High Speed 1 (HS1) is the first new railway to be built in Britain for over a century and is the UK’s first high speed railway. The publication of this volume celebrates the immense scale and award-winning quality of the archaeological and historic building investigations that resulted from the construction of Section 1 of the rail link in Kent.

The project encompasses some truly exceptional individual discoveries, such as the Early Neolithic longhouse at White Horse Stone, one of only a handful known in Britain and the most thoroughly dated example. Extensive excavations at Thurham Roman Villa and Peper Harow Roman Cemetery have contributed greatly to our understanding of Roman Kent, while the Anglo-Saxon cemeteries at Cuxton and Saltwood Tunnel are immensely important additions to the corpus of Kentish cemeteries. Perhaps the most important contribution of HS1 Section 1 lies in the extent to which a range of ‘ordinary’ rural sites have been exposed and investigated across a broad range of landscape zones. The sheer number and scale of sites studied within a consistent research framework has offered a unique opportunity to examine change and continuity in this long-inhabited corridor from the Thames Estuary to the Channel coast.

This book provides a synthetic overview and critical analysis of the HS1 Section 1 archaeological results by a group of leading regional and period experts, placing the investigations within the context of current frameworks of archaeological understanding at a regional, national and international scale.

Underlying this volume is a large body of digital site and specialist reports and data, which is available from the Archaeology Data Service website. ADS 2006 Collection: 335 doi:10.5284/1000310

http://ads.ahds.ac.uk/catalogue/projArch/ctrl

Cover illustration of White Horse Stone Early Neolithic longhouse by Peter Lorimer
On Track
The Archaeology of High Speed 1 Section 1 in Kent

by Paul Booth, Timothy Champion, Stuart Foreman, Paul Garwood, Helen Glass, Julian Munby and Andrew Reynolds
This book is one of a series of monographs by Oxford Wessex Archaeology (OWA) that can be ordered through all good bookshops and internet bookshops.

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The construction of High Speed 1 (HS1, formerly known as the Channel Tunnel Rail Link) resulted in the largest archaeological project undertaken to date in the UK, and this volume summarises and discusses the results from Section 1 of the rail link route, a transect extending from the Thames estuary to the Channel coast. The route passes through a series of geographically distinctive landscape zones, and is broadly representative of the landscape of Kent as a whole.

While there are some exceptional individual sites and individual discoveries, the great strength of the Section 1 dataset lies in the large number of ‘ordinary’ sites which have been studied within the framework of a common research strategy, allowing broad conclusions to be drawn about the landscape through which the route passes and informing ongoing debates concerning the chronology, intensity and impact of human settlement in Kent and south-east England more widely. Discoveries and investigations along the route encompass a wide range of archaeological sites, ranging in date from the Mesolithic to the 20th century.

Mesolithic material from HS1 Section 1 excavations was scarce, with only three in situ assemblages of artefacts. Along with surface scatters and residual artefacts, these discoveries are best understood with reference to the spatial organisation of hunter-gatherer territories which spanned large areas of south-east England, including the ancient coastal plains submerged by Early Holocene sea-level rise.

The Early Neolithic evidence from HS1 is exceptionally important because of the discovery of a very rare timber building at White Horse Stone. This structure is one of only five or six Early Neolithic post-built hall-like structures known in southern Britain, and in many ways is the best preserved. It was found amidst a wider scatter of earlier Neolithic pits and tree-hollows comparable with similar features at other sites excavated along the HS1. These sites offer intriguing insights into the nature of social life at the very beginning of the 4th millennium BC.

Middle Neolithic pottery was recovered from eight HS1 Section 1 sites, in most cases redeposited in later features. Only at two sites were Peterborough Ware assemblages found in pit contexts: at Little Stock Farm and at Pilgrim’s Way. Although slight, the Middle Neolithic evidence recovered from these pits and other contexts along the HS1 route is important regionally, adding significantly to the total number of Peterborough Ware finds in south-east England.

The evidence for Late Neolithic activity along the HS1 route in some respects closely resembles the Middle Neolithic pattern, especially in terms of the general rarity of sites and finds of this period and the prominence of pit deposits. Only two HS1 Section 1 sites produced significant Grooved Ware assemblages, White Horse Stone Stone/ Pilgrim’s Way and Eyhorne Street, in both cases primarily from pit contexts. The Late Neolithic activity at White Horse Stone/Pilgrim’s Way in particular offers an exceptional insight into the nature of occupation practices in this period.

Long-term patterns of declining deposition in pits, along with shifts in the socio-spatial contexts of this activity from settlements and ceremonial monuments to funerary settings during the late 3rd and early 2nd millennia BC, seem to be registered in the limited HS1 evidence for pit deposition after c. 2500 BC. Beaker pottery assemblages, for example, were recovered from just six sites along the HS1 Section 1 route, with only three in pit deposits.

Traces of sixteen ring ditches, probably round barrows of Chalcolithic or Early Bronze Age date, were found along the rail link route, a significant addition to the regional corpus of sites excavated under modern conditions. However, the evidence from these sites is problematic as all were truncated by ploughing, so that even the presence of mound superstructures remains uncertain. Burials of this period were rare—seven individual burials were identified from Section 1, including three inhumations sharing the same grave at Northumberland Bottom, a cremation and an inhumation at Saltwood Tunnel and one inhumation at Whitehill Road Barrow, which was accompanied by an amber necklace.

For the late prehistoric period (for the purpose of this volume covering the Middle Bronze Age to the start of the Late Iron Age) there is fragmentary evidence for low-density activity of all periods throughout most of the route, but there is more substantial evidence at certain sites for Middle Bronze Age (eg White Horse Stone, Sandway Road, and Beechbrook Wood), Late Bronze Age (eg Cobham Golf Course and Saltwood Tunnel) and Iron Age (eg White Horse Stone and Beechbrook Wood) settlements. The excavations have also cast new light on Middle Bronze Age bronze-working, early iron-working and on the salt industry. The many large pottery assemblages recovered have also allowed a ceramic chronology to be established with greater confidence, as well as shedding light on resource utilisation, production and distribution. There was also a very varied pattern of clearly selective and structured deposits from all periods.

Archaeology of the Late Iron Age and Roman period was widespread along the HS1 Section 1 route,
represented predominantly by rural settlements, cemeteries and rural landscape features. Examination of a large part of the previously investigated villa complex at Thurnham was the only component of HS1 Section 1 which involved stone-founded Roman structures, apart from some poorly-preserved foundation fragments at Bower Road and a late Roman crop-dryer at Hazell’s Road. By contrast, parts of perhaps eleven other rural settlement sites were excavated, mostly interpreted as ‘farmsteads’ and mostly of Late Iron Age to Early Roman date. A further five principal sites were considered not to represent settlement directly, although four probably lay close to settlement (the fifth was the major cemetery at Pepper Hill near Springhead). These principal sites, as well as many others with less evidence for this period, included elements of roads or trackways and field systems, though the relationship of such features to some of the settlements is unclear.

One of the most striking aspects of the Roman sites of HS1 Section 1 is the apparently early end date of occupation at most of them. Of the sites best dated by pottery evidence only Hazell’s Road can be assigned entirely to the second half of the Roman period. A number of other locations saw activity in the 4th century, but this was at a reduced level in comparison with their earlier phases. Overall, it appears that the rural settlement pattern in this transect through Kent was in terminal decline, for the most part by about the middle of the 3rd century AD, and earlier in places.

In view of the general paucity of very Late Roman evidence it is unsurprising that there is little indication of the relationship, if any, between Late Roman and Early Anglo-Saxon settlement patterns. The only clear spatial association from Section 1 is at Saltwood Tunnel, where the Saxons cemeteries were set in the Romano-British landscape. Evidence from Section 2 in the Ebbsfleet Valley has more direct evidence for Late Roman and Anglo-Saxon settlement on the same site, especially at Northfleet Villa, although even here there may have been a hiatus in occupation. The most spectacular discoveries of the Early Anglo-Saxon period are the cemeteries at Cuxton (7th century) and Saltwood Tunnel (6th–7th centuries).

In the Middle and Late Anglo-Saxon periods the evidence recovered from the HS1 investigations provides some tantalising glimpses of site types otherwise largely unknown in the county. The investigations at Saltwood and White Horse Stone in particular, have thrown new light on the structure of the landscape and the nature of early communications and administrative boundaries. Remains of the Late Anglo-Saxon period (c 850–1050) and later were recorded at a series of sites. At Mersham, just south of Ashford, Late Anglo-Saxon and Early Norman activity was recovered in the form of evidence for metalworking activities. Further evidence for agricultural settlement of the late 11th and 12th centuries and later was recorded at Northumberland Bottom at the western end of the HS1 route. At Westenhanger just west of Saltwood the remains of buildings, pits and enclosure ditches dating from the late 11th century were found marking the start of a 200-year period of occupation. Higher status occupation was revealed at Parsonage Farm a few kilometres north-west of Ashford where a 12th–14th century moated manorial complex, probably initially a rectory, was partially excavated.

The earliest historic building investigated is Talbot House, which originated as a Wealden Hall, probably in the late 15th century. Other buildings investigated along the route, dating broadly from the 15th–17th centuries (eg Old Parsonage Farm), were all fairly typical rural domestic dwellings. Agricultural buildings of the 19th century are represented by Yonsea Farm, a model farm built c 1820, which exemplifies the impact of the agricultural revolution on approaches to farming in Britain at the time. The range of archaeological features and buildings identified in HS1 Section 1 broadens out beyond the agricultural for the first time in the late 19th and 20th centuries, encompassing small scale industrial sites such as brick kilns and quarries, as well as landscaped parks and gardens, railway infrastructure, and defence structures dating from World War II. While consideration of the later medieval, post-medieval and modern archaeology, including surviving buildings, was almost incidental as a research aim of the High Speed 1 project, the results of fieldwork have nonetheless provided interest and information along the whole route.
Many thanks are owed to the people involved in the construction of High Speed 1. It is not possible to mention by name all of the field archaeologists, High Speed 1, RLE and contractors design and construction team members, and landowners who facilitated the archaeological work and others, all of whose commitment and hard work have made the project such a success. The authors wish to extend their thanks and appreciation to the numerous people whose efforts have made this volume possible.

The 1994 Assessment of Historic and Cultural Effects was undertaken principally by George Lambrick and Julian Munby, assisted by Klara Spandl and Ianto Wain (Oxford Archaeology). Geophysical surveys were undertaken by Bartlett-Clarke Consultancy, and surface artefact collection surveys by teams from Oxford Archaeology.

The archaeological work was supervised from 1996 by the environmental team of Rail Link Engineering (RLE) led by Paul Johnson. The RLE archaeologists, Helen J Glass, Steve Haynes, Jay Carver, Chris Place, Brigitte Buss and Mark Turner, are thanked for their hard work in coordinating and supervising the design, construction and post-excavation phases. The client Union Railways (South) Ltd (latterly HS1 Limited), which provided on-going backing to the project, was represented throughout by Ted Alllett Quality and Environment Director, Josie Murray Heritage Manager and Rachel Starling Environment Manager. Peter Drewett and Sue Hamilton from University College London, acted as academic advisors and Peter Drewett wrote the over-arching research strategy for the HS1 Section 1 project. Martin Bates (University of Wales) conducted a geoarchaeological evaluation of the Thames/Medway alluvial corridor and Robin Boast (Cambridge University) produced a guide for the production of electronic datasets for the project.

John Williams, Lis Dyson and Simon Mason of Kent County Council, and Peter Kendall, Dominique de Moulins and Sarah Reilly of English Heritage monitored the fieldwork and post-exavcation work at various stages as Statutory Consultees. Kent Archaeological Society contributed very actively to the public consultation process. The late Ken Gravett deserves particular recognition for his positive contribution.

The field investigations were undertaken principally by staff from Canterbury Archaeological Trust, Museum of London Archaeology, Oxford Archaeology and Wessex Archaeology.

The following selected Canterbury Archaeological Trust staff directed excavations along the rail link route: Mick Diack (Saltwood Tunnel excavation), Adrian Gollop (Westenhanger Castle excavation) and Richard Helm (Mersham).

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Leigh Allen co-ordinated the small finds studies for HS1 Section 1. Lorraine Mepham was the medieval ceramics lead specialist as well as assisting in co-ordinating finds work. The submission and calibration of radiocarbon dates was coordinated by Michael Allen, in discussion with Alex Bayliss and Peter Marshall of the English Heritage Scientific Dating Service and Nancy Beavan-Athfield (Rafter Radiocarbon Laboratory). Elizabeth Stafford and John Giorgi co-ordinated the palaeoenvironmental studies. Particular mention is due to Ian Riddler for co-ordinating the Saltwood Tunnel artefact reports and grave catalogue and Paul Booth who co-ordinated the very large pottery team. Elaine Morris led a team of specialists based at Southampton University in a major study of the later prehistoric ceramics. Individual specialist contributors are listed below. A full list of reports by author can be found in Appendix 2.

The following artefact specialists contributed specialist research projects: Elaine Morris, Elizabeth Bryan, Barbara McNee, Grace Jones (later prehistoric pottery), Emily Edwards and Alistair Barclay (early prehistoric pottery), Paul Booth, Edward Biddulph, Lisa Brown, Rachel Every, Malcolm Lyne, Louise Rayner and Dan Stansbie (Roman pottery), Brenda Dickinson (samian stamps), Joanna Bird (samian pottery), Paul Blinkhorn (Anglo-Saxon pottery), Lorraine Mepham (medieval pottery), Ian Betts, Susan Pringle and Terence Smith (ceramic building materials), Cynthia Poole (fired clay), Philippa Bradley, Phil Harding, Kate Cramp and Rebecca Devaney (worked flint), Phil Andrews and Lynne Keys (metalworking residues). Small finds specialist reports were prepared by Barry Ager, Lyn Blackmore, Paul Booth, Esther Cameron, Hilary Cool, Valerie Diez, Emily Edwards, Vera Evison, Vanessa Fell, Andrew Fitzpatrick, Brian Gilmour, Anthea Harris, Martin Henig, Sue Hirst, Jackie Keily, Sonia Marzinik, Peter Northover, Ian Riddler, Beth Richardson, Ruth Shaffrey, Stephanie Spain and Penelope Walton-Rogers. Conservation of the large Saltwood Tunnel metalwork assemblage was carried out by the Lincoln City Conservation Laboratory. Liz Barham and Dana Goodburn Brown undertook other finds conservation work.

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The senior editors for the HS1 Section 1 publication programme are Julie Gardiner (digital reports on ADS) and Alex Smith (this volume).
High Speed 1 connects Britain to the European High Speed rail network. When the Queen opened High Speed 1 on 6 November 2007 it marked the culmination of Britain’s largest construction project, completed on time and within budget. It generated the country’s largest archaeological project and created an unprecedented opportunity to excavate along one of the busiest historic corridors between Britain and the Continent, in Kent.

Considerable effort was made in the planning stages of the route to identify historical features. Where possible archaeological sites were avoided or preserved *in situ*. Geophysical, field walking surveys and trial trenching fieldwork were commissioned to provide further detail where there was uncertainty. For sites of interest, an extensive programme of archaeological investigations, analysis and reporting was implemented. The wealth of information that has been gained about the archaeological character and development of the landscapes through Kent has been remarkable. The results of the works reported in this volume relate to the section between the Channel Tunnel at Cheriton and the Fawkham Junction, south of Gravesend. The results of the work undertaken on the remainder of High Speed 1 are reported separately.

The archaeology team from RLE (HS1’s project manager) oversaw all aspects of the project, and from the outset, the scale of the work required an innovative approach. English Heritage, County Archaeologists and university academics were closely involved in setting the High Speed 1 (formerly known as the Channel Tunnel Rail Link) academic research strategy, which set the scene for the work. This was implemented within the framework of The Channel Tunnel Rail Link Act 1996 and the project’s Environmental Minimum Requirements.

Project managers, planners, design and site engineers, construction, archaeological and historic building contractors, English Heritage, county archaeologists and historic buildings officers came together as one team. It is testament to this team that the fieldwork was undertaken within exacting construction time-scales, whilst ensuring that best practice was achieved. This teamwork has been fundamental to the achievements of the work.

In presenting the results of these investigations this monograph provides a thematic period based synthesis from the early prehistory, through later prehistory, Late Iron Age, Roman and Anglo-Saxon, to medieval and post-medieval periods. Each of the chapters describes the nature of the evidence, discusses themes and draws out specific points of significance. The detailed analyses of the archaeology has deepened our understanding along the route of the High Speed 1 landscape and provided an enhanced level of understanding. There have been some exceptional insights. The High Speed 1 work has also led to major and unique contributions to our understanding of the past within the broader context of Kent, south-east England, nationally and internationally—a fascinating glimpse of our history and culture.

The work was recognised by the Royal Town Planning Institute in 2008 who awarded HS1 Ltd Heritage Category winner in its annual planning awards for setting exemplary standards for archaeological practice. Thank you to all who have contributed to this achievement and to the record of the work in this monograph.

Rachel Starling,
*HS1 Ltd Environment Manager*

Steve Haynes Arup
*High Speed 1 Archaeology Programme Manager*
High Speed 1 (HS1) is the first new railway to be built in Britain for over a century and is the UK’s first high speed railway. The publication of this volume celebrates the immense scale and award-winning quality of the archaeological and historic building investigations that resulted from the construction of Section 1 of the rail link in Kent.

The project encompasses some truly exceptional individual discoveries, such as the Early Neolithic longhouse at White Horse Stone, one of only a handful known in Britain and the most thoroughly dated example. Extensive excavations at Thurham Roman Villa and Peggy Hill Roman cemetery have contributed greatly to our understanding of Roman Kent, while the Anglo-Saxon cemeteries at Cuxton and Saltwood Tunnel are immensely important additions to the corpus of Kentish cemeteries. Perhaps the most important contribution of HS1 Section 1 lies in the extent to which a range of ‘ordinary’ rural sites have been exposed and investigated across a broad range of landscape zones. The sheer number and scale of sites studied within a consistent research framework has offered a unique opportunity to examine change and continuity in this long-inhabited corridor from the Thames Estuary to the Channel coast.

This book provides a synthetic overview and critical analysis of the HS1 Section 1 archaeological results by a group of leading regional and period experts, placing the investigations within the context of current frameworks of archaeological understanding at a regional, national and international scale.

Underlying this volume is a large body of digital site and specialist reports and data, which is available from the Archaeology Data Service website. ADS 2006 Collection: 335 doi:10.5284/1000310
http://ads.ahds.ac.uk/catalogue/projArch/ctrl.

Cover illustration of White Horse Stone Early Neolithic longhouse by Peter Lorimer

On Track
The Archaeology of High Speed 1 Section 1 in Kent

by Paul Booth, Timothy Champion, Stuart Foreman, Paul Garwood, Helen Glass, Julian Munby and Andrew Reynolds

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