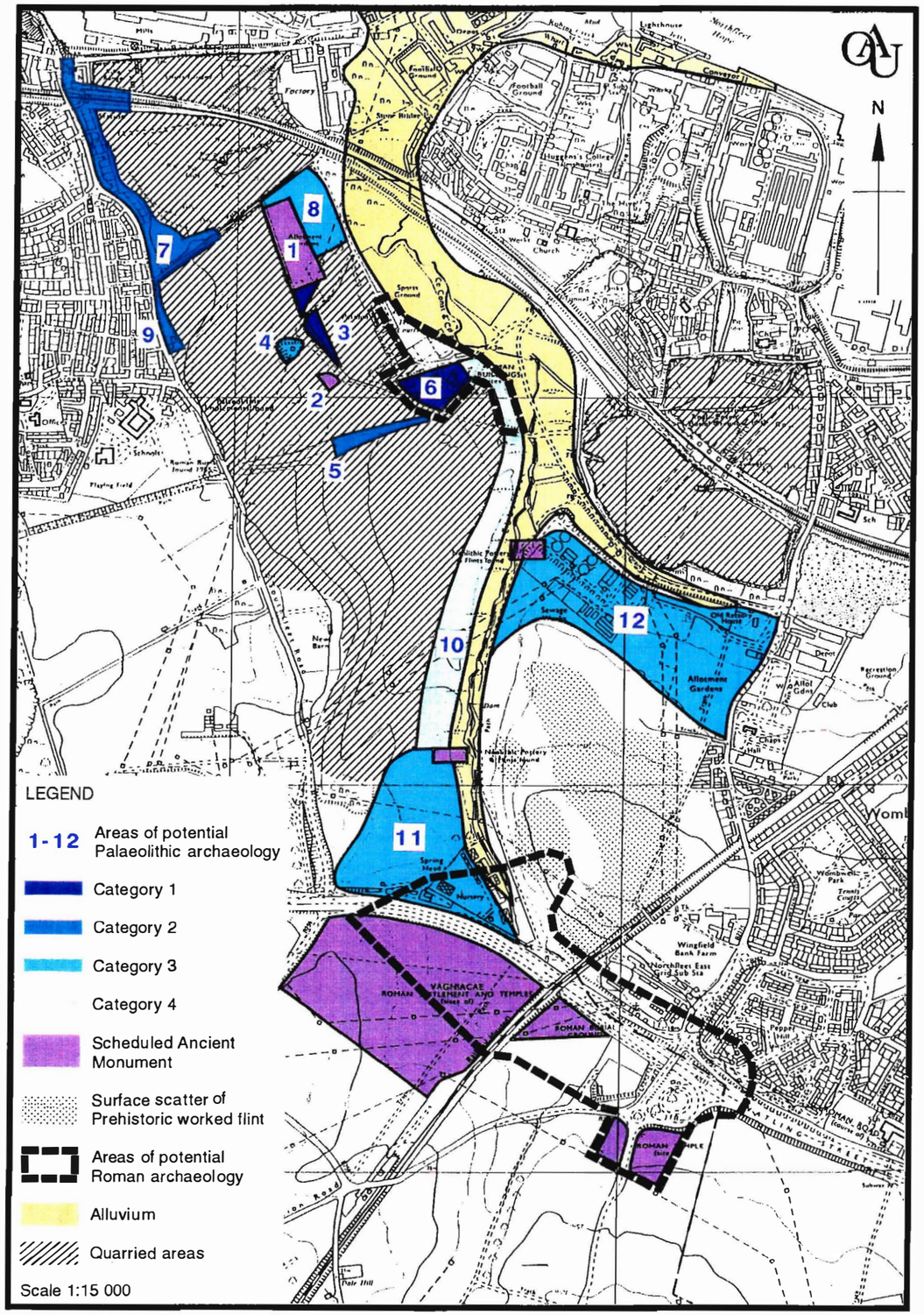
Figure B4

URL Historic and Cultural Study: Purfleet



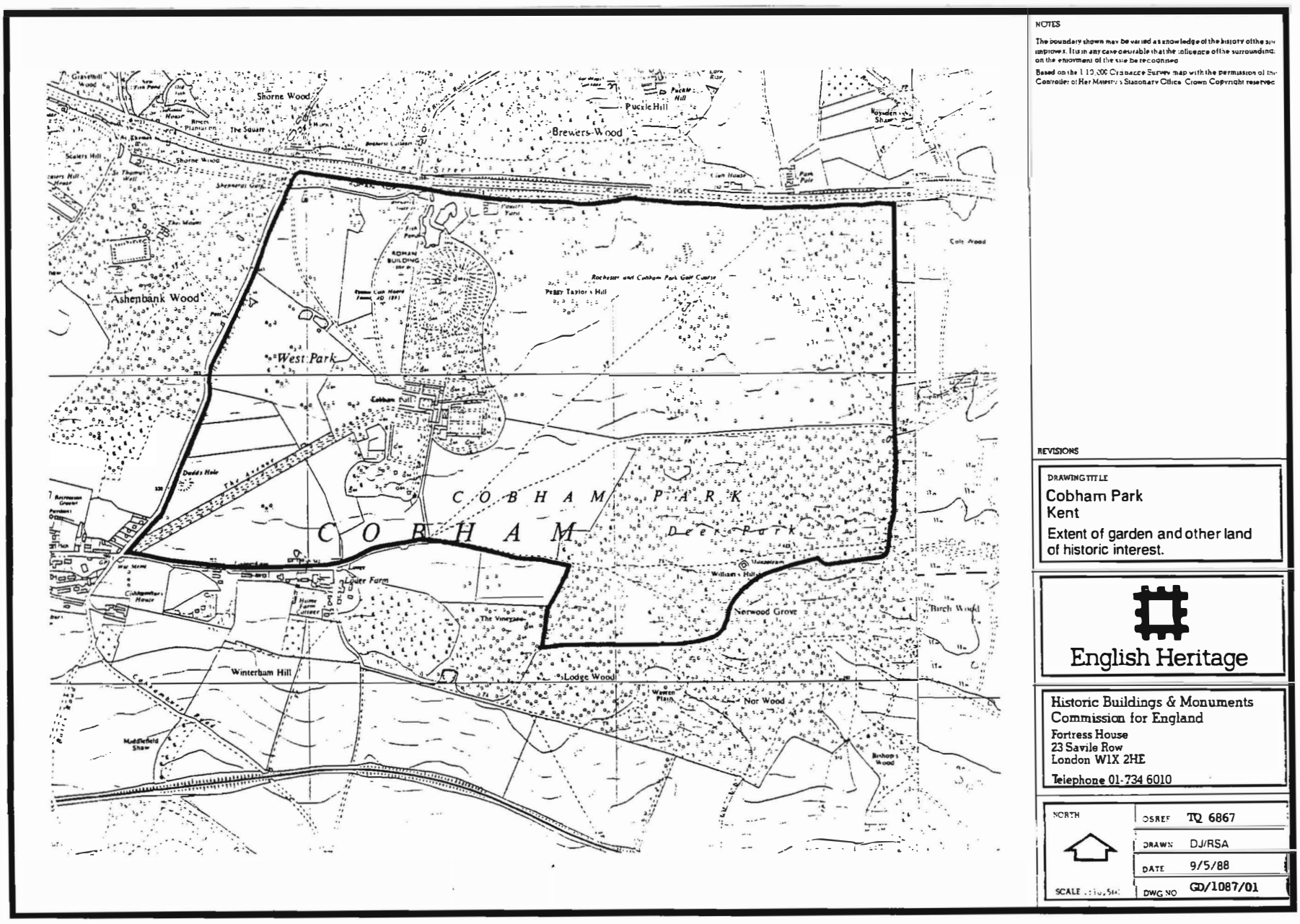
Schematic cross section through the Purfleet Valley

Figure B5



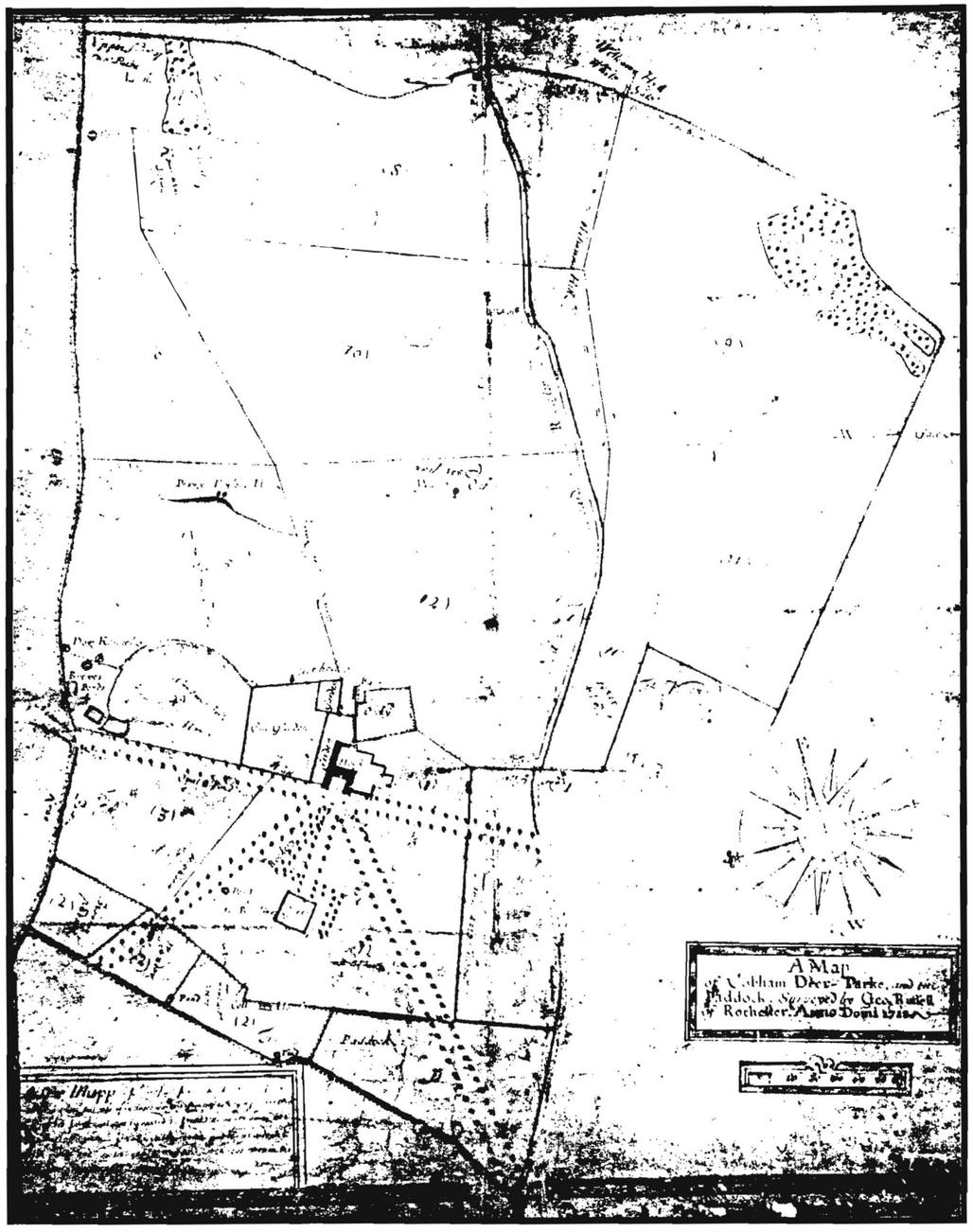
Ebbsfleet Valley: Areas of archaeological potential

Figure B6



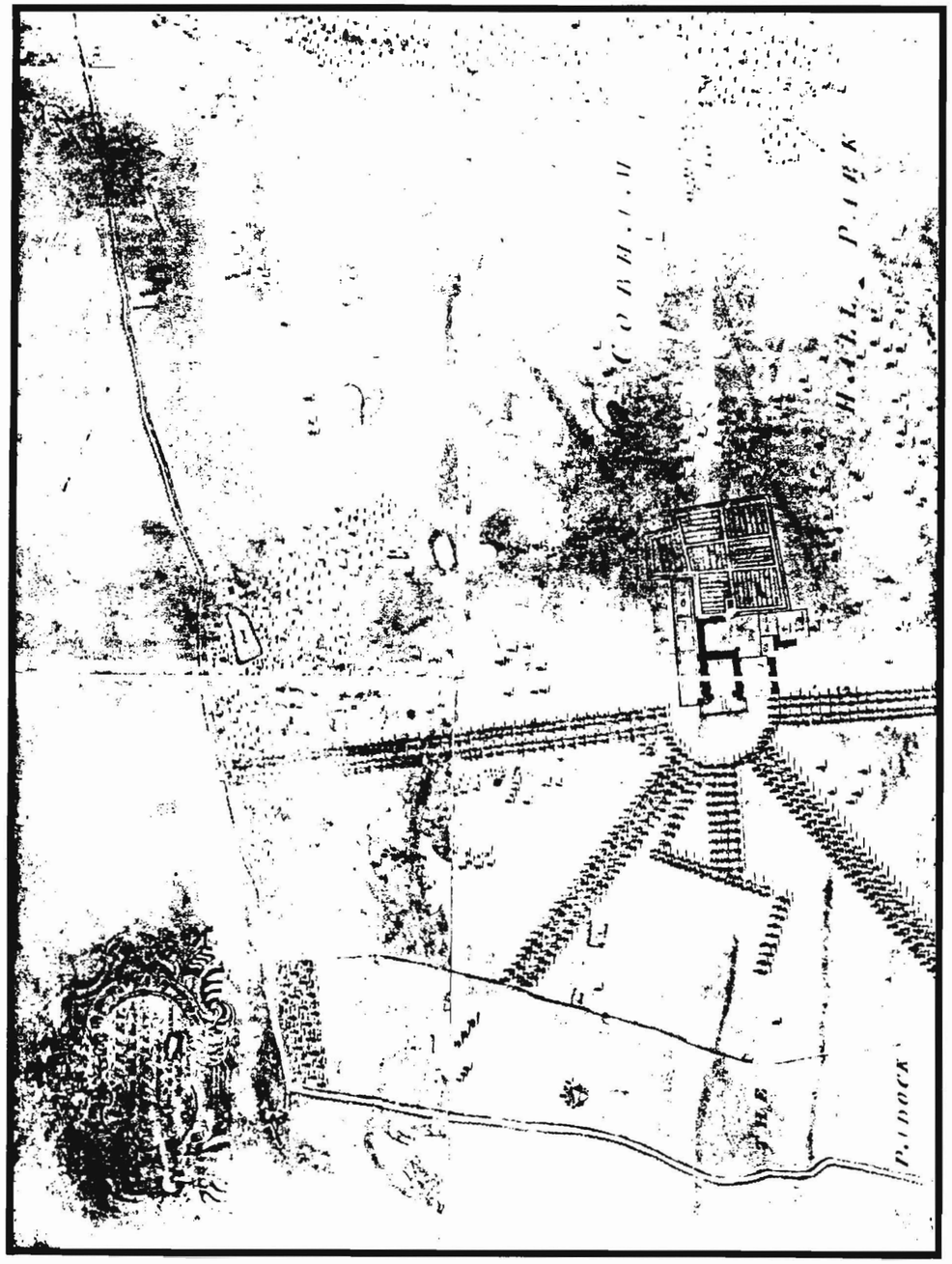
Extent of English Heritage Registered Cobham Park

Figure B8



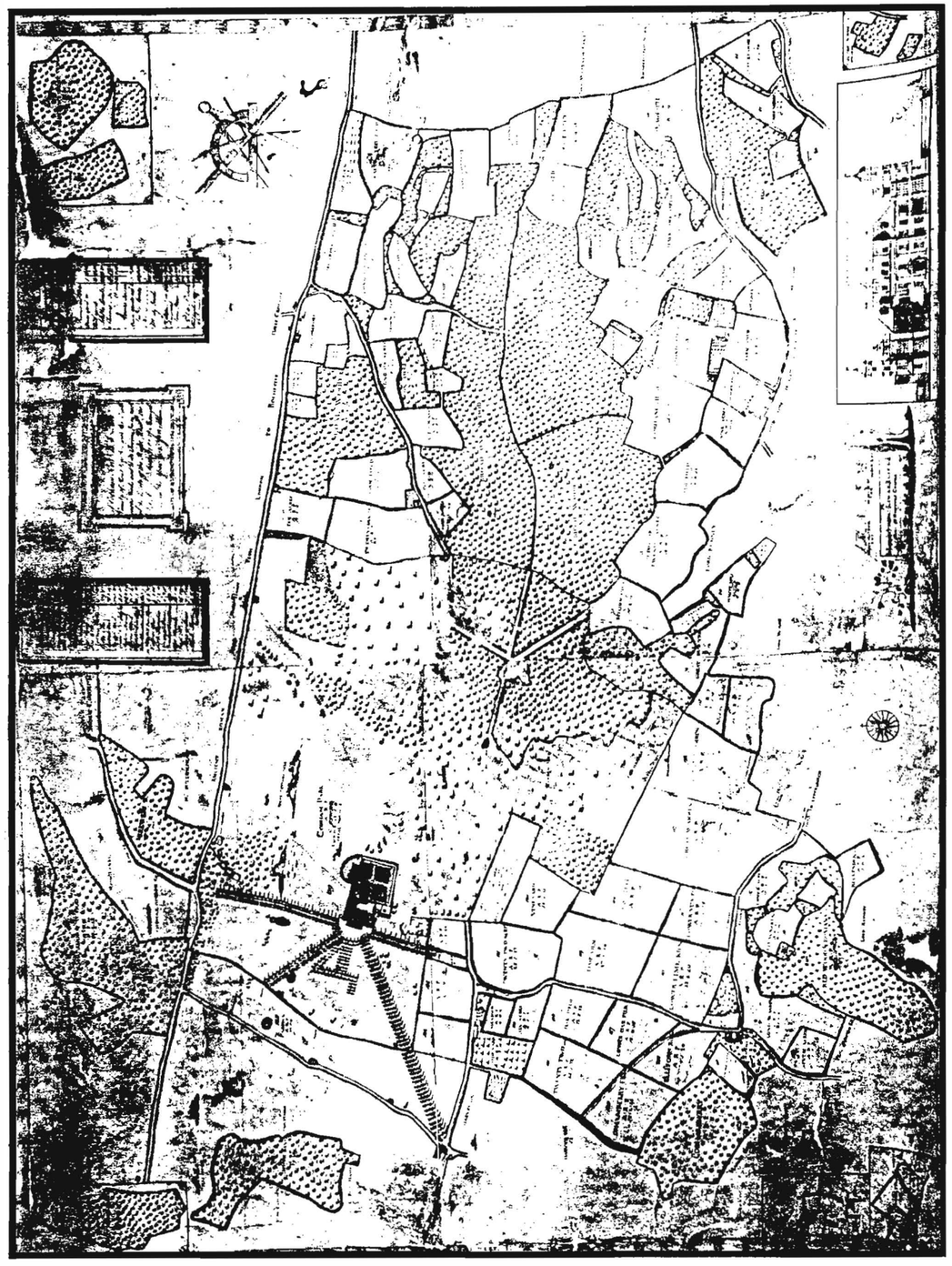
George Russell map of Cobham Park, c.1716

Figure B9



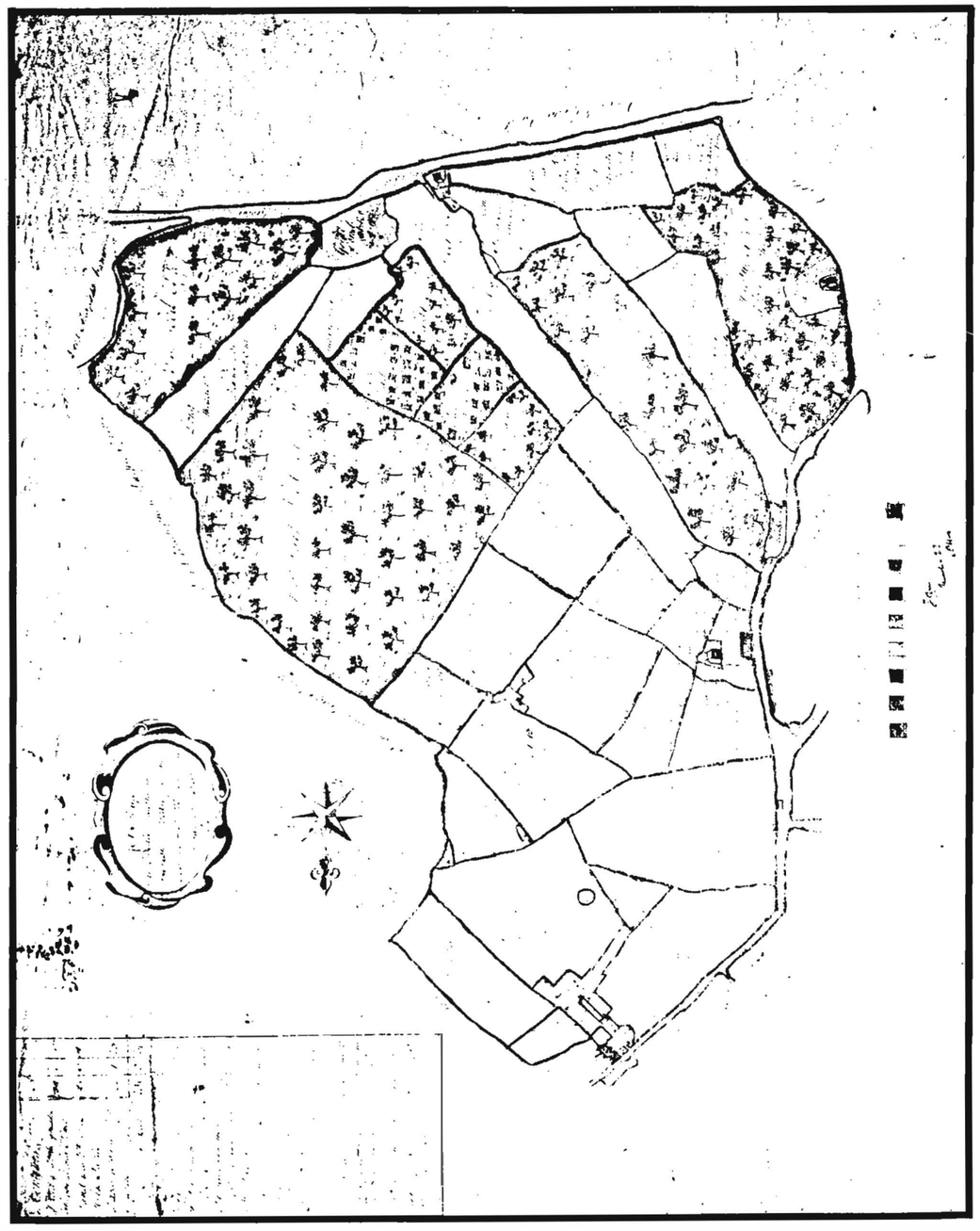
Charles Price map of Cobham Park, c. 1749

Figure B10



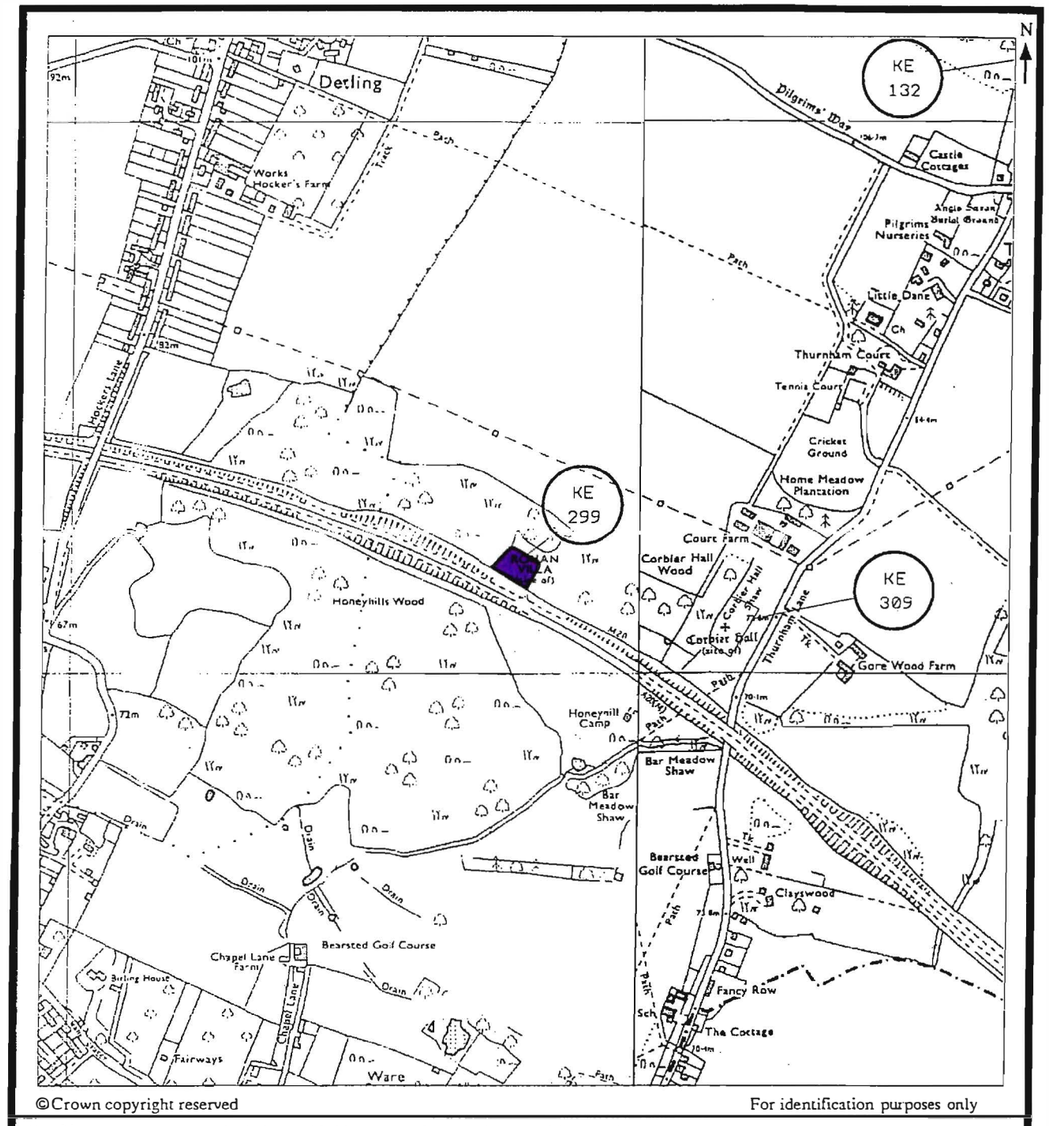
Charles Stoaney map of Cobham Park, c.1758

Figure B11



Boxley Park, c.1769

Figure B13



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For identification purposes only

Site Name: Romano-British building W of Corbier Hall Wood

County: Kent	District: Maidstone	Parish: Thurnham

Notes:

Key: Monument No. Location/extent of site

Derived from: 1:10000

Centred on NGR: TQ79805720

Extract from OS sheet: TQ75NE

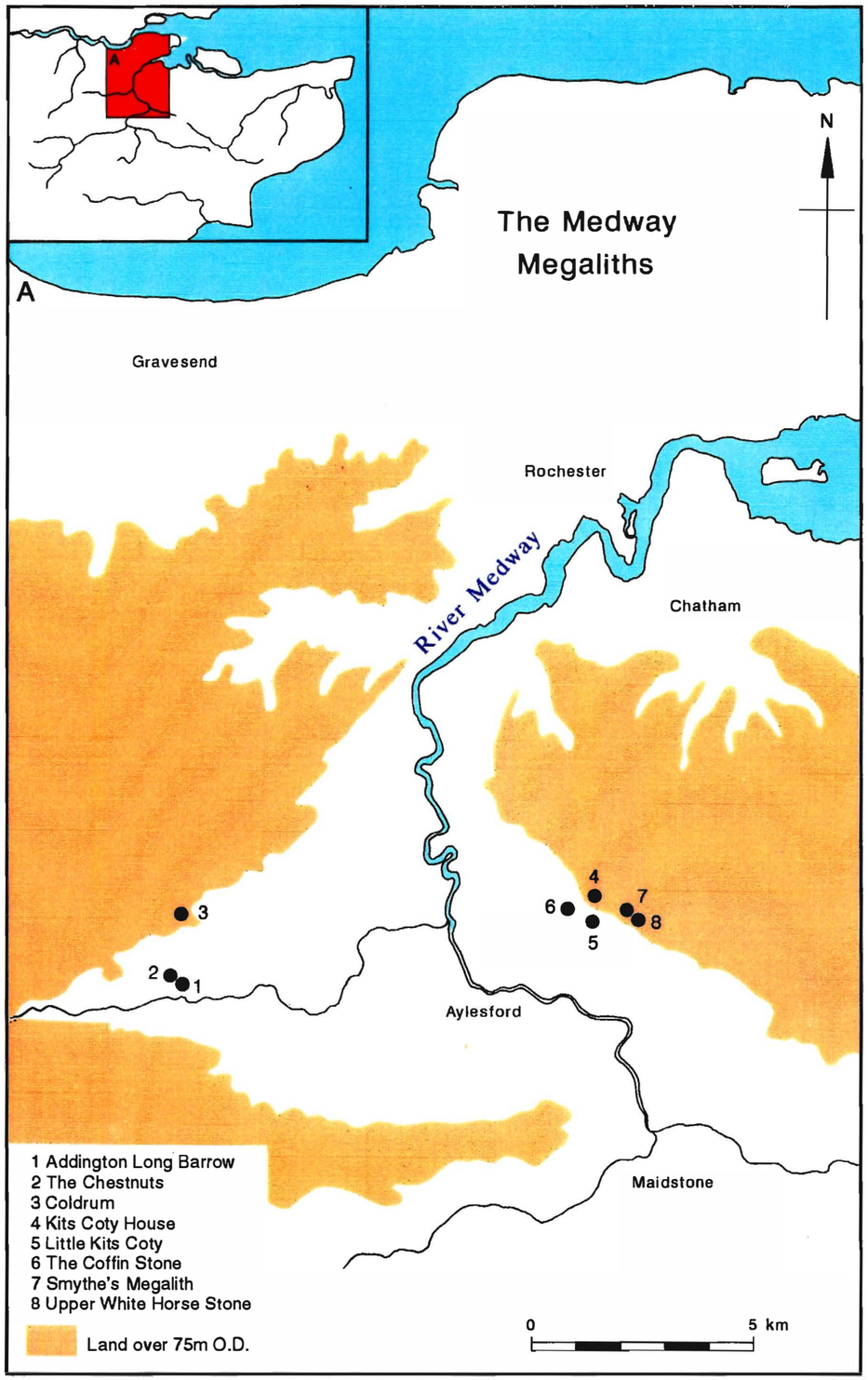
Date: 14.3.91 | Monument No: KE299

English Heritage

Fortress House 23 Savile Row London W1X 1AB Telephone 071-973 3000 Fax 071-973 3001

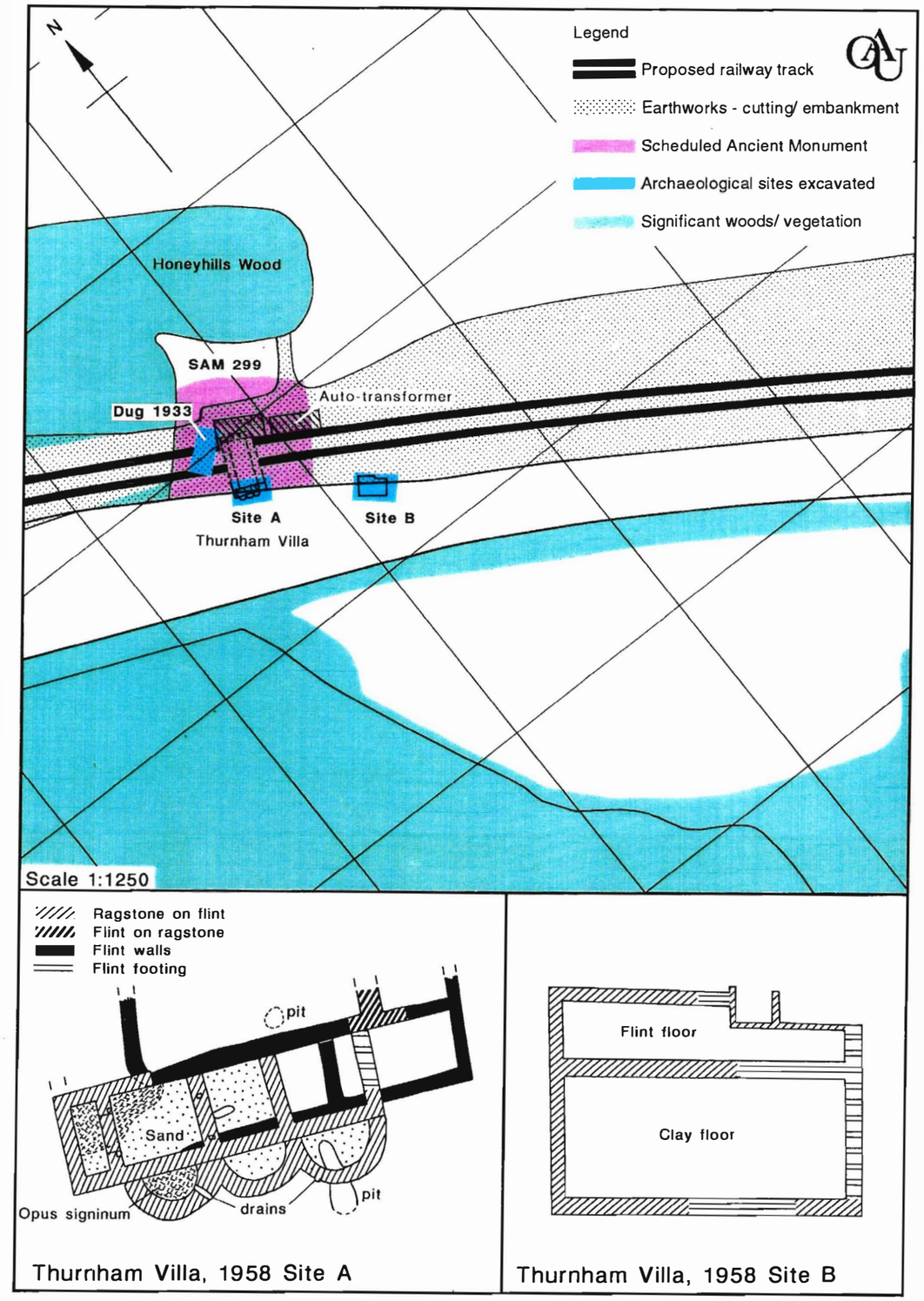
English Heritage Map of the Scheduled Monument at Thurnham

Figure B14



The Medway Megaliths

Figure B12



Thurnham Roman Villa

Figure B15

Channel Tunnel Rail Link

Historic and Cultural Effects
Final Report

Appendix C

Legislative Framework

APPENDIX C

LEGISLATIVE FRAMEWORK AND PROFESSIONAL GUIDELINES

1. Introduction

The following account is intended to provide guidance as to current legislation and good practice with regard to safeguarding the man-made heritage. It is intended to outline important concepts, policy issues, principles and standards which underpin the approach adopted in the assessment of the historic and cultural effects of the CTRL. It does not explain procedures. This represents the understanding and views of the Oxford Archaeological Unit and does not represent a formal legal opinion of current law in this field. The Oxford Archaeological Unit accepts no legal liability arising from interpretations of the law based on these views.

Note: The assessment of the CTRL has been made as it stood at the end of June 1994, prior to the publication of DOE Planning Policy Note 15.

2. Scheduled Ancient Monuments and Guardianship Monuments

The principal statutory definition and designation of archaeological sites is contained within the Ancient Monuments and Archaeological Areas Act 1979 (Chapter 46). This provides the following definitions:

Monument (c.46 s.61 (7)):

'a) any building, structure, or work, whether above or below the surface of the land, and any cave or excavation

b) any site comprising the remains of any such building, structure, or work, or of any cave or excavation; and

c) any site comprising, or comprising the remains of, any vehicle, vessel, aircraft, or other movable structure or part thereof, which neither constitutes nor forms part of any work which is a monument within paragraph (a) above.'

In addition 'the site of a monument includes not only the land in or on which it is situated, but also any land comprising or adjoining it which appears to the Secretary of State or a local authority, in exercise of their function under this act, to be essential for its support and preservation.' (c.46 s.61 (9))

Scheduled Monument (c.46 s.1 (11)):

'any monument which is, for the time being, included in the Schedule.' (The Schedule of Ancient Monuments is compiled and maintained by the Secretary of State for National Heritage.)

Ancient Monument (c.46 s.61 (12)):

'any scheduled monument, and any other monument, which, in the opinion of the Secretary of State, is of public interest by reason of the historic, architectural, traditional, artistic, or archaeological interest attaching to it.' (In certain contexts, it is the opinion of HBMC which determines the matter.)

Currently the Schedule of Ancient Monuments includes over 13,000 monuments, with about 400 in Kent, 225 in Essex and 170 in Greater London (English Heritage 1992). Under the 1979 Act it is an offence to carry out various activities which might damage or otherwise physically affect a scheduled ancient monument (including tipping and flooding, and if a potential cause of damage, tunnelling). To carry out any such activities, specific consent must be sought from the Secretary of State, who is obliged to consult English Heritage, and may also hold a public inquiry before making a decision. Consent may be refused or granted, often subject to conditions.

Preservation of the setting of a scheduled monument is only provided for under the 1979 Act in so far as it may be included in the designation. However the setting of nationally important monuments is a material consideration in the application of the Town and Country Planning Act 1990 as guided by DOE Planning Policy Guidance Note 16, *Archaeology and Planning* (see below).

Most scheduled monuments are in private ownership and are maintained by their owners or occupiers, in some cases supported by financial management agreements. A higher degree of active state protection is afforded to certain scheduled monuments through their being legally in the guardianship of English Heritage who took over responsibility for maintaining and managing them from DOE under the National Heritage Act 1983. In some cases English Heritage owns such monuments as well as having a primary duty to preserve and maintain them for the nation.

Scheduling gives a monument the status of being nationally important: there are no scheduling grades to define sub-categories of regional or local importance. Guardianship monuments are of special national significance. Currently only about 2-3% of known monuments are scheduled. However, a study by English Heritage in 1984 indicated that the current Schedule is not a fully representative or adequate sample of the national archaeological resource, and a major Monuments Protection Programme is now under way to redress omissions and imbalances (English Heritage 1984). It follows that many monuments not currently scheduled are nevertheless of national importance, and this is recognized in Planning Policy Guidance Note 16 (DOE 1990). Indeed, some of these, judged against the non-statutory criteria, may qualify more clearly for scheduling than would some existing scheduled ancient monuments.

3. Archaeology and Planning

The Town and Country Planning Act 1990, consolidating the 1971 Act, provides powers which may be used to control or prevent developments which might harm the cultural heritage. In recent years these powers have increasingly been used to ensure that developers mitigate the historic and cultural impacts of their developments. The principles have been set out by English Heritage (Wainwright 1989).

The importance of making decisions in the light of adequate knowledge of the archaeological interest of a site is set out in DOE Planning Policy Guidance Note 16 *Archaeology and Planning*.

The principles established by PPG 16 are reflected in relevant local plan policies, and in Volume 11, Section 3 of the Department of Transport's Design Manual for Roads and Bridges (1993). The key provisions of PPG 16 are as follows:

Paras 3-14:	Explain why archaeology is important and asserts basic principles.
Paras 15-17:	Assert the need for local authorities to include policies for the conservation of archaeological remains and explain the value of Sites and Monuments Records.
Para 8:	Asserts a presumption in favour of preserving nationally important monuments and their settings, whether scheduled or not.
Para 18:	States that preserving an ancient monument and its setting is a material consideration in determining a planning application, whether scheduled or not.
Para 19:	Recommends early consultation with County Archaeological Officers and English Heritage to provide early warning of archaeological sensitivity.
Para 20:	States that assessment normally involves desk-based evaluation of existing information.
Para 21:	Stresses the value of field evaluation, consisting of ground survey and small scale trial trenching, to define the character and extent of archaeological remains, to establish what weight should be attached to their preservation, and to identify options for minimising or avoiding damage. On this basis an informed and reasonable planning decision can be taken.
Para 22:	States that local authorities can expect developers to provide the results of such assessments and evaluations as part of their application, or may request such information under Regulation 4 of the Town and Country Planning (Applications) Regulations 1988; in some cases a full EA may be necessary.
Para 24:	Recognises that it is not always feasible to preserve archaeological remains when considered in relation to other factors, and that excavation is a reasonable means to record evidence.
Para 25:	Stresses the desirability for planning authorities to satisfy themselves that appropriate recording action carried out would be undertaken to approved briefs, and the results published. This may be achieved through agreements or conditions.
Para 27:	Stresses that the case for preservation of remains must take into account archaeological policies in development plans, together with

all other relevant policies and material considerations including weighing the intrinsic importance of the remains against the need for the development.

Paras 29-30 — Outline the basis on which planning conditions requiring archaeological recording may be imposed.

Para 31: — Outlines the position regarding the unexpected discovery of important archaeological remains.

4. Other forms of designation and protection for archaeological sites

Areas of Archaeological Importance

Areas of Archaeological Importance are defined under the 1979 Act as a form of designation intended to ensure access for recording prior to development, but this provision has only been used for a few historic town centres none of which is affected by CTRL. A 'Site of Archaeological Interest' as defined by the Town and Country Planning General Development Order 1988 includes those occurring 'within a site registered in any record kept by a county council and known as the County Sites and Monuments Record.'

A few local authorities including most London Boroughs have developed a comprehensive system of local or regional designations for planning purposes.

Non-archaeological designations

Archaeological remains are in practice sometimes protected indirectly through being within areas designated for other purposes. This includes conservation areas (see below) but these are seldom designated or specifically intended to include archaeological remains. Likewise, archaeological sites often enjoy some protection through being within the boundaries of National Nature Reserves or Sites of Special Scientific Interest. In the case of palaeolithic remains in pleistocene deposits designated as geological SSSI's their existence is a direct factor in the designation of these areas but is not for biological SSSI's. Historic and archaeological features are also contributory factors to the definition of Natural Beauty for the designation of Areas of Outstanding Natural Beauty.

Burials

Under the Burials Act 1857 (s.25) it is necessary to obtain a licence from the Home Office to disinter human burials. As currently administered by the Home Office this applies to any burial, not just those in recognized cemeteries. The licence is normally issued with conditions regarding the removal and disposal of such remains. The licence usually obviates the need for coroners' inquests where work is known to or likely to affect ancient burials.

Under the Disused Burial Grounds Act 1981 rather more stringent provisions relate to works affecting recognized cemeteries, particularly those of the relatively recent historic period. A public notification procedure is involved as well as similar requirements under the Act for the removal and disposal of human remains.

Finds

In Common Law, finds in the ground constitute part of the soil and thereby belong to the landowner (O'Keefe and Prott 1984; Harte 1985). Archaeologists have no automatic right to clean, examine or analyze finds (except under specific powers of entry under the 1979 Ancient Monuments legislation), or to keep or pass them to a third party such as a museum. The ancient law of Treasure Trove represents an exception by which the crown may claim ownership of objects of gold and silver deliberately hidden with the intent to recover them, where the owner cannot be traced. It is an offence to use metal detectors on a scheduled ancient monument without written consent of the Secretary of State. Some corporate or individual landowners also ban their use.

Other Legislation

Other legislation with relevant archaeological provisions includes the Water and Electricity Acts 1989.

5. Listed and other Historic Buildings

The protection of buildings listed as being of 'special architectural or historic interest' is regulated by the Planning (Listed Buildings and Conservation Areas) Act 1990, which has consolidated previous legislation and is operated under Regulations (SI 1990 No 1519), and by previous Circulars issued by the Department of the Environment (especially 8/87: 'Historic Buildings and Conservation Areas - Policy and Procedures'). The Department of National Heritage has the principal executive authority, as advised by the Historic Buildings and Monuments Commission (HBMC), also known as English Heritage. Local authorities also have considerable delegated powers, with duties to refer to DONH in certain cases.

Draft PPG15 outlines the basis of Government thinking on the principles of conserving the historic environment, especially in relation to the built heritage. This recognizes that

> *'England is exceptionally rich in major buildings of outstanding importance'*

and goes on,

> *'But conservation policy is not only about protecting these great set pieces. The many lesser historic buildings to be found in our towns and villages and countryside are also of great importance for the contribution which they make to our knowledge of the past and to the charcter of our environment. The cumulative character and interest of relatively minor historic buildings in a street or village square or residential neighbourhood are particularly important when much new development no longer reflects local building traditions.' (Draft PPG 15 para. 1.2).*

In general, listed buildings comprise a wide range of buildings and other structures described on the Statutory Lists, together with any others within the curtilage of those buildings. Thus where a farmhouse is included on the Statutory List, the outbuildings and adjacent farm buildings may also be listed (if they were also part of the curtilage pre 1948), even if not mentioned in the list. Unlisted buildings in conservation areas are also treated on an equivalent basis to those which are listed for some purposes, particularly

in the case of demolition. Where the building is scheduled as well as listed the provisions of the 1979 Ancient Monuments Act rather than the 1990 Act apply.

Statutory Lists are compiled of buildings 'of special architectural or historic interest', according to agreed criteria. Under non-statutory provisions, set out in DOE Circular 8/87, listed buildings are graded into three categories of interest, 'exceptional' (Grade I), 'particularly important' (Grade II*), and 'special interest' (Grade II). The former Grade III buildings are not statutorily listed but are referred to as buildings of 'some importance' and are often now considered to be of special interest especially where they possess group value; they are sometimes referred to as being 'locally listed', from their having at one time appeared on Provisional or Local Interest lists. The criteria for grading were set out by DOE in guidance notes prepared for listers in 1985.

It should be noted that the grades are not explicitly stated as reflecting a division between national, regional and local importance. The DOE guidance notes distinguish between an 'upper category' of Grade I and II* buildings which are 'of paramount and exceptional interest in a national context', a 'lower category' of Grade II buildings 'of special interest which warrant every effort being made to preserve them' and 'buildings of local interest' formerly Grade III. There is nothing to indicate that Grade II represents an intermediate regional or county tier of importance; indeed it may be considered that they enjoy national designation judged on national criteria, and that they are simply of 'special' rather than 'paramount' or 'exceptional' national interest.

However a number of ways in which the legislation is administered suggest a practical distinction of some significance in the degree to which casework on Grade II buildings is delegated to local authorities and the context of their decision making. For example Circular 8/87 suggests that they consider listed building consent applications using criteria which require consideration in a local or regional context, as implied by the term 'neighbourhood', rather than a national context:

> *the importance of the building, both intrinsically and relatively bearing in mind the number of other listed buildings in the neighbourhood. In some cases a building may be important because there are only a few of its type in the neighbourhood...*

Local Authorities deal initially with applications for listed building consent. Consent is required for works affecting the character of a listed building (see below), and demolitions. In the case of alterations to Grade II buildings, the local authority is usually the sole power. In London and Kent, listed building control is generally conducted at borough or district level.

Under the listed building legislation Local Authorities must notify HBMC on the receipt of all applications for demolitions (including partial demolitions) and alterations to Grade I and II* buildings. They must also refer all applications for demolitions of all grades of buildings and of curtilage buildings in the list descriptions to the DONH before granting consent, so that the Secretary of State can call them in for his own decision. Other cases can also be called in by the DONH, and Public Inquiries may be held on any application. Following consultation with HBMC, permission is granted or refused by the Secretary of State. For Greater London, the London (former GLC) Buildings Division of HBMC deals with applications for all grades of buildings.

The legislation with its supporting regulations and circulars is designed to address four broad categories of impact that development or maintenance problems may have on historic buildings:

i) demolition

ii) alterations to their special architectural and historic character

iii) unsympathetic alterations to their setting

iv) decay or dereliction through inadequate maintenance.

The first two of these are subject to special listed building control consent procedures, while preservation of setting is a general statutory objective most relevant to general planning controls. Guidance on these is contained principally in DOE Circular 8/87. Draft PPG 15 also sets out Government policy for the listing of historic buildings, for the control of works to listed buildings, and for the preservation and enhancement of conservation areas. It represents a clarification of Circular 8/87 rather than the introduction of new policies.

Within each of the four areas of concern to protect the architectural heritage defined above there are problems of definition, many of which can only be resolved by case law.

For instance, a court decision decided that partial demolition was to be treated as demolition. Definition of works 'affecting the character' of a listed building may differ between Local Authorities according to practice. For example, whilst the wholesale replacement of windows obviously affects the character of a building, and criminal prosecutions have resulted from unauthorised removal of windows (Suddards 1988, 138), the provision of double glazing or secondary glazing is more borderline, and its control may depend on the vigilance of local authorities. Consent is also required for the re-erection of listed buildings which have been dismantled.

The definition of setting is a grey area. Circular 8/87 and Draft PPG15 draw attention to the setting of a building often being integral to its character especially where it is within a garden or grounds laid out around it. The same might equally apply to industrial complexes. Emphasis is also placed on the importance of 'the harmony produced by a whole range or complex of buildings' which in themselves may be of no great intrinsic importance but deserve equal consideration to individual listed buildings. The guidance given regarding notification of planning applications affecting the setting of a listed building is also useful:

> *The 'setting' of a building may be limited to the immediate surroundings of the building, but often may include land some distance from it. For example, where a listed building forms an important visual element in a street, it would probably be right to regard any development in the street as being within the setting of the building. A proposed high or bulky building might also affect the setting of a listed building some distance away. (Circular 8/87 para.27)*

> *The setting is often an essential part of the building's character: historic buildings can often be robbed of much of their interest and townscape value if they become isolated from their surroundings, eg by new traffic routes, car parks, or other inappropriate development. (Draft PPG 15 para 2.14)*

Although setting is mainly considered in terms of views of a building, views from it have also been established as a material consideration of its setting in some cases.

It is less clear whether other aspects of the environment affecting other senses, notably noise, can be considered as contributing to setting. However Circular 8/87 emphasises the contribution buildings make to the 'environmental quality of life' and their importance in 'conserving and enhancing a cherished local scene'. This suggests a fairly wide interpretation, and one of the requirements regarding setting is that authorities

> *bring fully informed opinion to bear on any development which, by its character and/or location, might be held to have an adverse effect on buildings of special architectural or historic interest. (Circular 8/87 para. 26).*

Applications for consent to demolish listed buildings in England have to be notified to six statutory consultees. The Royal Commission on the Historical Monuments of England has a statutory role by virtue of Section 8(2)(b-c) of the 1990 Act specifically for the purpose of allowing it time and access to record the building or to state that it does not wish to record it. It should be noted that this recording role is neither obligatory nor exclusive: Circular 8/87 sets out model conditions by which local authorities may ensure opportunities for other bodies or individuals to carry out recording.

The other consultees are named in Circular 8/87 as:

The Ancient Monuments Society
The Council for British Archaeology
The Georgian Group
The Society for the Protection of Ancient Buildings
The Victorian Society

Draft PPG 15 sets out general criteria against which applications to alter or demolish a listed building may be judged, and more specific criteria for demolition consent. For the most part these refer to redevelopment scenarios rather than major infrastructure works. They include the importance of the building, its national and local interest, the particular features which would be lost or altered, the building's setting and its contribution to the local scene, especially in terms of group value or architectural coherence with other buildings, and the public benefits likely to arise from the proposals requiring the alteration or demolition. In the case of demolition key considerations are that alternatives avoiding demolition should be properly considered, and the justification for the alternative use of the site.

6. Conservation Areas

Established by the Civic Amenities Act 1967 and consolidated in the Planning (Listed Buildings and Conservation Areas) Act 1990, s.69, conservation areas are designated by local authorities as

> *Areas of special architectural or historic interest the character or appearance of which it is desirable to preserve or enhance.*

There are no particular criteria for selection other than the character of the area rather than of individual buildings. Contributory elements suggested by Circular 8/87 include town centres, squares, terraces, listed buildings, pleasant groups of other buildings, open

spaces, trees, an historic street pattern, a village green or features of historic or archaeological interest.

Designation allows certain policies to be formulated for the preservation and enhancement of the areas, this includes consideration of developments outside a conservation area which might affect its setting (see above).

Additional controls are also in force for developments and most buildings in conservation areas, whether or not they are listed. The most important of these is that demolitions of unlisted buildings are subject to conservation area consent, and both these and large development schemes have to be referred to the DONH. By using 'Article 4 Directions' local authorities may also apply special policies in some conservation areas.

The preservation and enhancement of conservation areas is also covered by PPG 15 which provides a clear framework of the conservation area policies making it easier to interpret than those within circular 8/87. It also emphasises the importance of the planning context of conservation policies, and recognises that, while development within a conservation area can be necessary, this development should be done in the best interests of the conservation area rather than the profit of the developer.

English Heritage have also produced a document entitled 'Conservation Area Practice' (English Heritage 1993). The purpose of this paper is to offer guidance on the key aspects of practice and management which need to be considered and applied to conservation areas, in order to ensure their preservation and enhancement. The basic change or clarification of thinking behind the policies within circular 8/87 and those recommended by English Heritage in June 1993 is the need for protecting not just the individual buildings within the conservation areas but also the character of the whole area which contributes to the quality of the local environment.

The points contained within the conservation area practice document of June 1993 can be summarised as follows:

- recommends the need to limit conservation area designations to only those areas of special local interest in recognition of the limited resource implications.
- states that the reasons why an area qualifies for conservation area status should be analysed and published and that it is these key factors which should be enhanced.
- encourages the constant monitoring of the problems occurring within the conservation areas so they can be dealt with quickly using Article 4 if necessary.
- recommends that the local plan should contain policies which protect and enhance the conservation areas and those features and buildings (especially buildings at risk) within them.
- recommends that sympathetic redevelopment occurs on 'opportunity sites' (those which detract from the character or appearance of the area) and that areas of detail such as street furniture are also treated sympathetically.
- recommends that economic regeneration should be pursued and that the local authorities' policies for protection and enhancement should be widely publicised especially to owners of conservation area properties.

7. Historic Parks and Gardens

Although not enjoying any statutory recognition there is a national Register of Historic Parks and Gardens established by English Heritage. They are graded as being 'of

exceptional interest', 'of great quality' or 'of special interest' by the same system as that used for historic buildings, the criteria being the quality of their historic layout, of particular features and of architectural ornaments (English Heritage 1987b). Kent County Council has established its own county register which again has a grading system, reflecting county rather than national importance (KCC 1985-1988).

These registers are used mainly to guide conservation and planning policy rather than offering any direct, independent form of control on the areas registered. Paragraphs 15-16 of Circular 8/87, and Draft PPG 15 para 35 specifically draw attention to the register in the context of road schemes.

8. Good Practice Standards

The ethics of conducting archaeological fieldwork and research are set out in the Institute of Field Archaeologists Code of Conduct (IFA, n.d.). This covers archaeologists' responsibilities towards the heritage, rights to the use of primary data, obligations to publish results and relations between practitioners.

Guidelines on the drawing up of archaeological contracts were published in 1982 (CBA 1982), and in a Code of Approved Practice for the Regulation of Contractual Arrangements in Field Archaeology (IFA 1990).

There are two current sets of guidelines covering safety in archaeological and architectural fieldwork, broadly dealing with archaeological excavations (SCAUM 1986) and archaeological and architectural surveys (CBA 1989).

There are numerous methodological manuals on archaeological and architectural recording techniques but no specific, generally agreed standard. Good practice is normally ensured by employment of professionally competent individuals or bodies (normally members of the Institute of Field Archaeologists) and by laying down requirements to fulfill agreed specifications and research designs, tailored to the particular requirements of a given site.

There are general standards for publication of archaeological investigations (Cunliffe 1983), for conservation and storage of finds and archives (DOE 1978; Museums and Art Galleries Commission 1986) and for many aspects of conserving historic buildings.

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Channel Tunnel Rail Link

Historic and Cultural Effects
Final Report

Appendix F

Acknowledgements

APPENDIX F

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English Heritage (London Division)

Essex Sites and Monuments Record

Kent County Council Conservation Officer and staff.

Kent County Council Head of Heritage Conservation and staff

National Buildings Record

Royal Commission on the Historical Monuments of England.

Borough and District Conservation Officers.

Staff of Ashmolean Library, Oxford

Staff of Bodleian Library, Oxford

Staff of Canterbury Cathedral Archives.

Staff of Centre for Kentish Studies.

Staff of Centre for Oxfordshire Studies

Kent Museums Service.

Maidstone Museum.

The Museums Association Documentation Service.

Passmore Edwards Museum

Staff of Rochester-upon-Medway Archives Office

South East Area Museums Service.

University of Cambridge Committee for Air Photography.

Mike Hughes, Hampshire County Council

Harvey Sheldon, Museum of London

A. Lawson and P. Cox, Trust for Wessex Archaeology

Paul Bennet, Canterbury Archaeological Trust

C R Baker, Dartford Borough Museum

Viscount Monckton.

Alison Roberts, British Museum

Tim Tatton-Brown.

A Mc Crerie, The Aylesford Society

Mrs. P. M. Winzar, Charing and District Local History Society.

Dr A Ridgers, Gravesend Historical Society

Ken Gravett, Kent Archaeological Society.

David Burridge, Kent Defence Research Group

R F Le Gear, Kent Underground Research Group

Mrs V Smith, Thameside Archaeological Group

Numerous property owners throughout the route