

A LOOK IN THE REAR-VIEW MIRROR: TWENTIETH CENTURY ROAD BUILDING AND THE DEVELOPMENT OF PROFESSIONAL ARCHAEOLOGY RESEARCH REPORT

Magnus Alexander



This report has been prepared for use on the internet and the images within it have been down-sampled to optimise downloading and printing speeds.

Please note that as a result of this down-sampling the images are not of the highest quality and some of the fine detail may be lost. Any person wishing to obtain a high resolution copy of this report should refer to the ordering information on the following page.

A LOOK IN THE REAR-VIEW MIRROR Twentieth Century Road Building and the Development of Professional Archaeology

RESEARCH REPORT

Magnus Alexander

© English Heritage

ISSN 1749-8775

The Research Department Report Series incorporates reports from all the specialist teams within the English Heritage Research Department: Archaeological Science; Archaeological Archives; Historic Interiors Research and Conservation; Archaeological Projects; Aerial Survey and Investigation; Archaeological Survey and Investigation; Architectural Investigation; Imaging, Graphics and Survey, and the Survey of London. It replaces the former Centre for Archaeology Reports Series, the Archaeological Investigation Report Series and the Architectural Investigation Report Series.

Many of these are interim reports which make available the results of specialist investigations in advance of full publication. They are not usually subject to external refereeing, and their conclusions may sometimes have to be modified in the light of information not available at the time of the investigation. Where no final project report is available, readers are advised to consult the author before citing these reports in any publication. Opinions expressed in Research Department reports are those of the author(s) and are not necessarily those of English Heritage.

Requests for further hard copies, after the initial print run, can be made by emailing:

Res.reports@english-heritage.org.uk

or by writing to:

English Heritage, Fort Cumberland, Fort Cumberland Road, Eastney, Portsmouth PO4 9LD

Please note that a charge will be made to cover printing and postage.

SUMMARY

This report examines the developing relationship between modern road construction, particularly motorways, and the development of archaeology, primarily in the period since the Second World War. It highlights the difficulty of identifying archaeological interventions in response to a particular development threat such as this but, during a general literature survey, identifies several hundred references to projects from the 1920s onwards. Analysis demonstrates that prior to the advent of the motorway committees in 1969 archaeological interventions were rare. Even after this developments were slow. Gradually archaeology became incorporated into the planning process as local authority archaeological services developed through the 1970s. It also became increasingly professional as the 'developer-pays' principle became established in the 1980s. These changes have become firmly established since the publication of Planning and Policy Guidance note 16 in 1990 and the increasing use of Environmental Impact Assessments on large road schemes. It is argued here that these changes can in large part be traced back to the results of the work of the motorway committees which demonstrated a previously unsuspected density of archaeological remains in many parts of England, many of which were being destroyed without record.

CONTRIBUTORS

Numerous colleagues contributed by answering queries, supplying information, images and data, and/or commenting on drafts including Stuart Ainsworth, Dave Batchelor, Mark Bowden, Katherine Bryson, Wayne Cocroft, Graham Deacon, Jon Humble, Brian Kerr, Fiona Matthews, Eloise Metson, John Minnis, Kathryn Morrison, Al Oswald, Chantelle Smith, Dave Went, Pete Wilson and all the EH librarians.

ACKNOWLEDGEMENTS

Thanks to: Peter Hinton and Andrea Bradley of the IfA for the title and all those who contributed to the 2009 IfA conference session; Kenneth Aitchison of Landward Research Ltd and Peter Hewitt of the Motorway Archive Trust for their data; the staff at those Historic Environment Records who answered my queries in particular Nick Boldrini in Durham, Sally Gale in Essex, Peter Insole in Bristol, Susan Lisk in Oxfordshire, Edward Salter in Kent, and Krystyna Truscoe in London, as well as Paul Beecher, Elisa Fariselli and David Freke at the Highways Agency; also, to Nicky Balfour Penney at The Shell Art Collection, Sharon Gerber-Parfitt at The Archaeological Journal, Erin Haata at Current Archaeology, Samantha Harris at Dover Museum & Bronze Age Boat Gallery, Jenny Oxley at Mill Green Museum, Stuart Palmer at Archaeology Warwickshire, E Whitbourn and Lancashire County Council for permission to use images.

DATE OF RESEARCH

2009-2011

Cover: Excavations at Durrington Walls, Wiltshire, 1967 (ASA7494/ORACLEE9; SUI543/9; 2117/67 © Crown copyright. NMR)

CONTACT DETAILS

Magnus Alexander, Archaeological Survey and Investigation
English Heritage, Brooklands, 24 Brooklands Avenue, Cambridge, CB2 8BU
01223 582776, magnus.alexander@english-heritage.org.uk

CONTENTS

INTRODUCTION	1
Aims	1
Scope	2
Previous research	2
METHODOLOGY	3
BACKGROUND HISTORY	5
Early developments	5
The inter-war years	5
The post-war era	11
The later 20th century	18
ARCHAEOLOGY AND ROAD BUILDING	24
Archaeological interventions before the Second World War	24
Rescue archaeology	26
Planning-led archaeology	54
Case Study: Twyford Down	78
DISCUSSION AND CONCLUSIONS	91
Problems	91
Opportunities	95
Conclusions	97
REFERENCES	98
APPENDICES	112
Appendix 1 - References to road-related archaeological projects	112
Appendix 2 - Post-war traffic and road statistics	145
Appendix 3 - UK motorway opening dates	148
Appendix 4 - Professional Archaeologists working in the UK	156

ABBREVIATIONS

DMRB:	Design Manual for Roads and Bridges
DoE:	Department for/of the Environment
DTp:	Department for/of Transport
EH	English Heritage
EIA:	Environmental Impact Assessment
HA:	Highways Agency
HER:	Historic Environment Record,
IAM:	Inspectorate of Ancient Monuments
MSC:	Manpower Services Commission
NATA:	New Approaches to Appraisal
NMR:	National Monuments Record
PPG:	Planning and Policy Guidance note
SAM:	Scheduled Ancient Monument
SMR:	Sites and Monuments Record

INTRODUCTION

This report forms a part of English Heritage's Car Project. This wider research project explored 'the impact of the car on people and places, from the 1890s to the present day' and examined 'how the world around us was adapted for cars, how planners and architects dealt with new challenges and how a whole new range of structures evolved to meet the needs of cars and their drivers' (EH 2007). The car itself has not had a significant direct impact upon the archaeological resource; it is actually the changes that have been made to the physical environment. Cars have been with us for over 100 years and within a decade the first road modifications resulting from their use were being made. Over the following century new and improved roads have had a dramatic effect upon rural and urban landscapes. Extensive areas of our countryside now lie under roads and most of the remainder has been affected by increasing numbers of visitors, usually arriving by car. Most town centres have been remodelled to accommodate the car and the development of suburbs, new towns and the various out of town centres has been made possible by car ownership.

For the purposes of this study a road is a route-way built (or re-built) for motor vehicles. To avoid confusion, the term 'road scheme' is used herein to refer to road development works of any sort, including new construction and improvements, and the term 'road project' for archaeological works related to a road scheme.

An important point, which should be made at the outset and borne in mind whilst reading the following, is that roads are perhaps unique among all forms of development. Since the advent of the car they have been improved and constructed almost exclusively by the state alone, either through local (minor roads, most urban roads and local improvements) or national (major roads, particularly strategic inter-urban routes) government. This puts the state, as a whole, in the position of both gamekeeper and poacher when it comes to managing the impact of roads.

Aims

This study contributes to The Car Project and was intended to provide: 'an assessment of the challenges/opportunities of motorway-related rescue archaeology' (Minnis & Morrison 2007, 36). It also examines the role of cars in the development of archaeology more broadly, looking at the changing relationship between roads, archaeologists and archaeology. This was a two way process; road development has had an effect on archaeology, it is a part of the historiography of archaeology, and archaeology has had an effect on roads, by becoming a primary material consideration in the planning process.

The broad aim of this report is therefore to:

Examine the evolving relationships between modern road construction and archaeology.

Within this, four main themes can be identified:

- 1 The development of archaeology in response to road building;
- 2 The development of road planning in response to archaeology;
- 3 The archaeological knowledge lost and gained as a result of road building;
- 4 Increasing awareness of the importance and vulnerability of the environment.

Scope

This report will concentrate on the development of the motorway network in order to examine Themes 1 to 3. Motorways did not develop in isolation and examples that throw light on these topics were also evident on new trunk roads, inner city ring roads, and road improvement projects. These will be mentioned where relevant. Though secondary features such as car-parks and ancillary works including contractors' compounds and 'borrow pits', can also have a significant impact, these will not be examined. Concerns about, and opposition to, roads will be examined as the most direct expression of Theme 4 as it relates to more recent road development.

Chronologically, the period examined will be that defined by the car; for the wider Car Project this has been taken to begin in the 1890s and run through to the present but for this project will be narrowed to the post-war era. Development from the 1950s onwards was of a different order of magnitude to that seen before; any relationship between archaeology and roads before the 1960s was rare and largely the result of happenstance, though a few exceptions have been identified which will be discussed. Detailed analysis will end with the new millennium. By this point the relationship between roads and archaeology was largely established and most developments since this point are still playing out. There are though a few points worth making and excavations of note since 2000.

Previous research

It has not been possible to identify any previous research on the subject of modern road building and archaeology though there are many published studies of the history and archaeology of roads themselves such as Morriss 2005 and Davies 2006.

METHODOLOGY

This study is based upon a survey of secondary sources in order to identify archaeological investigations that may be directly linked to road construction and improvement schemes. This was supplemented by an investigation of archaeological data held by the National Monuments Record and in some cases local Historic Environment Records (HERs).

Identifying archaeological interventions undertaken in response to road building has not been straightforward. The datasets that exist for archaeological interventions, such as the National Monuments Record and HERs, rarely identify their motivation, whether academic, rescue, or planning, and almost never record the nature of the threat. It proved particularly difficult to identify road related projects in urban areas. This was in part because of the terminology used - schemes in towns and cities were often described in vague terms such as 'development' - but there was also a more fundamental problem. Many of these developments, from inner city shopping centres to suburban housing estates, feature new roads, or changes to road layouts, but these were not the primary reason for the development. Publication titles do sometimes mention that the work was on a particular road or scheme and for large projects and more modern publications this can be a good indicator of the driving force for the intervention. However, as the work decreases in scale and increases in age it becomes increasingly difficult to identify archaeological work on roads without a detailed reading of the text, and often not even then.

The open collections catalogue of the National Monuments Record Centre's library was searched for terms indicative of road-related archaeology. A simple search for roads produced hundreds of references to the archaeology of roads themselves however, so the document titles and abstracts were searched for a range of more specific terms, including 'motorway', 'trunk road', 'dual carriageway', 'road scheme', 'road improvement', 'road widening' and 'road straightening', as well as 'A1' (which also produced results for A11, A145 etc) to 'A9', and 'M1' to 'M9'. In addition it was possible to search on the authors of these works to identify any other articles by them obviously related to the same schemes. All issues of *Current Archaeology* (CA 1967 – 2007) and *Rescue News* (RN 1972 – 2007) were also examined for references to archaeological projects undertaken in response to road schemes of all types. Overall more than 300 references were identified (Appendix 1) but this is likely to be an underestimate, even within this limited search, as many projects that were clearly in response to development did not state what that development was and some are likely to have been road schemes. The number of references cannot be directly related to the number of schemes with some form of archaeological intervention, since large schemes generated several publications and some publications contained references to more than one scheme.

From 1961 until 1976 the Ministry of Works, later the Ministry of Public Building and Works and eventually the Department of the Environment (DoE), published the Excavations Annual Report summarised as 'A brief survey of Prehistoric, Roman and medieval sites throughout the country excavated in advance of destruction' (MPBW 1964, frontispiece). These reports summarise the excavations and other fieldwork, post

excavation analysis and publications undertaken both directly by the department, and by bodies that it had grant aided. Whilst not completely comprehensive, they provide an increasingly detailed overview of work undertaken on what were considered to be the most important threatened sites each year for a 15 year period from almost the first roads-related rescue archaeology projects well into the early days of the professional era. In 1989 English Heritage produced the first Archaeological Review covering the financial year 1988-89. This series was effectively a replacement for the earlier Excavations Annual Report and was 'Intended to provide an overview of the main programmes and issues with which we are involved' (Wainwright 1989, 1). It continued to be published annually until the volume for 1998-99. These two sources were treated separately so as not to distort the results of the more general literature review

Data on traffic and roads is available for download from the Department for Transport (DfT 2010) website. The file in question was 'Zip of all TSGB 2010 releases, tables and charts as published on 25 November 2010 (Excel)', the latest version of which was downloaded from <http://www2.dft.gov.uk/pgr/statistics/datatablespublications/tsgb/> in March 2011. The key information is reproduced in Appendix 2. Data on motorway opening dates has been compiled by the Motorway Archive Trust (MAT) and is available at <http://www.ukmotorwayarchive.org/>. It is reproduced in a modified form as Appendix 3. Data on the number of professional archaeologists employed in the UK has been supplied by Kenneth Aitchison of Landward Research Ltd, formerly of the IfA, and is reproduced here in Appendix 4.

BACKGROUND HISTORY

In the two centuries before the First World War Britain's transport network had developed considerably, with the construction of turnpikes and a few long-distance road routes, canals and railways (Thrift 1990), radically increasing personal mobility relative to earlier periods. The rise of the car, and the construction of a road network able to cope with it, had an impact on society and the environment that was on a completely different scale to anything that had gone before though.

Early developments

The first motor car was imported into England in 1895 and the first wholly British built car produced in 1896 (Perkin 1976, 7, 40). By 1904 about 8,000 cars, 22,000 motorcycles and 4,000 goods vehicles had been licensed in Britain (Thrift 1990, 471; Morriss 2005, 64). Mass production began with the Ford Model-T, first assembled in Manchester in 1910, followed in 1912 by the first British mass market car, the Morris Oxford (Perkin 1976, 44). By 1914, vehicle licenses had shot up to about 132,000 private cars, 120,000 motorcycles, and 82,000 commercial vehicles (Morriss 2005, 64; Thrift 1990, 471).

Road improvements for motor vehicles also began at this time. In an attempt to keep dust down the first stretch of oil-treated road was laid down on the London to Aldershot road (later the A30) near Bagshot in 1902. This was soon superseded by tar and by 1908 over 2000km of road had been treated (Wilkinson 1934, 226). In the 1909 budget, motor taxation clauses led to the creation the Road Board, the first national roads body (Morriss 2005, 64), and the Road Fund. This was mainly spent through grants to local authorities to increase the replacement of old and dusty road surfaces with tarmac rather the construction of many new roads (Perkin 1976, 54-5).

During this period there was little consideration of road design. What is generally considered to be the first roundabout in Britain was constructed in Letchworth in 1909, but this was more a part of the urban plan than a traffic management feature. In general, the Garden Cities at Welwyn and Letchworth, the first 'new towns', were built at a time when the car was not seen as a serious mode of transport if it was considered at all. Far from providing for the car these towns were built on a pedestrian scale; many neighbourhood roads in Letchworth were only 20ft (6m) wide and designed for the most infrequent traffic (Minnis nd, 2).

The inter-war years

The number of vehicles on the roads had halved by the end of the First World War, but grew throughout the 1920s and 1930s; the number of motor car registrations reached a million in 1930 (Perkin 1976, 112) and two million in 1939 (Morriss 2005, 68). One of the consequences of the First World War was improvements to commercial motor vehicles which had been required to move troops and supplies. In the immediate post-war years the number of goods vehicles leapt from 62,000 in 1919 to 250,000 in 1926 and reached half a million by 1938 (Thorold 2003, 165-6, 177).

The countryside

Prior to the First World War, the pursuit of rural leisure activities, including motoring, was largely the preserve of the rich. In the inter-war period decreasing costs of car ownership opened up the countryside to the rising middle classes and omnibuses and charabancs took the working classes on day trips and annual holidays, changing the nature of visitors to the countryside, and dramatically increasing their quantity. The number and size of holiday resorts increased, particularly on the coast, which also saw a sprawl of ramshackle shanty towns such as Peacehaven, Sussex (Thorold 2003, 154-5), facilitated by the car. The spreading bus networks also allowed the urban poor access to new areas close to the cities which led to the development of new hobbies. The rise of rock climbing in the 1930s, as a largely working class sport (as opposed to mountaineering), was enabled by the accessibility by bus of areas such as the Peak District from the urban centres of Manchester and Sheffield (Thompson 2010, 128).

'Heritage' in its broad, modern sense, was one factor that encouraged car use. In 1927 H V Morton published the phenomenally successful *In Search of England* in which he described how he set off in his car to 'find' England. In this book 'Morton more or less invented the powerful idea that a car could take you to an older and more authentic country' (Hauser 2008, 97) and portrayed motorists as 'questing souls' (Thorold 2003, 142). Shell picked up on this idea and started using it in its advertising, creating a whole genre that has been described as 'motoring pastoral' (Hauser 2008, 97-9, Figure 1). There was a marked rise in the number of visitors to heritage sites. In 1901 about 4,000 people visited Stonehenge, by 1924-5 this had risen to 60,000 and in 1929-30 it was 100,000. Rievaulx Abbey had 14,000 visitors in 1924-5 which had risen to 30,000 five years later, and at Whitby Abbey the figures were 30,000 and 40,000 for the same years (Thorold 2003, 93).



Figure 1 – 'Motoring pastoral', a Shell poster using heritage to encourage motoring (Orford Castle, 1932, Allan Walton, courtesy the Shell Art Collection, © Shell Brands International, AG, it has not been possible to trace the artist's estate).

Rural roads

Soon after the First World War, the Transport Act of 1919 officially endorsed the view, which had existed for at least a decade, that equal facilities for fast traffic could not be applied to all roads and introduced the first system of road classification (Crowe 1960, 19); Classes I, II and 'Trunk' (Perkin 1976, 139). Towards the end of the period, the 1936 Trunk Roads Act transferred direct control of more than 290,000km of highway from county councils to the Minister of Transport (Thorold 2003, 209).

Many main roads were enhanced by 'improving curves and cambers, widening bridges, introducing overtaking lanes and, very occasionally, dual carriageways', but most still ran directly from town to town and through all the villages in between, creating congestion in their centres (Perkin 1976, 139, 146). Consequently, new roads were mainly by-passes, with a few major links and reconstructions such as the Great North Road (the A1) and the Shrewsbury to Holyhead road (A5). Several new roads were built around London as the first stages in a national arterial road programme including the Great Chertsey Road, the Great West Road, Western Avenue and parts of the North Circular (Morriss 2005, 70). Congestion in central Coventry made it clear that despite road improvements in the centre, through traffic would need to be kept out of the city and after many years of planning and construction the first section of a planned outer ring road, a 9.5km stretch on the line of the modern A45 from Willenhall to Allesley, opened in 1939 (Richardson 1972, 280). Other road schemes, such as the Arterial Road in Blackburn or the East Lancashire Road between Manchester and Liverpool, were conceived purely to provide employment (Morriss 2005, 70). Despite all these improvements and new roads, in total, only 4% was added to the road network between 1899 and 1936 (Perkin 1976, 139).

Most roads were still single-lane and many, such as the A1 at Doncaster and the Exeter bypass, had a reputation for serious traffic jams (Sutton, 1996, 91). A few though, reached or even bettered the standard of early post-war motorways. The Mickleham Bypass in Surrey which opened in 1939 was a landscaped two-lane dual carriageway with a broad central reservation and separate cycle lanes (Perkin 1976, Fig 9b), probably influenced by the German *autobahnen*. By 1938 though, there were just 43km of dual carriageway in Britain (Morriss 2005, 71). Other large-scale developments included flyovers, such as that on the Winchester bypass which opened in 1940, but they remained rare due to the cost (Sutton, 1996, 140).

Suburban growth

Suburban growth began in the mid-19th century with the spread of the railways, but the omnibus networks, and later the car, allowed the development of many new suburbs that let an ever increasing number of people own their own 'little bit of England' albeit at the cost of the daily commute. In terms of area affected, this new housing probably covered more countryside than any other form of development and could be argued to be the car's biggest impact (Thorold 2003, 209).

In 1918 a coalition government came to power promising 'homes fit for heroes' and over the next 20 years 4 million houses and flats were built in England. Between 1921 and 1937 there was a 37.5% increase in the housing stock whilst the population only grew

by about 7.8% (Thorold 2003, 223) representing a massive population density decrease; suburbs spread and inner cities lost people. Whilst Greater London as a whole grew by a million and a quarter people, the population of Inner London fell by almost half a million (Bowdler 1999, 104), a pattern repeated across the country, Birmingham, already England's second city, was surrounded by a ring of municipal estates and other suburbs dependent upon roads. By 1938 a seventh of its population lived in the centre of the city compared to over half in the outer suburbs (Thorold 2003, 225).

Suburban growth initially took the form of unplanned development along the new bus routes; houses were built one-by-one along main roads, leading to miles of frontage a single house deep, that was being referred to in critical terms, as an 'unrolling ribbon', as early as the mid-1920s (Thorold 2003, 145, 142). Later, municipal estates and speculative suburbs became more common. These were better planned and better able to accommodate the car than ad-hoc ribbon development. The Manchester suburb of Wythenshawe, built by the city's corporation in the late 1920s, initially lacked any services and was entirely dependent on the bus and car. It also featured two parkways; 'for free flowing traffic, segregated from housing and minor roads' (Thorold 2003, 225).

The sprawl was not purely residential. The rising use of commercial vehicles freed industry from many of its earlier locational constraints, making it possible to site factories almost anywhere (Thorold 2003, 214-6, 228), as did the changing nature of their products which were becoming increasingly consumer orientated; they were smaller, lighter and of higher value. Many were built on the new arterial roads or in industrial estates that mirrored the residential suburbs, perhaps the most iconic being the Hoover factory on Western Avenue, Greater London (Thorold 2003, 230).

During the 1930s new planning legislation was introduced, prompted by a growing sense that suburban sprawl had to be controlled (Thorold 2003, 145). Whilst early legislation was primarily aimed at the provision of adequate housing and focussed on urban areas (Blackhall 2000, 4-5), the Town and Country Planning Act 1932 was different. It was a highly significant piece of legislation for several reasons: it introduced the concept of planning in non-urban areas; it allowed local authorities to develop plans for any land, not just suburban areas; it allowed for schemes covering developed areas as well as green field sites; and, once a scheme was approved, it became binding on the local authority and developers (Blackhall 2000, 15). Nonetheless, it was clear that significant problems remained. The Royal Commission on the Distribution of the Industrial Population reported in 1940 and was followed in 1942 by a further committee on Land Utilisation in Rural Areas. 'Both were critical of the operation of the 1932 Act which they argued was not capable of checking the outward spread of towns and the consequent tendency to increase central density and traffic congestion' (Blackhall 2000, 5).

The above discussion describes the spread of housing into the countryside as perhaps the most significant impact of the car, at least in terms of area covered. It will not generally be covered in the discussion that follows however. Cars and other vehicles enabled this new housing to be located where it was but the developments were designed primarily to accommodate people. This contrasts with road schemes where the primary reason for their construction was to accommodate the car.

Urban centres

Because of the shift of population to the suburbs, town centres were coming under increasing pressure from motor vehicles. Whilst housing was moving to the periphery, most employment was not, and commuting was fuelling a rise in vehicle numbers.

This led to the introduction of many familiar traffic control measures. Traffic lights were first installed in Piccadilly Circus in 1926, Wolverhampton and Leeds in 1927, and most other cities by 1929 (Thorold 2003, 202-3). The 'Belisha Beacon' pedestrian crossing, was introduced in 1934, and white lines, signage and roundabouts became increasingly common (Perkin 1976, 140-1), though the current priority system was not universally introduced until the 1960s (*The Times* 14/7/2008).

These measures had relatively minor impacts on towns but many places proposed more significant schemes such road widening or straightening, often requiring the removal of historic buildings, as well as more drastic measures, including inner ring roads, which swept away whole areas. The extent to which these proposals were implemented varied; partial completion was typical, as many were interrupted by the Second World War. In Chester an inner ring road was planned but only short sections were actually constructed at the time; Pepper Street was widened and a new bridge was built through the city walls in the late 1930s. It wasn't completed until 1972 (Carrington 1994, 114). Many towns are centred on river crossings, often medieval or earlier, and existing bridges struggled to cope. Many were improved by widening, extending approaches to reduce gradients and opening them out. In Bedford, the 1813 bridge, built on the line of an earlier medieval bridge, was doubled in width because it 'could not cope with the traffic of the twentieth century' in a project completed in 1940 (Lock et al 1952, 11).

Coventry was at the forefront of developments. As a centre of the motor industry since its inception (Minnis 2007, 11) many of the city's councillors had a vested interest in the vehicle trade and wanted to create a 'modern' car-orientated city. Levels of car ownership were also high. In 1938 it was nearly twice the national average; 68 per 1000 people compared to 39. As well as this the narrow medieval streets of the town centre were clogged with private cars and buses bringing people in from the rapidly expanding suburbs as well as through traffic. To make matters worse, since there were few car parks, almost all parking and loading was on the street (Richardson 1972, 278). Some road improvement schemes were implemented in the city centre during the 1930s but more importantly two new roads were constructed, Corporation Street completed in 1931, and Trinity Street in 1937 (Richardson 1972, 279, Figures 2 and 3 overleaf).

Concerns

There were also rising concerns about increasing use of motor vehicles, both direct impacts such as increasing accidents and their broader effect upon the environment (Thorold 2003, 141). Most development during this period was being fuelled by car use. Motoring had greatly increased internal tourism which led to a rash of developments such as garages, road-houses, tea-shops and advertising hoardings. It had allowed ever more sprawling suburbs and an increasing separation between where people lived and worked, which in turn increased commuting, and urban centres were becoming

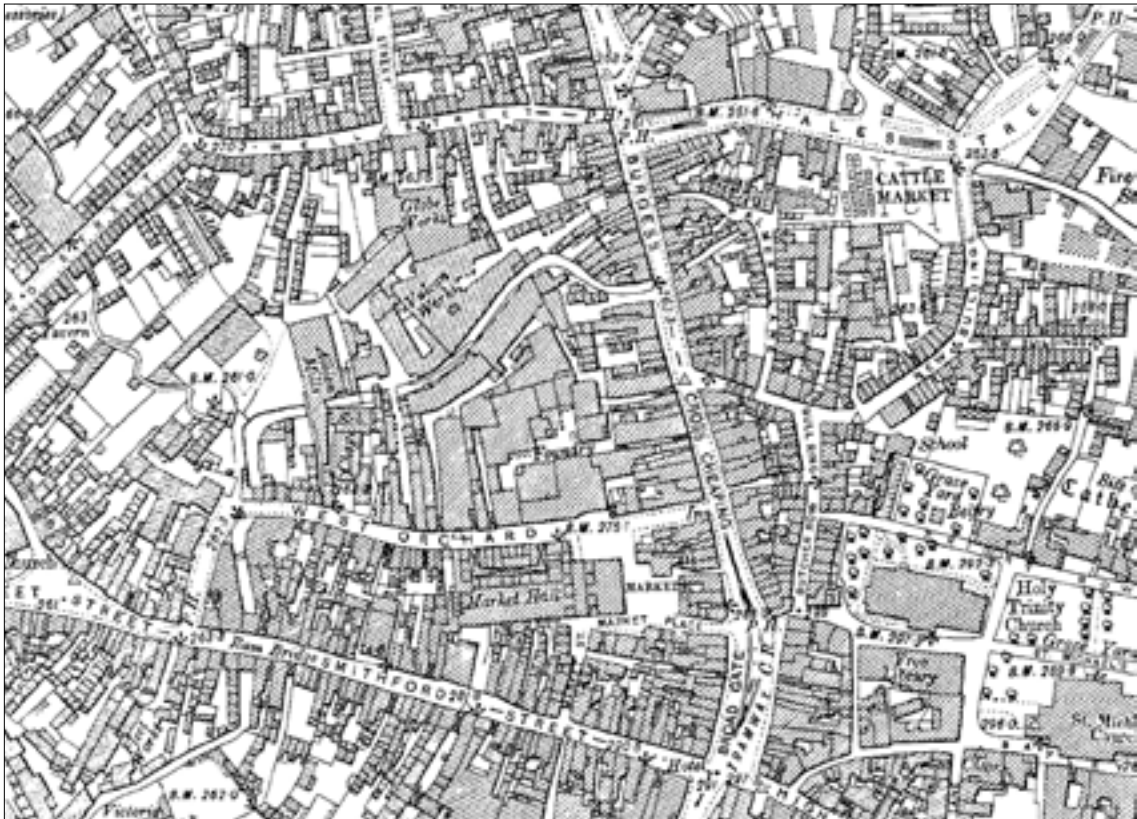


Figure 2 – Central Coventry before the construction of the new roads (Ordnance Survey Warwickshire 1:2500 3rd edition 1906)



Figure 3 – Central Coventry after Corporation Street was built and whilst Trinity Street was under construction (Ordnance Survey Warwickshire 1:2500 4th edition 1937)

ever more congested, leading to the construction of bypasses and new urban roads. It has also been argued that the increased use of commercial vehicles had, at the least, exacerbated the 'north-south divide' by depressing the traditional industries of the north, and migration towards the South-East fuelled development there (Thorold 2003, 214-6).

Many began to fear that this unchecked development was gradually erasing the 'old country'. In 1931 CEM Joad published a highly influential book *The Horrors of the Countryside* in which he portrayed motorists as the villains of the piece, as modern Midas turning everything they touch to 'tin and brass' - a stark contrast to Morton less than five years earlier (Thorold 2003, 142). These concerns had first been voiced a few years earlier but initially appear to have had little impact. The Campaign for the Preservation of Rural England was founded in 1926 and with other organisations it campaigned against roads, roadside cafés, and petrol stations. The Campaign's Clough Williams-Ellis published two books between the wars which characterised Britain as being 'under threat from the 'beast' of development, an 'octopus' whose tentacles – roads and all that came with them – were strangling it' (Hauser 2008, 209).

OGS Crawford, one of the pioneers of aerial photography in archaeology, hated the car (Bowden 2001, 37) and was unimpressed by related developments. In the late 1930s he wrote that 'Modern England may be said to consist of a number of towns and factories connected by excellent motor roads, the whole surrounded by a fringe of seaside bungalows and bombing ranges' (Bowden 2001, 40-1), and described the countryside as 'that part of England which lies in between the motor-roads' (Hauser 2008, 199). He was also one of the first to note the destruction being wrought by gravel extraction for road building and other, related, development (Hauser 2008, 200).

Opposition to individual schemes often seems to have been rather muted at the local level. In Coventry, the construction of Trinity Street required the destruction of an area of picturesque half-timbered buildings known as The Shambles and opposition was voiced at a national level as early as 1914 when it was first proposed (SPAB 1914) and again in the 1930s when Coventry City Council firmly rejected the objections (SPAB 1935). Local residents though seem to have been relatively quiet: 'the demolition of this area was not regretted as much as might have been expected since the buildings had long been in a bad state of repair' (Richardson 1972, 279 n2). Even where there was more opposition it seems to have been short-lived. In Bedford it was reported of the bridge widening scheme (above) that 'at the time there was a lot of criticism; now even the critics admit that little was lost and much gained' (Lock et al 1952, 11).

The post-war era

The end of the Second World War saw a need for rapid reconstruction and, as in 1918, there was a desire by the new Labour government to build a 'better Britain' (Blackhall 2000, 7). Planning for this had begun before the end of the war and resulted in the Abercrombie Greater London Plan of 1945, which set out the planning policies to be adopted after the war and had an impact well beyond London and the South-East. Its main recommendations focussed on the decentralisation of population and industry through the establishment of new towns, with green belts around major cities (Blackhall 2000, 6). Roads were to be a part of this better Britain.

Controlling urban sprawl: new towns and green belts

The New Towns Act 1946 allowed for this dispersal by granting the minister powers to designate new towns and appoint development corporations to carry out the work. These were to be built at relatively low densities with features such as segregation of land use, balanced neighbourhoods (socially and in terms of services) and segregation of pedestrians and vehicles, both in centres and residential areas. This was backed up by 'Town Expansion Schemes' where certain market towns agreed to accept large numbers of people, mainly young families, from London boroughs (Blackhall 2000, 7).

The first new towns were in the South East to take population from London. Stevenage was the first, one of four designated in Hertfordshire with Hatfield and Hemel Hempstead, all 1946, and Welwyn Garden City, 1948. The others were Harlow, 1947 and Basildon, 1948, both Essex, Bracknell, Berkshire, 1949 and the existing town of Crawley, Surrey, dedicated as a new town in 1947. Two new towns were dedicated in the North East, Newton Aycliffe 1947 and Peterlee 1948, both County Durham and in the Midlands, Corby, Northamptonshire was dedicated in 1950. A second group of new towns were dedicated in the early 1960s including Skelmersdale, Lancashire, in 1961, Telford, Shropshire, in 1963, and Redditch, Worcestershire, Runcorn, Cheshire, and Washington, County Durham in 1964. These were followed by a third group in the late 1960s and early 1970s. These included Milton Keynes, Buckinghamshire 1967, the existing towns of Peterborough, Cambridgeshire and Warrington, Cheshire dedicated in 1967 and 1968 respectively, and Northampton in the early 1970s (Darvill & Fulton 1998, 181).

Allied to the new towns was the provision of extensive green belts around major cities intended to check urban sprawl, preserve the setting and character of historic towns and encourage the regeneration of derelict urban areas. They were implemented through measures in the Town and Country Planning Act 1947 and are still regarded as virtually inviolate though they only exist as areas defined in local authority plans (Blackhall 2000, 8). London was the first and remained so until the mid-1950s when local authorities were invited to incorporate green belts into their development plans. They now exist around several English towns and cities such as Stoke-on-Trent, Oxford, Cambridge and York as well as between conurbations thought to be in danger of merging such as Merseyside and Greater Manchester, Nottingham and Derby, Bristol and Bath, and in the West Midlands (BBC 15/8/2007). The Town and Country Planning Act 1947 was much broader in scope than simply setting up green belts, it provided the framework for most subsequent planning law. It repealed almost all existing legislation and set up a highly centralised system of control, effectively nationalising the development rights to land (Blackhall 2000, 8). It also required local authorities to draw up town and county plans but these took a long time, frequently many years, to gain approval.

Town centres

Large areas of cities were also being changed beyond recognition by slum clearance. During the 1950s and 1960s local authorities were 'vying with one another to prove the effectiveness of their clearance and rehousing programmes' (Blackhall 2000, 10). This took place under provisions originally contained in the Town and Country Planning Act 1944, later incorporated into the Town and Country Planning Act 1947, which allowed

for the redevelopment of war damaged areas. It gave local authorities powers to compulsorily purchase these as well as 'areas of bad layout and obsolete development' and areas required for relocated uses - 'overspill areas'. It also allowed local authorities to redevelop these areas themselves (Blackhall 2000, 6).

Once again, Coventry was at the forefront. In the early 1950s, redevelopment created the first pedestrianized shopping centre in an existing city which was intended to vertically separate the car from the front of the shops (Richardson 1972, 297). The first phase was completed in 1955 but being first was thought to have its disadvantages; Coventry 'made the mistakes by which later cities and towns [were] able to benefit' (Richardson 1972, 297). In particular, limited access to the upper levels meant that shops were reluctant to lease horizontally preferring vertical lets and the 'lively terrace' overlooking the central square never came to pass (Richardson 1972, 298). The first element of Coventry's inner ring road, from London Road to Quinton Road (the roundabout bottom right in Figure 4 to the next roundabout west), was begun a few



Figure 4 - The impact of Coventry's ring road. Despite the areas of bomb damage, large numbers of older buildings were cleared. Mosaic of immediate post war aerial photographs overlaid with the modern ring road (© English Heritage. NMR, © Crown Copyright and database right 2011. All rights reserved. Ordnance Survey Licence number 100024900).

years later and opened in 1959 with the final section being completed in the early 1970s. Initially, it was intended to have simple roundabouts, but complex multi-level junctions were adopted following a survey in 1960 (Richardson 1972, 304-5).

Two publications in 1958 and 1963 by Colin Buchanan, a government planner, examined many of the issues involved in accommodating vehicles in existing town centres. He described the situation as an 'extraordinary problem because nothing less is involved than a threat to the whole familiar physical form of towns' (quoted in Perkin 1976, 213). Amongst the solutions identified was the vertical separation of pedestrians and vehicles as attempted in Coventry. This though was only really thought to be practicable in new towns, and only ever partially implemented in England for example at Basildon, Essex or large-scale urban redevelopments, such as Birmingham's original Bull Ring. Far more common was horizontal segregation where areas were pedestrianized, through routes closed and inner ring roads created (Perkin 1976, 215).

Planning legislation in the 1960s largely consolidated previous acts. However, 'Planning Bulletin no 1, Town Centres – Approach to Renewal', 1962, established the principle that the public should be involved in drawing up development plans rather than simply having the right to object to them once they were published (Blackhall 2000, 11). Also the 1967 Civic Amenities Act introduced Conservation Areas and strengthened the protection of trees and buildings of historic value and the 1968 Town and Country Planning Act attempted to streamline the formulation of development plans and formalised the participation of the public (Blackhall 2000, 12).

Motorways

Interest in motorways goes back to the inter-war period; as early as 1937, Lancashire County Council had expressed serious concerns about the number of accidents on the East Lancashire Road, which led to proposals for an entirely new route, with controlled access and restricted to motor traffic only (Yeadon 2005, 6). The most significant factor though was the development of the German *autobahnen*. In 1938, following an inspection of the system by a large delegation, a report was published proposing the construction of a 1000 mile (1600km) road network linking the main industrial centres of Britain (Yeadon 2005, 6-7).

The Second World War put paid to any action as the vast majority of production and fuel was diverted to the war effort. This belt-tightening lasted well into the 1950s, restricting car ownership and road building for well over a decade (Morris 2005, 72, 75-6); in 1950 there were a little over 2.2 million cars on the road compared to 2 million in 1939, though by 1955 this had jumped to more than 3.5 million (Perkins 1976, 206).

It was therefore not until well after the war that motorways became affordable. Although the 1949 Roads Act enabled motorways (Crowe 1960, 19) it was not until 1956 that construction started on the 13km Preston Bypass which opened in December 1958 (Figure 5). This was planned from the start as part of a north-south motorway in the North West, later the M6 (Yeadon 2005, 13-19), and construction of the next section, the 16km Lancaster by-pass, started in 1957, opening in early 1960 (Yeadon 2005, 25-7).

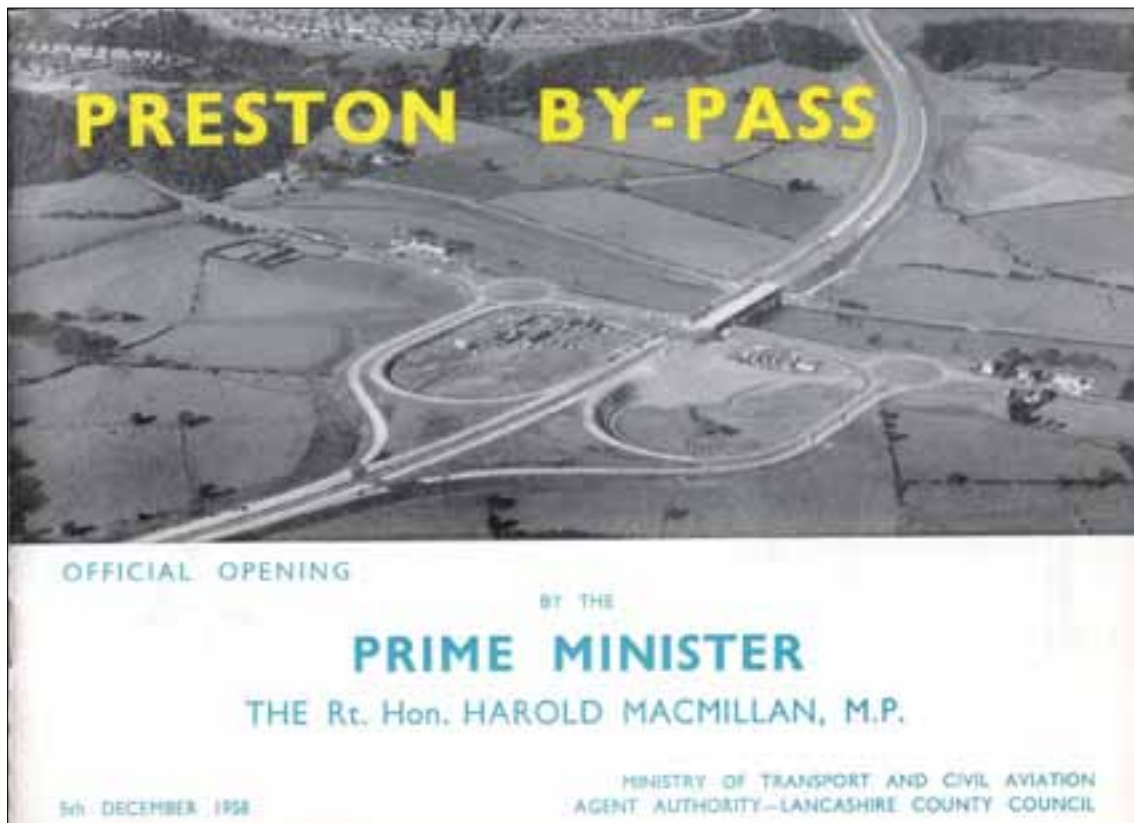


Figure 5 - The front cover of the brochure from the official opening of the Preston Bypass, 1958 (reproduced with permission, Lancashire County Council).

More significant was the construction of the first section of the M1 which ran from Berrygrove to Crick (modern J5 to J18) and included the St Albans Bypass and Dunchurch Link (M10 & M45), a total of 116km. Construction was inaugurated in March 1958 and it opened in November 1959 (Merriman 2007, 104). Meanwhile, the Chiswick Flyover on the nascent M4 had opened earlier in 1959 (Appendix 3). In 1960 the government formally set the target, first proposed in the 1930s, of constructing 1,000 miles (1600km) of motorway by the early 1970s, and subsequently motorway construction increased rapidly. This target was met in December 1971 with the opening of the M5 Michael Wood to Alveston sections (modern J13 to J15). In this year alone 390km of new road opened, more than twice that in any other year (Figure 6 overleaf).

The first decade of motorway construction marked a sea-change in the development of England's road network. Prior to this it had generally been rather parochial, existing roads were re-surfaced, widened and straightened, junctions were improved, some urban roads were re-routed and many towns were bypassed, but these were generally small-scale developments with only local impacts. There were, of course, exceptions; some of the new roads were substantial, several major routes were redeveloped and some new towns were laid out to accommodate the car, but such developments were rare. Motorways were different. They were much bigger in every way than preceding roads. They were wider, their curves more open, their junctions bigger and more complex, they ran for much longer distances on wholly new alignments across virgin countryside and they were built at an unprecedented rate. They were also closed to pedestrians, cyclists, horses and even some motor vehicles.

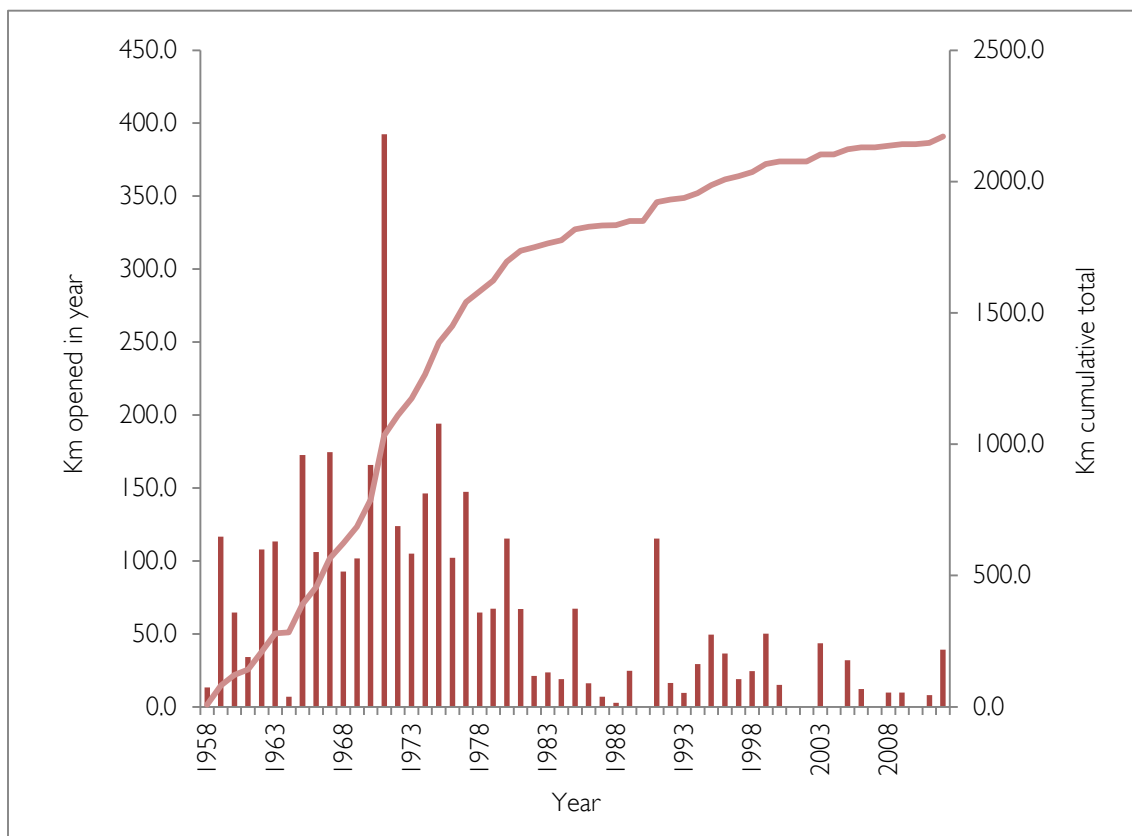


Figure 6 - Length of motorway opened annually (based on information in Appendix 3).

Urban motorways

There are few truly urban motorways in England. Probably the earliest was the A57(M) Mancunian Way in Manchester, the southern part of the city's inner ring road. This opened in 1965 with a second stage following in 1967, but was small and not originally built as a motorway being upgraded in 1970 (MAT nd). More significant was the A58(M)/A64(M) Leeds Inner Ring Road. This was planned in 1955 to relieve congestion caused by through traffic in the city centre and comprised a dual carriageway around the north side of the centre in a substantial cutting. In 1963, just before construction started, it was upgraded to motorway status but it was too late to change the design. The project began with the extensive clearance of hundreds of homes and commercial properties. The first section to be built was 1.9km long, sunk to an average depth of about 6m and included a 500m long 'cut and cover' tunnel, three road bridges, a footbridge and a multi-storey car park (Figure 7). This was followed by two further sections to the east and west and was completed in 1975 (LCL nd). Another early urban motorway was the second section of the M32 running into Bristol (J1 to J2) which opened in July 1970. Although rural along much of its length, at its southern end it ran into the suburbs of Bristol and required the demolition of a railway viaduct, several houses and encroached upon a park.

Concerns

Many of the early concerns about cars and roads, and development more widely, had been set aside upon the advent of war and they continued to be suspended during post-



Figure 7 - Leeds inner ring road under construction, 1964 (AFL03/Aerofilms/A146965 © English Heritage.NMR. Aerofilms Collection)

war austerity and reconstruction drive. They began to re-emerge in the 1950s. A few small groups began to campaign for alternative routes for some sections of motorway such as the M1 through Charnwood Forest and the M4 through the Berkshire Downs (Merriman 2007, 204). One of the earliest campaigns to be successful was opposition to the proposed M6 route through the Lune Valley in Cumbria. A meeting in 1959 unanimously opposed the route on environmental grounds which led to a major consultation exercise and ultimately a different route was chosen (MAT nd).

The developments in Coventry were not entirely unopposed. In 1961 when plans to upgrade Warwick Road, one of the radial routes onto the ring road, to a 24m wide dual carriageway were announced, 47,000 people signed a petition opposing the destruction of 47 mature trees and following a public enquiry the proposal was blocked by the Ministry of Transport (Richardson 1972, 305).

Increasing numbers of urban trunk roads from the mid-1960s onwards led to increasing numbers of groups campaigning against them (Merriman 2007, 204). There seem to

have been a few voices of protest at the time the M32 was built into the suburbs of Bristol in the late 1960s; a BBC report from the time described the M32 as a 'dagger thrust into the heart of the city' (BBC 9/12/2008).

Development continued largely unaffected though and the 1975 book *The Rape of Britain* gave examples of 30 British towns and cities being damaged by development, though they stated that they could have chosen hundreds more. In almost every case new roads featured as significant causes of destruction.

The certainty that cars must be allowed in the cities is the prevalent planning doctrine. If they can't be squeezed into the city, the city itself must be radically altered to make room (Amery & Cruickshank 1975, 14).

The later 20th century

The oil crisis of 1973-74 was an economic turning point:

[The] world economic boom, which began with reconstruction after the Second World War ... ended with the oil crisis ... In the 1970s and the 1980s, Britain's growth performance rarely equalled the achievement of these postwar boom years (Hannah 1994, 340).

The oil crisis not only pushed up the price of fuel but all manufactured goods, cars included; a reduction in the traffic growth rate can be seen in the statistics for 1970-74 compared to the periods before and after (Appendix 2). This seems to have led to something of a crisis of confidence; writing in 1976 Perkin concluded his book *The age of the Automobile* with a chapter entitled 'The End of the Automobile Age?' Whilst this was offset to a certain extent by the development of North Sea oil the later 1970s were characterised by economic and political unrest which culminated in the election of a new Conservative government in 1979 (Hannah 1994, 341-2).

Margaret Thatcher, the new prime minister, was enthusiastically pro-car declaring in the 1980s that 'a man who, beyond the age of 26, finds himself on a bus can count himself a failure' (quoted in Penrose 2007, 54), and that nothing could stop 'the great car economy' (Minnis & Morrison 2010, 19). The new Government also took the view that the planning system was holding back the economic growth of the country and introduced a number of reforms such as the Local Government and Land Act 1980 which allowed for the creation of Enterprise Zones and Urban Development Corporations to ensure the development of run down inner city areas such as the London and Liverpool docklands (Blackhall 2000, 13). One effect of this was to allow out-of-town developments such as shopping centres and high-tech industrial parks, both of which would have been impossible without widespread car use. One consequence of this was to exacerbate inner city decline (Blackhall 2000, 14).

Urban and suburban development

The post-war policy of population and industrial dispersal was already being questioned by the mid-1970s, as inner cities declined leaving large areas derelict or semi-derelict. To combat this many planning restrictions on development were eased or removed by the

Conservative government which created a 'developer led' planning system by the mid-1980s. Many planning authorities failed to use their discretionary powers to produce plans and where plans were produced it was only necessary to 'have regard' to them. Consequently many local decisions to turn down planning permission were reversed by the Secretary of State. By the end of the decade, government policy was changing with control being tightened within the existing legislative framework (Blackhall 2000, 14) and the early 1990s saw policy swing even further in favour of planning control. The Town and Country Planning Act 1990 reintroduced the statutory requirement for district councils to produce local plans and was amended in 1991 to require planning decisions to be made in accordance with these plans except in certain circumstances and strengthen enforcement procedures in cases of planning breaches (Blackhall 2000, 15). The new emphasis was once again on controlling outward growth and promoting urban redevelopment on 'brown field sites'. This time the change of policy was partly a reaction to the growing domestic and international environmental movement (Blackhall 2000, 15) and there were more controls in place than during the 1950s and 1960s.

Motorways

From the mid-1970s motorway construction began to slow (Figure 8). By 1970 1,100km of motorway had been built, which rose by over 900km by 1974. In the next 5 years less than 600km were added, by 1984 only about another 250km had opened and by the end of the decade only just over another 100km were completed, bringing the total to just under 3000km (Appendix 3).

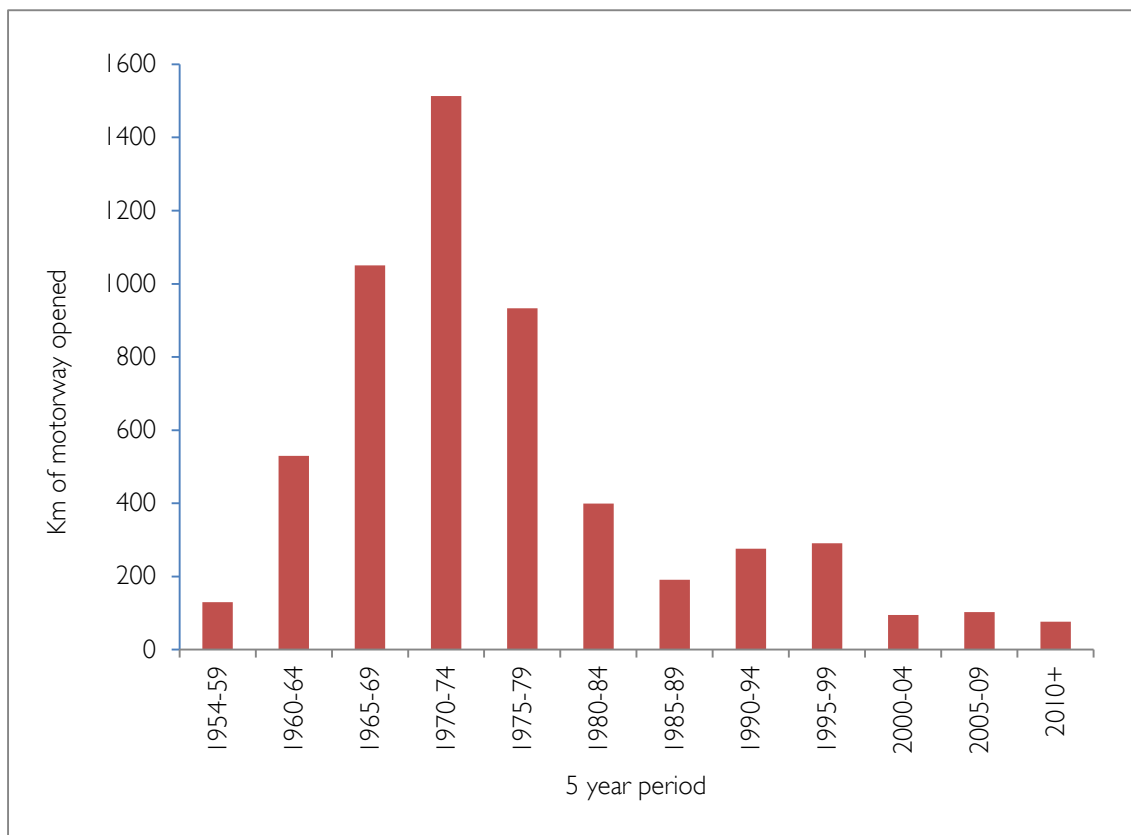


Figure 8 – Length of motorway opened by five year period (based on data in Appendix 3)

There were several reasons for this decline, not the least of which was the amount of motorway construction already completed. Inevitably as the network grew the perceived need for new motorways reduced. There were other reasons though, including the economic downturn caused by the oil crisis (above) and perceptions of motorways were also changing during the 1970s:

Optimistic visions of modern motorways ... [were] being increasingly displaced by melancholic and dystopian visions of motorways destroying both rural and urban scenes (Merriman 2007, 205).

The last motorway to be built with public funding in England was the final section of the M60, the outer Manchester ring road which opened in 2000, and the last significant motorway to be built was the M6 Toll north of Birmingham completed in 2003 with private finance (Figure 9). This brought the total motorway network in the UK to about 3,500km in length and since then only a little over 40km of new motorway have been completed, mostly in Scotland (Appendix 2). Upgrading to motorway standard is continuing on some trunk routes such as the A1(M) however.

Largely omitted from the above discussion is the amount of work that has been (and is being) undertaken to enhance existing motorways (and other roads). Most commonly this features road widening which often includes the replacement or upgrading of bridges and frequently additional associated roads. The first section of motorway opened (the Preston Bypass) was widened from two to three lanes each way less than ten years after it opened (MAT nd) and many others followed such as the widening of the M5, again from two to three lanes, which begun in 1978 and was completed in 1993 (MAT nd). In recent years though, motorways are typically being widened to four lanes or more. The M1 was widened to four lanes each way between junctions 6a and 10. This included



Figure 9 - Toll booths on the M6 Toll (© English Heritage.NMR 26738/035)

widening or replacing 18 bridges, new parallel roads between junctions 7 and 8 and was completed in 2009 (HA 2010). As part of this scheme the M10 was reclassified as part of the A414, effectively a reduction in the length of motorway in Britain. Numerous other schemes have been completed over the years and others are underway or planned. Perhaps the 'most widened' is the M25 which is now five lanes in both directions on many sections and the section between junctions 14 and 15 is dual 6-lanes.

Urban motorways

By the mid-1970s urban motorways were also falling out of favour and the few that were built were generally parts of larger schemes that were never completed. The A167(M) in Newcastle opened in 1975, originally as part of the Great North Road, the A1(M). It has since been renumbered, twice, as the route of the A1 has been changed. It was originally planned as part of an inner ring of motorways around the city but these were abandoned in the 1980s and this was the only section constructed. The western end of the M62 (J4 - J6) opened in November 1976. This just ran into Liverpool's suburbs but like the second section of the M32 in Bristol (above) this only required the demolition of a few houses. The numbering of the junctions clearly indicates that it was originally intended to take the motorway further into Liverpool, to connect with an inner motorway, as planned for Manchester, Leeds and Newcastle, but the scheme was abandoned. The exception was the third and final section of the M32 opened in May 1975. This was fully urban and necessitated the rehousing of many people and the demolition of their homes. The only true urban motorway scheme during the 1980s was the 2.7km extension of the M602 as far as Salford to the west of Manchester which opened in 1982. Similarly only a single section of urban motorway opened in England during the 1990s; an extension to the A635(M) Mancunian Way in 1992 (Appendix 3).

The rest of the road network

It was noted above that the total length of the road network increased by just 4% between 1899 and 1936. In a similar period in the post war era (1955-92) the road network increased in length by almost 20% (Appendix 2). From the mid-1970s the national road network increased in length by over 26,000km. Most of this was the minor road network which grew by more than 24,000km. The majority of the remainder was made up of rural 'A' roads which increased by 1,500km, followed by motorways described above. Urban 'A' roads actually fell in length slightly, the result of reclassification (Appendix 2).

Opposition

In 1975, in a clear echo of Crawford's concerns of almost 40 years before, John Betjeman described his fear of:

England becoming a few acres of preserved countryside between concrete fly-overs, spanned by cafeterias thrumming with canned music and reeking of grease (quoted in Merriman 2007, 205).

Rather than individual schemes, campaigners began to challenge broader transport policy and the justification for new road schemes (Merriman 2007, 226-7). This affected them

at the planning stage and eventually had an impact on the numbers of roads being built but given the length of time from inception to completion the effects were not felt for many years.

During the 1990s anti-roads protestors became increasingly militant. The origins of this lay in the social unrest of the 1980s. Initially, this appears to have been largely apolitical with widespread riots, particularly in Brixton, in 1981 and others in 1985, being largely the result of deprivation (Scarman 1981). Events such as the Miner's Strike of 1984-85 and the anti-nuclear protest at Greenham Common air base politicised a significant number of people. At the same time the wider environmental protest movement was developing and there was opposition to large scale developments of many sorts such as the power station at Grain, Kent, and runways at Heathrow and Manchester airports.

Twyford Down on the M3 became the site of the UK's first road protest camp in December 1991 and featured both tunnels and tree sits (see case study). Trees were also occupied at Jesmond Dene near Newcastle in 1993 (Eco-action 1999), in advance of the construction of the A1058 Cradlewell Bypass, and these were followed by others in the Stanworth Valley near Preston in 1994 (Eco-Action 1996) as part of the 'No M65' road protest. The M11 Link Road in east London was the scene of major anti-roads protests involving large-scale house squats, at this time (Moran 2009, 214-8). In 1994, protests at Solsbury Hill near Bath, on the A46 Batheaston to Swainswick Bypass, have been described as 'the environmental campaign which divided a community and changed Government transport policy for ever' as, although a failure, it was 'credited with boosting other campaigns against road-building projects across the country, which eventually led to 300 road schemes being axed by the Government' (*Bristol Evening News* 5/2/2009).

The A34 Newbury Bypass, Berkshire, was the site of some of the largest anti-road protests in Europe during the 'Third Battle of Newbury' in 1996, a reference to the first two battles of Newbury during The Civil War in 1643 and 1644. This event has been claimed to mark 'the end of Thatcherism' and led to most of the last few road schemes under that government being put on hold or cancelled altogether (*The Guardian* 11/1/2006). Some schemes continued though, such as the widening of the A30 in 1999, where protests at Fairmile in Devon involved tunnels and led to Daniel Hooper, better known as 'Swampy' becoming a nationally famous figure. Ironically, following its decommissioning, the runway at Greenham Common air base was broken up and crushed to produce aggregates which were used in the construction of the Newbury Bypass (Schofield 2007, 66). When this decision was taken the potential heritage value of the site was not recognised and so the runway was not considered for preservation, but there was also a strong local lobby to return the land to its former common status.

There are numerous recent and on-going protests against roads that have included the M1 widening, M6 widening, the Heysham to M6 link, the South Bristol Link Road, Bexhill to Hastings Link Road, Norwich Northern Distributor Road, Weymouth Relief Road, Kingskerswell Bypass and the Westbury Bypass.

The vast majority of the campaigns above focussed on the impact of roads on the

natural environment and their impacts on heritage assets were mentioned a long way behind, if at all. The case of the Hereford Eastern Bypass illustrates the point. A 1987 planning consultation considered two routes, to the east and west of the city, eventually choosing the eastern. The Department for Transport (DTp) then commissioned the Archaeology Section of Hereford and Worcester County Council to evaluate the route for an Environmental Impact Assessment (EIA) and this identified 89 potential sites, none of which were thought to require preservation in situ, although the significance of the Lugg Meadow was acknowledged. There was then a public enquiry in the early 1990s at which Hereford Nature Trust demonstrated the unique historic and ecological character of this meadow to the inquiry reporting that it was not only one of the largest such survivals in England but the only one in which the management regime had been maintained. The eastern route was subsequently rejected, in part because of the unique nature of the meadow. The Inquiry:

Demonstrated that a Historic Landscape, such as the Lugg Meadow, is of importance and well and truly worthy of preservation (Boddington & Shoesmith 1993).

Being specifically focussed on the impact of a road scheme on an archaeological site, the anti-road protest known as 'Camp Bling' was the exception rather than the rule. The camp was set up in 2005 to obstruct plans to widen Priory Crescent in Southend, Essex (A1159) which would have destroyed a high status Anglo-Saxon tomb discovered in 2003, that of the 'Prittlewell Prince'. The protest was abandoned in 2009 after the road plans were dropped (BBC 30/4/2009), but resumed briefly after new plans were proposed (BBC 20/3/2010).

Many anti-road protests were themselves opposed and there have been numerous campaigns for roads. The campaign for the Boston Bypass in Lincolnshire is notable for the single-issue political party, the Independent Bypass Group, which in May 2007, took control of the local council (BBC 4/5/2007).

ARCHAEOLOGY AND ROAD BUILDING

Archaeological interventions before the Second World War

Before the First World War improvements were made to existing roads and a few new roads built. It has not been possible to identify any examples of archaeological interventions in response to these developments but it seems likely that increasing road works would have led to some archaeological discoveries. Any archaeological responses were probably piecemeal, differing little from antiquarian discoveries made during the construction of turnpikes, canals and railways in earlier centuries. Discoveries would have been random and if they were to find their way into the archaeological record depended on the workmen or overseer reporting them to a local enthusiast.

The first major modern road building campaign was during the 1920s and 1930s. In this period most archaeological discoveries probably continued in an 'antiquarian' fashion. Most of these roads were dug by hand rather than by machine and workmen found things whereas machines tended to remove them wholesale (Fowler 1974, 113, 115). However, of the references identified during this period the majority (three of five) were planned responses to road schemes. This is likely to be because it was unusual for a road to be the motivating factor behind a planned archaeological project so it was mentioned and so could be identified here. The majority of casual discoveries probably only ever merited a note in a local journal and the cause of their discovery would not be given.

At Springhead, Kent in 1921-2 the complete removal of the old roadway and the construction of a new arterial road, later the A2, exposed much of the line of the Romano-British Watling Street and led to the discovery of a kiln, some burials and a tiled arch (Penn 1965; VCH Kent III 1932, 91-2). This was apparently not an archaeological intervention in response to road construction, but a record of finds made during construction and passed on to an archaeologist some time later; the author thanked the Roads Department of the Ministry of Transport for supplying a schedule of the discoveries and allowing him to examine the engineer's records of the road-widening excavations (Jessup 1928, 343).

In some cases though, these 'antiquarian' discoveries led to planned excavations. In 1921 at Bideford-on-Avon, Warwickshire:

Articles were brought to light indicating an Anglo-Saxon cemetery [when a] new road cut ... was undertaken to provide work for ... numerous unemployed labourers (Humphreys et al 1923, 89, 92).

Three months of excavation followed in 1922, supported by a grant from the Society of Antiquaries, which revealed over 100 inhumations including grave goods, as well as several cremation burials (Humphreys et al 1923, 111-16 and plan after).

In contrast to archaeological responses to discoveries made during construction, there are a few examples of planned archaeological work in advance of road schemes in this period. The work at Sheepen to the north-west of Colchester during the 1930s is perhaps the earliest of these, though the claim that it 'should probably be considered the

first urban-rescue dig' (Ottaway 1992, 10) may be going too far since the site was rural. It is however, the earliest example of a rescue archaeology committee identified:

The Colchester Excavation Committee was formed early in 1930, when it became known that the Colchester By-Pass Road [today the A133 Colne Bank Avenue] was to run across the area of ancient habitation at Sheepen (Hawkes & Hull 1947, v).

The earliest truly urban archaeological response to threatened road construction identified also took place in the early 1930s, though perhaps slightly later. When the Chester Corporation was making plans to straighten Little St John Street and replace it with a direct east-west road (as part of the planned inner ring road mentioned above) the proposed route would have cut through the recently discovered Romano-British amphitheatre (Williams 1929). This led to extensive excavations on the line of the proposed road in 1930-31 (Figure 10), though the archaeologists had to obtain permission to carry out their excavations and fund them by appeal ('PHL' 1932, 67), conditions which remained typical for many decades. This is also the first known case where public opposition, based on the presence of an archaeologically significant site, led to the abandoning of a road scheme. It was eventually vetoed by the Ministry of Transport in 1933, though it took 20 years to secure the site and 20 more before the amphitheatre was consolidated and opened to the public (Thompson 1976, 128-33).

The first identified example of what could be called 'developer-funded' archaeology took place in 1935 when a Neolithic causewayed enclosure was examined at Whitehawk Hill

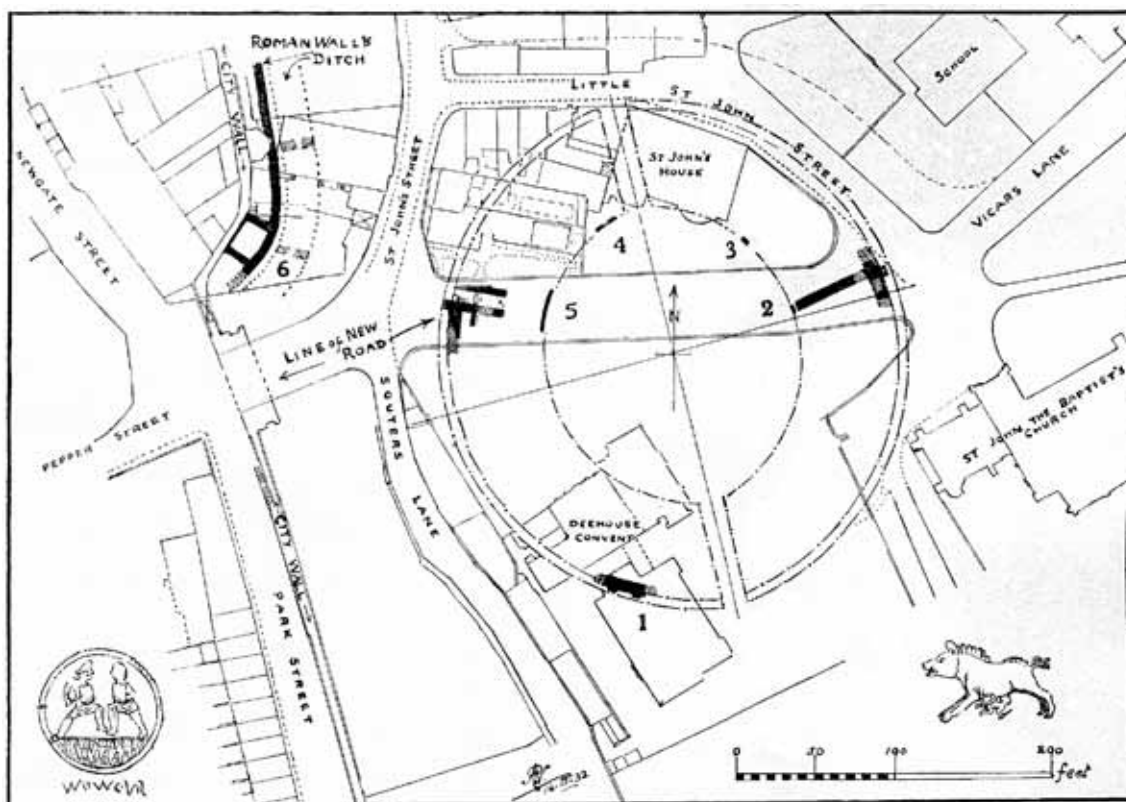


Figure 10 - Chester in 1930-1 showing the planned road running through the recently discovered amphitheatre ('PHL' 1932).

on the outskirts of Brighton, East Sussex. A new road was to be built across the camp and excavations were undertaken that examined the lines of all four enclosure ditches. The arrangement and attitudes sound strikingly modern:

This road was to cut right through the centre of the camp, and as the latter is scheduled under the Ancient Monuments Act, permission for its construction had to be obtained from HM Inspector of Ancient Monuments. The road being an urgent necessity, permission was granted on condition that its site should first be excavated archaeologically by the Sussex Archaeological Society – at the cost of the Brighton Corporation. This arrangement worked very satisfactorily, for while the corporation got their road at relatively little additional cost, the damage done to the camp was more than counter-balanced by the knowledge and the specimens acquired during the excavation (Curwen 1936, 60).

Also during this period archaeological prospection in the form of aerial photography was taking off, under the aegis of OGS Crawford at the Ordnance Survey. It was rarely applied to road schemes before the late 1960s though. Crawford was also one of the first to argue, in the early 1930s, that it was not enough to preserve individual monuments; their broader landscape context was of vital importance too (Hauser 2008, 101). He was probably the first to use the term 'palimpsest' to describe the English landscape, perhaps as early as 1938 (Bowden 2001, 42-4).

Rescue archaeology

For much of its history, road-related archaeology formed a part of the broader 'rescue archaeology', that is archaeology undertaken in direct response to the threat of development. According to Professor Barry Cunliffe the 'heroic age' of rescue archaeology in Britain:

Began in 1938 when Brian O'Neill, Chief Inspector of Ancient Monuments, began to use Government funds to pay for archaeological excavations necessitated by a spate of military constructions in the run-up to war, and ended in 1972, the year in which the first full-time archaeological units came in to being (quoted in Butcher & Garwood 1994, 7).

During these decades about 1000 rescue excavations were undertaken (Butcher & Garwood 1994, 7).

The 1940s and 50s

The Second World War and the following austerity years restricted both car ownership and new road construction. It was consequently not until the 1950s that significant road construction resumed. Rescue archaeology also appears to have been limited. In 1953-4 only £18,500 was spent on all rescue excavations in the UK (Walsh 1969, 15).

The threats to archaeology during this period have been summarised as:

Initially ... from the construction of airfields with the new mechanical earthmovers, and later from the building of new housing and factory estates, the increasing mechanisation of agriculture and ... the redevelopment of the centres of historic towns (Horsler 1993).

Roads are notable for their absence.

At this time, most rescue archaeology took place under the aegis of the Inspectorate of Ancient Monuments (IAM), part of the Ministry of Works, later the Ministry of Public Buildings and Works and eventually the Department of the Environment (DoE). The IAM was established in the late 19th century and undertook or requested excavations from that time on, including some of those mentioned above such as Whitehill Camp. This work was undertaken both directly by the Inspectorate itself and by other bodies such as museums, universities, and local archaeological societies or committees that it grant-aided. However, these excavations were generally small scale, relatively few in number and not systematically published.

Archaeology in response to urban development was often dealt with by committees. Colchester was probably the first (above), but others such as Canterbury were set up during the war; the city had been severely damaged by bombing in 1942, and the first urban rescue excavations there, in 1944, were undertaken by the Canterbury Excavation Committee (Lyle, 1994, 110).

The first identified post-war example of archaeological investigations taking place on a road scheme dates from October 1956. On a saddle to the north of the Iron Age hillfort of Battlebury Camp, Wiltshire, the War Department was constructing a road when numerous pits and post-holes were uncovered. The site was examined for the Ministry of Works, presumably by the IAM, and although very few of the features were investigated in detail it was concluded that the site was:

A substantial settlement whose importance [could] hardly be exaggerated in view of its proximity to the camp (Chadwick & Thompson, 1956, 262).

From this point onwards it has been possible to identify archaeological projects on road schemes in most years and it was soon recognised that road construction was a significant threat to archaeological sites:

Because a number of sites of archaeological interest have been threatened with destruction in various ways – improvement works on trunk roads is one cause – the excavations section of the Ministry of Work's Inspectorate of Ancient Monuments ... had to organise "rescue digs" at 44 ... sites during the 1957-58 season. In addition ... financial help was given to 15 excavations committees or museums engaged in similar urgent rescue or research operations in many parts or the country (*The Times*, 24/5/1958, 8).

It has not been possible to identify exactly how many of these projects related to road schemes. The only identified site that might be from the period covered by the above article is Thurnham Romano-British Villa in Kent, which was excavated in advance of

the construction of the Maidstone Bypass, now part of the M20. The excavation was undertaken by Elizabeth Pirie who later produced an article on the excavations under the aegis of the Ministry of Works (MoW 1962, 14). The contracts for construction were awarded in 1958/9 and it opened in 1960/1 (McCoubrey 2009, 346) so the dates may fit, though it seems more likely that the work took place later in 1958 or 1959, immediately in advance of construction.

A few other examples from the late 1950s have been identified. At Bokerly Dyke, Dorset, road straightening led to a rescue excavation by the IAM on part of the dyke and a Romano-British settlement (Figure 11). The excavation lasted for four weeks in 1958 and was followed by a watch on the 'mechanical operations' (Rahtz 1963, 65, n2); the rampart was bulldozed and 'under these difficult conditions Mr Butler observed what he could' (Rahtz 1963, 75). This highlights the problem of a lack of time and inflexibility in the road scheme encountered on many rescue excavations.

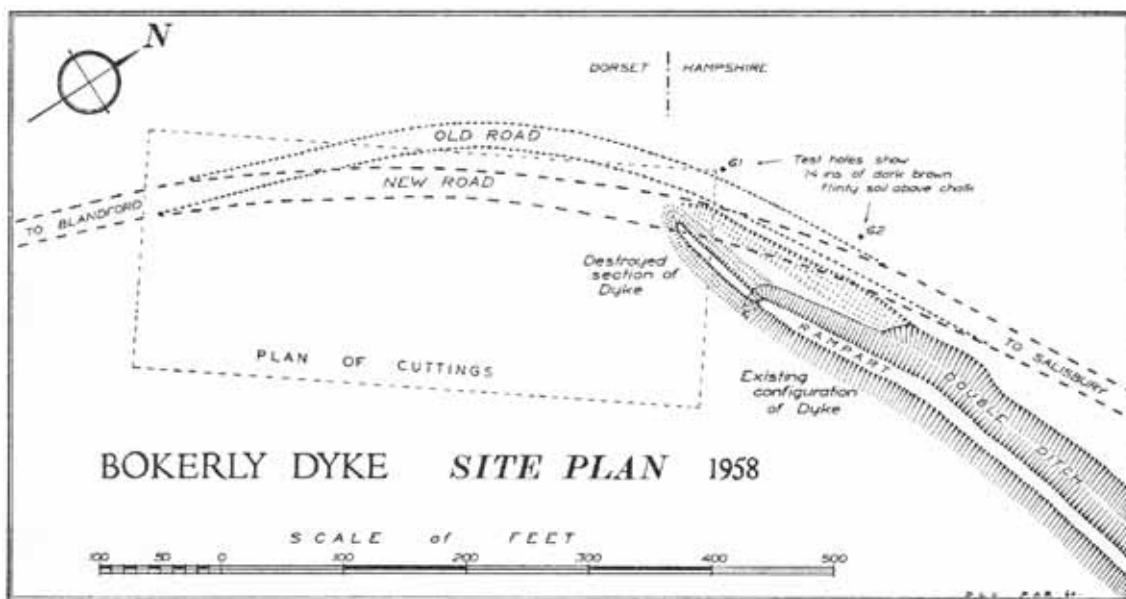


Figure 11 - Area of the excavations at Bokerly Dyke (Rahtz 1963, Figure 3, reproduced with permission www.royalarchinst.org/publications/journal).

At about the same time the new Catterick Bypass in North Yorkshire (the A1) was to run through the centre of a known Romano-British town and fort. This led to rescue excavations in 1958/9 which were extensive but 'in the usual fashion of the time there was neither time nor money to write up the site' (Wilson 1999, 379). This was another problem with early rescue excavations, directors or supervisors were generally paid for their time on site, but report preparation was unfunded. As the pace of development increased, particularly through the 1960s, they increasingly moved on to their next project before the post-excavation work on the previous project was complete. Consequently, a considerable publication 'backlog' began to build up (Butcher & Garwood 1994, 9).

An example of yet another type of problem came to light as a result of pre-construction survey work for the M25 in the early 1970s. At Runnymede Bridge, Egham, Surrey, it was discovered that:

Archaeological remains had previously been turned up during construction of the adjacent A30 Bridge in 1959-60. Although this information was suppressed at the time, a report written later indicated that wood, bone and pottery, apparently of Neolithic date had been disturbed (Longley & Needham 1979, 263).

How many sites may have been covered up like this, but never seen the light of day?

The 1960s

In 1962, the Ministry of Works began publishing annual reports on the fieldwork that the IAM had undertaken or supported over the previous year. These took the form of an overview report followed by individual site summaries. Whilst not comprehensive, each report and summaries provides a useful indication of the rescue investigations undertaken on what were considered to be priority sites through a crucial period. Unfortunately, it was not standard practice to record the reason for an excavation, even in a publication focussed on rescue work, so it is difficult to know how many projects related to road schemes, although several trends could be identified.

Initially, the number of project summaries mentioning roads continued at a similar level to that outlined above for the later 1950s. In the five year period 1956-60, five roads related projects have been identified from the literature survey. In the next five year period, from 1961-5, five roads projects were identified from this survey and another five from the IAM excavation reports. Although this doubles the total for the five-year period it is clear that this is due to the additional information contained in the new publication and therefore probably does not reflect any significant rise in the actual number of road projects. The projects identified in the excavations reports include work at Wall, Staffordshire (on the new A5), Parham, Sussex (the new A238), Mancetter, Warwickshire (the widening of Watling Street) and Polhill, Kent (road works on the A224) (MoW 1962, MPBW 1963 – 1966). Those identified from the literature survey include Irchester near Wellingborough, Northamptonshire (Hall & Nickerson 1968, Knight 1968), Baldock, Hertfordshire (Moss-Eccardt 1988), further work at Springhead, Kent (Penn, 1966), and Ascott-under-Wychwood (CA 1971a). This last example is mentioned in the excavations reports from 1965 onwards but the threat is not, illustrating one of the problems with identifying road related archaeological interventions.

There was no specific mention of road building as a threat to archaeology in the main Ministry reports until 1965, when it featured fourth in a list of five, amongst industrial development, housing, agriculture and mineral working (MPBW 1966, 1). As noted above, roads were identified five times in the project summaries to this date. There were 32 other mentions of threats including house building or other development (10 mentions), agriculture (9), levelling (5), mineral extraction (3), pipelines (2), topsoil stripping, a power station and a reservoir. This would appear to place roads third (about 15% of identified threats), if it is assumed that 'levelling' was probably for other purposes, perhaps of slightly more significance than it was accorded. Two more road projects were identified in the report for 1966, in advance of road straightening at Durrington Walls, Wiltshire and road widening at Great Casterton, Rutland (MPBW 1967).

From 1967 onwards, there was a marked increase in the numbers of roads-related archaeological projects that could be identified in the excavations reports. In this one year there were eight mentions of roads as threats in the IAM report (MPBW 1968), more than in all the previous reports put together, and a further project in Hereford (Rahtz 1968) mentioned in the summaries was identified as a road project from another source, bringing the total to nine, almost half of all threats identified. Eight projects were also identified in the IAM report for 1968 when a total of £148,000 was spent on all rescue archaeology in Britain by the IAM (DoE 1973, 2). Again, an additional road-related project mentioned in the report was identified from another source, at Bishops Waltham in Hampshire (CA 1968, 274-5).

Archaeological records

This period saw the establishment of the National Monuments Record and the origins of local Sites and Monuments Records (SMRs). The National Monuments Record had its origins in the National Buildings Record, set up in 1941 as a systematic photographic record of buildings threatened by bombing. The NBR was transferred to the Royal Commission on the Historical Monuments of England in 1963 when it was set out that it should become a 'wider record or collection, containing or including architectural, archaeological and historical information concerning important sites and buildings throughout England'. In order to do this it incorporated the Ordnance Survey Archaeology Division's records and soon became the National Monuments Record, a public archive with archaeological, architectural and air photography sections (RCHME 1981). What is generally considered to be the first SMR was set up after the foundation of the Oxford City and County Museum in 1965 developing gradually over a period of several years (Benson 1972, 226). It was initially also based on the Ordnance Survey Archaeology Division index cards, which recorded archaeological sites depicted on their maps, and was subsequently enhanced by a 'devoted group of volunteers' known as the 'Study Group' (Benson 1972, 226). Initially, it consisted entirely of card indexes, annotated maps and other paper-based records together with a range of slides and photographs. It provided a 'starting point for research', and 'essential information to determine priorities in rescue work', and could 'indicate those geographical areas where more work is needed and also topics which require attention' (Benson 1972, 232).

The Walsh Report

In the later 1960s, problems with the protection of archaeological monuments were examined by the *Committee of Enquiry into the Arrangements for the Protection of Field Monuments*, known as the 'Walsh' Committee. This was set up in 1966 and sat for two years publishing its report in February 1969 (Walsh 1969). Initially, the primary concern was the threat to field monuments from 'modern cultivation' (Walsh 1969, 6) but identified threats included the 'obvious threat' of motorway construction as well as reservoirs, pipelines, urban growth, opencast mining and gravel digging (Walsh 1969, 11). More indirect threats identified were widespread ignorance of the existence and significance of monuments, their physical neglect and inadequate records and inspection (Walsh 1969, 11-12). Of 12 examples of damage to monuments given in an appendix, one was due to road improvements; an unnamed local authority bulldozed the ramparts of a major Iron Age hillfort 'to improve the visibility of a 'B' road' (Walsh 1969, 75).

The Committee made over 40 recommendations, both major and minor. Some of these had already begun to come into effect by the time the report was published, such as the provision of a 'consolidated record of all known field monuments ... held by the County Planning Authorities' (Recommendation 7, Walsh 1969, 1) and an increase in the role of local authorities generally (Recommendation 34, Walsh 1969, 4). Some, such as taking more monuments into guardianship (Recommendation 3, Walsh 1969, 1) or the employment of more archaeological officers by local authorities (Recommendation 37, Walsh 1969, 4), began to come into effect fairly soon after the publication of the report. Others took longer, and some, such as the star grading of scheduled monuments (Recommendation 4, Walsh 1969, 1), were never implemented.

Missing from the report was any indication that archaeological considerations should prevent development: destructive agricultural operations should only receive 'more positive instructions' on their limitation and should give statutory notice of works and this only on starred scheduled monuments (Recommendation 12, Walsh 1969, 2); mineral extraction groups should be approached 'to invite their cooperation' (Recommendation 16, Walsh 1969, 2); and despite being mentioned as threats there is no reference to road building or urban growth at all. The report did however recommend strengthening the 'machinery of control' (Recommendation 19, Walsh 1969, 3), though again this was principally focussed on scheduled monuments.

Rural projects

Prior to the foundation of the first motorway committee in 1969 there were relatively few archaeological projects on rural road schemes, though as outlined above the numbers were rising. The first half of the decade saw an average of two road projects identified per year which rose to ten in 1967 and nine in 1968 (above). In 1969 the first of the motorway committees was established (below) and not surprisingly there was a large jump in the number of projects mentioning roads as threats in the IAM reports. From 176+ individual site reports threats could be identified in 58 cases and of these 19 mentioned roads, however, the majority of these related to construction on the M5, M4 and M3 (DoE 1970). A project mentioned in the excavations report, at Chelmsford in Essex, was identified as being on a road scheme from another source (CA 1973b), bringing the total to 20.

A minority of projects were on new roads. Throughout the 1960s new roads, excluding motorways, were only mentioned as threats 12 times. Some of these were relatively minor, such as the road on a new housing estate in Gadebridge, Hertfordshire which cut through a 'swimming pool' revealing the now well-known Romano-British villa (CA 1970a), or the 'new road just behind Welwyn church' where:

Mr Tony Rook and the Lockleys Archaeological Society unearthed over 100 Roman burials from the jaws of the bulldozer (CA 1967).

Others were considerably larger. Work on the A10 Braughing Bypass, Hertfordshire began in 1968 but continued for five years and revealed numerous sites. Here, there appears to have been an evaluation phase with some degree of project development in response to the road scheme:

A trial excavation showed there was archaeological material along the entire length of a proposed link road through the site of the Roman settlement. A major excavation will be required if the road is to be constructed on this line (DoE 1970, 18-9).

The remaining 15 or so projects were on improvement schemes, or unspecified 'works' and so on. These too could range from the small to the very large; from minor enhancements on minor roads leading to small excavations, such as at South Acre, Norfolk where road widening in about 1966 exposed 12 skeletons in the area of a known medieval leper house (Wells 1967), to very large projects such as the widening of the A2, Kent which was to convert the road to a dual carriageway and in effect required the construction of a completely new road parallel to the existing one. Here the archaeological work began in 1964 continuing for eight years (Macpherson-Grant, 1981).

Perhaps the most archaeologically significant project of the period was the straightening of the A345, Wiltshire, where it ran through the massive prehistoric henge monument, Durrington Walls. The road scheme involved the construction of several hundred metres of new carriage way through the eastern side of the henge, as well as the widening of other sections. Archaeological work began in 1966 and continued through to 1968 (front cover). The main enclosure ditch was sectioned and several smaller henges within the main one were located as well as various timber structures. Finds included 'masses' of Neolithic and Bronze Age pottery and 450 antler picks (Wainwright 1967) and several phases of activity were identified, including pre-henge occupation (Wainwright & Longworth 1971).

At this time archaeological considerations appear to have had little effect on road planning. At Baldock excavations were undertaken in 1968 where 'a narrow strip along the edge of this scheduled field was required for road widening' (MPBW 1969, 10). It is clear that the road had been planned and that archaeology was a minor consideration. There was no sense that scheduled status should take priority.

Urban projects

Much urban redevelopment was intended to manage the impact of rapidly rising car use, and often featured new roads as well as car parks and pedestrianized shopping centres. The archaeological impacts of this development were usually dealt with by urban archaeological committees which had been in existence since the 1930s. By the early 1960s many were in existence, particularly in towns with Romano-British origins such as Chichester and Winchester (MoW 1962, 2). More were being set up each year such as Cirencester, Dorchester-on-Thames and Leicester in 1962 (MPBW 1963, 1).

Only one urban project between the end of the war and the end of the 1960s directly related to a road scheme has been identified. This was in Hereford, where, in 1967, work by two committed individuals in advance of the construction of the inner ring road located 10th century features thought to relate to the town defences. Their efforts were followed up the following year by the Hereford City Excavation Committee with a grant from the Ministry of Public Buildings and Works. The work revealed a scatter of prehistoric flints and Romano-British features as well as four phases of the Anglo-Saxon

defences below medieval deposits and put Hereford 'at the forefront of current research on Anglo-Saxon town defences' (Rahtz 1968, 242-6).

Another project that may be considered to result from a road scheme took place a few years earlier on a known Romano-British fort in South Shields:

In 1965, the houses that covered the northern part were demolished to make way for a new road and some council flats [archaeologists] laid down a series of trenches to determine the layout of this part of the fort (CA 1969, 110, 112).

It may be more accurate though to consider this road as part of the housing development. In any case it appears that the scheme never went ahead, apparently stopped to allow the preservation and presentation of the fort.

The motorway committees

The first reference to any form of work on the line of a motorway identified was to a scoping exercise on the M4 in Wiltshire:

The Archaeology Committee of the county society studied the road plans in 1965, organised selective field checking and decided it could but wait for construction to begin (Fowler 1971, 51).

The first mention of a more substantial rescue project wasn't until 1968 on the 'Pennine Motorway' in Yorkshire (possibly the M62, or perhaps the A66) where a strip through an annexe of a known Romano-British fort was excavated (MPBW 1969). At this time a complete lack of archaeological work appears to be far more typical; there were no archaeological investigations in advance of the construction of the M32 in the late 1960s and 1970s (Peter Insole pers comm). By 1969, over 1000km of motorways had opened and many more were under construction. This would seem to support Fowler's assertion that:

Almost 1000 miles of motorway had been built in Britain without many archaeological eyebrows being raised by the time the M5 Research Committee was formed in 1969 (Fowler 1971, 50-51; Figure 12 overleaf).

Although, by the end of 1969 only 686 miles (1104km) of motorway had been opened several hundred more must have been under construction since the 1000 mile (1600km) figure was passed only two years later, in December 1971. However, it should be noted that the Walsh committee (above), which sat from 1966 to 1968, well before the M5 committee was set up, had already drawn attention to the 'obvious threat' of motorway construction.

The formation of the M5 Research Committee in 1969 marked a watershed in roads archaeology. In that year, the number of archaeological projects undertaken or grant-aided by the IAM that mentioned roads as threats more than doubled to 19 (DoE 1969, 1970). Most of this sudden rise was clearly due to a spate of activity on motorways. The M5 Research Committee undertook eight discrete projects reported to the IAM, another six or so were reported by various bodies on the line of the M4 and another on the M3 (DoE 1970). Altogether, more than two thirds of all identifiable road-related



Figure 12 – Motorways in England open or under construction at the end of 1969. Red indicates those with some form of archaeological intervention (based upon Fowler 1974, Appendix 3, and OS OpenData Strategi mapping available from <http://www.ordnancesurvey.co.uk/oswebsite/products/strategi/index.html>).

projects were on these three motorways. From this point onwards the number of identified projects in response to road schemes increased for several years reaching a peak in 1972 (DoE 1973).

The M5 committee appears to have been the first set up specifically to deal with the threat from a major road scheme (apart from the Colchester Excavation Committee in

1930) and was soon followed by others such as the M40 Research Group in November 1970 (RN 1973), the M11 Excavation Committee by 1971 (DoE 1972, 1) and the M3 Archaeological Research Committee in February 1972 (Fasham 1991, 80). Several other archaeological groups were also set up primarily in response to road schemes such as the South Hampshire Archaeological Rescue Group which worked on the M27 which was established in 1971 (RN 1973, 11). The motorway committees did not restrict themselves to working on motorways. In 1972, the M11 Regional Committee organised field walking on the route of the Newmarket Bypass and was planning excavations on the sites being revealed (RN 1972c).

Many of the committees and other groups pioneered what would later come to be recognised as landscape archaeology (see for example Fowler (ed) 1972). Prior to this, archaeological work on roads had been focussed on known sites threatened by their construction. During this period a phased 'whole-route' methodology began to emerge. This was perhaps first clearly articulated by the M40 Research Group in 1971 as 'five phases': field reconnaissance; assessment and trial; excavation of major sites; vigilance during construction; and publication (Davies 1971). Reconnaissance might include taking and examination of aerial photographs, historical research, examination of field names and so on. Assessment usually involved at least the walking of the route, but often other techniques were employed such as field-walking and geophysics. Where possible, sites were excavated but initially this was frequently almost under the blades and buckets of the construction. Over the first few years though the situation gradually improved:

We were able to effect a change from salvage to rescue to controlled archaeology as we first worked alongside, then just ahead and finally months ahead of the machines (Fowler 2009, 46).

Ideally this was followed by surveillance during road construction. Many features and sometimes whole sites were found this way, such as the Anglo-Saxon settlement at Abbots Worthy on the M3 (Fasham 1991, 92). Post-excavation analysis and publication by most groups still remained largely on an *ad hoc* basis as most grants were for excavation work. The IAM began to award grants for this work from the early 1970s though the amounts were small. In 1973, the first year that such grants were itemised, £28,540 was awarded for post-excavation work and £7,993 towards publication costs, compared to £508,309 in grants to bodies 'engaged in rescue work' (DoE 1974, 1).

In 1970, the DoE awarded grants for work on at least eight and probably more than 13 separate projects on the M5 and the M4 (DoE 1971, 43-5). In 1971 work expanded to include not only the M4 and M5 but also work on the M11, the M27 and the M40 (DoE 1972, 43-5) and grants were awarded to a very similar number of projects; at least eight and probably more than 12. The DoE reported that:

The extension of motorways in many parts of the country constitutes a ... grave threat to many archaeological sites of all periods. The department has continued to support Committees specifically set up to survey and excavate important sites in advance of construction eg on the lines of the M4, M5 and M11. Experience to date has shown a heavy density of sites in most of the areas surveyed (DoE 1972, 1).

In 1972, 'a significant number of grants were made to motorway committees for survey and excavation in advance of construction' (DoE 1973, 2). This amounted to at least 27 projects and probably several more, though in part this may have been because motorway projects were reported separately in the report so were easier to identify. They included the M3, M5, M11, and M40 Committees as well as other groups for work on the M23/25 in Surrey, M27 in Hampshire, M56 in Cheshire/Greater Manchester and M69 in Leicestershire/Warwickshire (DoE 1973, 20-4).

In 1973, the number of motorway projects identified remained almost as high as it had been in 1972 at about 25. Grants were made to the M3, M5 and M11 Committees as well as those groups working on the M23/25, M27 and M55 in Lancashire (DoE 1974, 17, 105). The report on the M5 mentioned the significance of off-site survey data:

The total recording of all man-made features and the recovery of environmental evidence before and during construction ... has produced far more information than can be reported here and is indeed probably of greater significance, certainly in terms of landscape history, than the four set-piece excavations (DoE 1974, 106).

It appears that those concerned with constructing motorways in Hertfordshire were unusually sensitive to archaeological issues. At Welwyn, Hertfordshire, the bath-house of a Romano-British Villa had originally been discovered by a local archaeology group during road-widening operations in 1960, though the small excavation was difficult to interpret and the results were initially filed. When the proposed route of the A1(M) was announced in about 1969 it was realised that the road would run on a 9m high embankment over the site (Rook 1978, 27) and a proposal to preserve the bathhouse within a vault was put to the DoE, with the support of the District Council. The DoE agreed to pay for the vault from the road fund, rather than the IAM budget, perhaps an early example of the 'developer pays' principle. The road opened in 1973 (Appendix 2) and the site eventually opened to the public in 1975 (Figure 13, Rook 1978). Similar examples at about this time occurred on the A10 and the A41(M) (below).

The work of the motorway committees demonstrated time and again that intensive investigations along the line of a road scheme would reveal many more sites than were known to exist prior to that investigation. Eighteen months of 'hectic' activity in advance of the M5 transformed the 'archaeologically sterile' Vale of Gloucester into an area containing at least 54 sites along a 67km stretch (Fowler 1978). This was not a one off, a 13km stretch, also on the M5, in the Taunton area:

Produced a mass of information which, from an area supposedly archaeologically barren, is not only a revelation but must also produce something of a revolution in the assessment of the South Somerset landscape (Fowler 1972).

Overall the work on the M4 and M5 produced an average of about one site per kilometre, frequently in areas where none were known before (Fowler 1980).

The motorway committee era came at the end of the 'rescue archaeology' phase and laid the foundations for professional archaeology. It developed new methodological



Figure 13 - The Welwyn Romano-British bath house in its vault – the A1(M) runs above (© Welwyn Hatfield Museum Service).

approaches to archaeological prospection, highlighted the level of destruction and created a network of experienced archaeologists and a range of organisations that could undertake complex projects, at short notice and under pressure.

The early 1970s

In 1970, the DoE directly investigated 72 sites in England and awarded 69 grants to various bodies for work on at least 127 sites. Of these 51 identified the threat motivating the work and 25 of these were from road schemes (DoE 1971). The following year the DoE directly investigated 65 sites in England and made 71 grants for work on at least 105 sites. Of these 64 identified the threat motivating the work and 31 were from roads (DoE 1972). In both these years the majority or almost half of the identified threats came from road schemes, including motorways discussed above.

In 1971:

Leading archaeologists came together to form 'Rescue', a pressure group whose aim was to bring to the attention of public and politicians alike the scale of the threat to archaeological sites (Ottaway 1992, 11).

Their main publication, *Rescue News*, was first produced in 1972. In January 1972, *Current Archaeology* reported on the work of the group over the previous year and identified four main projects at York, Foulness, Dover and Tewkesbury (1972a). Of these, the work at York was primarily motivated by a proposed inner ring road and at Dover by an inner relief road (below). That at Tewkesbury was mainly from a shopping centre development but this was 'designed to attract back into Tewkesbury the motor traffic which would

otherwise by pass it on the motorway' (CA 1972b). The motorway was the new M5. Foulness was then the proposed site of a new London airport, thus three of the four sites Rescue was involved with directly or indirectly arose from road construction, and all were transport related.

In July 1972 it was reported that:

A financial crisis is affecting projects to save Britain's history from motorways and development schemes. The Department of the Environment has told archaeologists in charge of a number of important sites that there is no more money available this year to support them (*The Times* 31/7/1972).

Affected projects included work on the M5, M40, and M69 as well as several city centre projects that featured road schemes such as York. Later in the year it was reported that the DoE had made an additional £125,000 available because:

Despite a 50 per cent increase in the original provision over that for last year, there were still insufficient funds (RN 1972a).

The calendar year 1972 was the first year for which the DoE gave detailed figures for its rescue archaeological expenditure. The total in England was £468,000, of which £423,000 (or just over 90 per cent) was dispersed as grants to various external bodies (DoE 1973, 1). These figures did not include 'fees paid by the Department for supervisors, assistant supervisors and site assistants, nor their travelling and subsistence allowances' nor the cost of the ancient Monuments laboratory and the general costs of the Department only indirectly concerned with the projects undertaken (DoE 1973, 2). As well as this, the grants were not usually for the full cost of the excavation and other groups were expected to contribute. It is uncertain how much came from other sources (in cash or kind) though an increase in the 'volunteer labour force' and the contribution of local authorities, in terms of accommodation and staff, were both noted (DoE 1973, 1). It is also not known how many projects were undertaken without any involvement by the Department. It has been estimated though that in 1972 about 450 excavations of all types took place in England (Darvill & Russell 2002, 53). The DoE summary for this year mentioned over 200 separate excavations so perhaps a similar number took place without any DoE involvement. It is difficult to know what proportion of the DoE funding was spent on roads-related projects. The department directly investigated 16 sites and awarded grants for at least 185 sites. Of these 200+ projects it was possible to identify the threat which led to the work in 94 cases, of which 54, or 57% were roads related. If this proportion of all projects were roads related, and if all project types cost about the same, admittedly two rather unreliable assumptions, then it may be estimated that about £267,000 was spent by the DoE on roads archaeology in England in 1972. Given the various other contributions discussed above, the total resource applied to roads archaeology was probably far greater.

In the DoE report for 1972 the IAM reported that the:

Unprecedented demand for excavation ... stemmed largely from the expanding programme of motorway construction and from the extensive redevelopment schemes affecting major and minor

towns whose centres overlie their medieval and sometimes Roman counterparts (DoE 1973, 1).

The former was clearly car related and, it has been argued above, so was the latter.

The figure of 450 excavations in England in 1972 was the highest since records started in 1960 and was not exceeded until 1992 (Darvill & Russell 2002, 53). 1972 was also the high point for roads-related archaeology; as already noted the number of projects that identified roads as threats in the DoE excavations reports reach 54, the highest in any of the DoE reports. The number of references to roads projects identified in the general literature survey also peaked at 19, a figure not reached again until the 1990s.

In 1973, the DoE's expenditure on rescue work in England rose to £560,000 of which £508,000 was dispersed as grants. Despite the overall increase it may be estimated that about £230,000 was spent by the DoE on road projects (of 194 projects, 96 recorded the threat, of these 39 or 41% were roads-related), a slight decrease. This was borne out by the projects reported in the DoE summaries; larger works became fewer and smaller projects increased in number. A fall was also seen in the number of projects identified in the general literature survey; the number of references dropped from 19 to 12.

Trunk roads

Once archaeological work began on the motorways, fewer projects seem to have been undertaken on other major roads such as bypasses, dual carriageways or link roads, perhaps because motorways were attracting the attention of the limited numbers of available archaeologists. In 1969, only four projects were identified in the Ministry of Public Buildings and Works excavation summaries compared to ten and nine in previous years. In 1970, three could be identified (MPBW 1970, DoE 1971), or with the work on the A38 (below) which was also mentioned but the threat was not identified, four. After this the number of projects began to rise again; in 1971 eight were identified, and although only three could be identified in 1972, for work on the A2, the A12 and the A66, each of these referred to 'various sites' (DoE 1973, 20-4) so perhaps the total was of the order of nine or more. In 1973, perhaps six or more projects on major roads could be identified in the DoE reports (sites on the Huntingdon bypass, various sites on the A2 again, and on the A64) and work at Lower Hacheston (below) was not mentioned bringing the total to at least seven.

At the very beginning of 1970 the Devon Archaeological Society set up a Roads Committee to 'organise archaeological survey and excavation' in advance of the construction of 37km of new dual carriageway on the A38, which took place principally during 1970-72. This appears to have been modelled on the M5 Committee and indeed they worked on the M5 in 1973-4. The preliminary survey included an examination of:

The Tithe Apportionment records, references in archaeological literature, aerial photographs taken to assist the planning of the roads and a field by field ground survey (Miles 1977, 43).

DoE grants allowed the committee to employ archaeologists for the watching briefs during construction but much of the work was done by 'amateurs' (Miles 1977, 43). No

significant sites were revealed by the work but this was thought to be in part due to the geological conditions making it difficult to see features, and the choice of road route avoiding existing settlements, and perhaps thereby also avoiding the limited number of sites suitable for earlier settlement in this hilly area (Miles 1977, 50).

Work in advance of the Little Waltham Bypass (included in the DoE reports) was undertaken at the request of the DoE in an area known to have produced Romano-British material. Trial excavation in 1970 revealed an 'unexpected' Iron Age settlement and was followed by excavations completed in 1971 which were apparently only possible because the road construction was delayed by other factors (Drury 1973, 10).

A large excavation on the line of the A10 Puckeridge Bypass was undertaken in 1971 and 1972, with funding from the DoE (though it had to be completed with voluntary donations after the DoE funding ceased). The excavations revealed Iron Age and Romano-British occupation, a later Romano-British cemetery and another smaller cemetery nearby. Here, the report noted the cooperation from Hertfordshire County Council, their Highways Department and their contractors who worked with the archaeologists to phase the work to maximise the available time, and assisted in dealing with unexpected discoveries. The main site was also 'carefully buried unharmed under the road by the Contractors working to the instructions of the excavators' (Hertfordshire Excavation Group 1972). This was in contrast to many contemporary projects where work was rushed or had sufficient time only because the road was delayed for other reasons. Once again Hertfordshire demonstrated unusual sensitivity towards archaeological remains (see Welwyn above).

Minor roads

As well as the above projects on motorways and other major rural roads there was a steady flow of projects on minor road schemes that could be identified in the DoE reports. These could be grouped into new schemes including the terms 'new roads' and 'road construction' and road improvements such as 'widening', 'realignment' or 'straightening'. The term 'road works' also cropped up fairly regularly but did not indicate anything about the nature of the road scheme concerned. These general terms could, however, be quite misleading as they sometimes involved major works. On the A2 in Kent two projects in 1970 were described as being in advance of 'road widening', but the work involved the addition of a whole new carriageway to the south of the existing road, doubling its width. It was not always easy to determine if these excavations were rural or urban; they have all been included here for convenience. These minor schemes also could not be easily identified in the general literature, presumably as they were usually amongst the majority of reports and articles that did not specify the reason for the excavation. In 1970, one minor new road scheme was mentioned as a threat, four road improvement schemes and one road works. In 1971 the figures were one, two and five respectively, in 1972 there were five, three and none and in 1973 one, eleven and three.

Urban projects

As noted above, urban road schemes are not easy to identify because they usually came under the catch-all term 'urban development'. Most of the projects below were

identified from the literature survey rather than DoE reports. Increasing detail in *Current Archaeology*, first published in 1967, and the foundation of *Rescue News* in 1972 allowed several urban projects to be identified, many of which were mentioned in the DoE summaries but without the threat being identified.

In 1971, it was reported that 'centres such as York, Colchester and Cirencester are faced with major inner and outer ring road schemes which threaten Medieval and Roman occupation levels as well as defensive works and city walls' (DoE 1972, 1). Despite this, none of the individual site summaries for these sites mentioned roads as threats. At Chelmsford, Essex though the temple precinct of the Romano-British town was examined during the construction of an inner relief road (DoE 1972, 56).

In Doncaster, excavations in 1970 in advance of road improvements located the eastern defences of a Romano-British fort (DoE 1971, 23-4). Development in the area of the Romano-British site continued over the next few years and included a new inner ring road, Church Way, as well as a shopping centre. Archaeological work demonstrated that the town had an almost continuous record from the late 1st century AD; two successive Roman forts were followed by early Anglo-Saxon occupation, a later burh, then a motte and bailey castle, a medieval moot hall and town defences (Buckland & Dolby 1972).

In Dover 'a new era dawned in 1970'. Prior to this much of the historic fabric of the town had been destroyed without record including a mile of town wall, town gates, St Martin's Priory and many fine town houses. When the York Street bypass was planned there was a determination to 'excavate, record and perhaps preserve'. With funding from the town council and the DoE and other bodies 90 days of non-stop work led to the excavation of parts of a Neolithic settlement, an Iron Age farm two major Romano-British forts, an Anglo-Saxon settlement and medieval deposits. This was followed by a further 70 days of work in 1971 and the quality of survival was confirmed when the contractors took over the site in September. 'Determined negotiations' followed and in November it decided that the 'bypass was to be raised by nearly 6 feet in places and both Roman forts were thus to be saved' (Philp 1974, 74-6, Figure 14 overleaf).

In 1971 a large area of Cirencester, Gloucestershire, was investigated in advance of a new road scheme. The area, along Beeches Road in the north of the town, had been allotments but was due to have an access road built across it. Excavations revealed 'a really fine town house' with several mosaics and a bath suite (CA 1971b, 150). By the end of 1973 part of the site was buried by the road that had threatened it, though excavations continued on an adjacent site (McWhirr 1974, 216). In 1974 another area of the town known as Admiral's Walk, immediately south of the Romano-British Forum, was examined in advance of the construction of an access road to the main town car park, the long strip opened up revealing more details of the Romano-British town (CA 1974, 299). All this work was led by one man, Alan McWhirr, rather than a committee.

In January 1972, York was described as 'fast becoming the major crisis in urban archaeology' (CA 1972a). In the mid-1960s an inner ring road had been proposed, much of which would run very close to the medieval walls of the city through medieval suburbs. In 1971 a report on the archaeological implications of the route was prepared and in February 1972 the DoE gave a grant of £10,000 to establish the York Archaeological



Figure 14 – At York Street, Dover, excavations before bypass construction by Kent Archaeological Rescue Unit led by Brian Philp, revealed important Roman remains including the Painted House (open to the public in New Street) and the base for the *Classis Britannica*, now buried under the road and the Discovery Centre (courtesy of Dover Museum & Bronze Age Boat Gallery, www.dover.gov.uk/museum).

Trust which was set up in April; by the end of the year the trust had a permanent staff of four. Excavations on the site of St Mary's Hospital, one of five medieval hospitals threatened by the ring road, ran from January to May 1972 and revealed the history of the hospital which spanned the whole medieval period. Below the medieval deposits remains of the Romano-British extra-mural settlement were revealed but could not be fully examined. Most sites investigated in the city during this period were however in response to other forms of development (CA 1973a).

In May 1972, the Council for British Archaeology published a report claiming that 159 towns would have their archaeological potential destroyed by redevelopment within 20 years and that the archaeology of only 21 threatened towns was being studied adequately (*The Times* 31/7/1972). Despite this several urban projects that took place in 1972 have been identified. In Maidstone, Kent, work in advance of the Inner Relief Road examined a Romano-British villa (DoE 1973, 58). In Northampton, a watching brief on road widening at Black Lion Hill and a trial trench prior to a new road scheme at the Plough junction were both reported by Mr J Williams for the Northampton Development Corporation, presumably employed by them to undertake the work (DoE 1973, 98). In Winchester, excavation was in progress 'on the line of a new road, part of Stage I of the Winchester Traffic Plan' in the area of one of the richest cemeteries of the Romano-British city (RN 1972b) and apparently continued into 1974 (DoE 1975, 46).

Perhaps more typical though was Durham. Here, a new through road across the neck of the peninsular, first been proposed in 1937 but not built due to the war, was constructed in two stages between 1967 and 1975. The first section ran from North Road to Gilesgate via Millburngate Bridge and the second linked this to Elvet via New Elvet Bridge (Roberts 1994, 112, 116). Even at this relatively late date no archaeological interventions are known to have taken place before or during construction (Nick Boldrini, pers comm).

The later 1970s

Following the oil crisis of 1973-74, the subsequent economic downturn and slowing in the rate of development, eventually led to a decline in the amount of archaeological excavations being undertaken. The total number of excavations undertaken in England reached a high of about 450 in 1972 and remained at about 400 until after 1976 when there was a steady decline for several years (Darvill & Russell 2002, 53). This pattern appears to have been reflected in road projects. The number of threats identified in the DoE excavations reports continued at about 40% of all identified threats in 1974 and 1975 (DoE 1975, 1976) but dropped off significantly in 1976. Despite rescue funding reaching a total of over £2 million and at least 230 projects being undertaken, the number that could be identified on road schemes fell to a low of 15 of 99 identified threats (DoE 1977). The trend in the general literature was similar; the number of references to new road projects climbed slightly in 1974 to 12 but then dropped to eight in 1975 and seven in 1976, before hitting a low not seen since the mid-1960s in 1977 when only two references could be identified. They remained in single figures until 1986 (Appendix 1).

This downturn does not seem to have lessened pressure on archaeological budgets:

Despite some slowing down or postponement of development projects due to the economic situation, requests for grants for surveys and excavations of threatened sites were double the amount of money which it was possible to allot and careful selection of projects was necessary (DoE 1975, 1).

But it was not universally considered to be a bad thing:

This period of retrenchment and financial restriction, which will continue through 1976-77 and beyond, gives an opportunity to concentrate on survey work (DoE 1976, 1).

Presumably because less development meant less rescue work and a more strategic overview could be taken.

Prior to this period there had been little appraisal of road schemes. In the immediate post-war era society appears to have been determinedly forward looking; the manual *Design and Layout of Roads in Built-up Areas* issued by the Ministry of War Transport in 1946 had a simple guiding principle: predict the growth of traffic and provide for it. It gave capacities for different types and widths of roads which could be compared to predictions and then used to determine what sort of road was required (Plowden, 1972, 11). What assessment there was was purely economic; plans for roads were assessed in cost-benefit terms and the environment did not feature on either side of the equation.

This began to change in 1977 when the Advisory Committee on Trunk Road Assessment published recommendations that stressed the environmental impact upon non-road users of demolition, noise, visual intrusion and air pollution. There was still no mention of heritage (Baldwin & Baldwin 2004, 247-51).

Rural projects

The DoE report for 1976 was the last issue of *Archaeological Excavations*. It was to be replaced by Historic Conservation (DoE 1977, frontispiece) but it appears that this never reached the light of day. It was not until the first edition of *Archaeological Review* in 1989 that there was another publication providing an overview of state-funded rescue archaeology. From 1976 therefore, the identification of roads-related archaeology projects relies on the general literature.

Over the two years following the peaks in 1972 and 1973 the number of motorway projects identified fluctuated but remained at a similar, though slightly lower, level. Presumably this was because the lead-in time for such large infrastructure projects meant that they could not simply be cancelled in the face of an economic downturn. In 1974, 20 or more projects could be identified, including work on the M3, M5, M18, M25 and M55, and in 1975 there were at least 25, including work on the M3, M20, M25, M69 and M180. The M3 was mentioned as a major landscape project undertaken during 1974 (DoE 1975, 1), as part of which the Ancient Monuments Laboratory conducted geophysical survey on 14.5km of the route, discovered 8 new sites and added to others (DoE 1975, 6). In 1976, the number of motorway projects that could be identified dropped to four; this was probably in part because they were no longer reported separately but it cannot fully explain this decline. By this time however the rate of motorway construction was slowing markedly (Figure 8).

In 1974, the number of projects on other major road schemes dropped slightly from the 1972 figure of about six to five or so (several sites on the A2, Roman sites on the A69, and Lower Hacheston) as well as the work at Corbridge which did not appear in the DoE reports. In 1975 the number of identifiable projects on major road schemes jumped to 18. This was probably in part because, for this year alone, such schemes were reported separately, with motorways. These included sites on the A604 and the Huntingdon Bypass, Cambridgeshire, the A67, County Durham, the Ducklington Bypass, Oxfordshire, a proposed bypass of Ludlow, Shropshire, the Ilchester and Wincanton bypasses, Somerset, the Stratton St Mary Bypass, Wiltshire and A15 at Hibaldstow. In the DoE report for 1976 major roads were not detailed separately and the number of identifiable projects dropped to two, or three, including the work at Hibaldstow on the A15 which was mentioned but the threat not identified. The work on the Wincanton Bypass mentioned in 1975 also continued into 1976 (below) but did not appear in the report for that year, bringing the total to four. The only project that could be identified after 1976, other than continuing work at Ashton (below), was the field walking of the route of the planned Colchester Bypass by volunteers in 1977, but the road was initially shelved and construction did not begin until 1980 (Corbishley & Tann 1981).

Most work on major roads appears to have been on known sites. The use of prospection developed by the motorway committees does not seem to have initially

been applied on other road projects. They were also generally Romano-British presumably because of their visibility on aerial photographs and in terms of reported finds. At Lower Hacheston, Suffolk, the threat of the Ufford - Wickham Market Bypass (A12) prompted major excavations on a known Romano-British site in 1973 and 1974 (CA 1975a). The excavations appear to have cut across the periphery of a small town illustrating one of the problems of undertaking excavations in response to a road scheme rather than for research; road schemes follow their own lines across the landscape, not ones that archaeologists may have chosen. On Humberside, the planned route of the southern dual carriageway approach to the new Humber Bridge (A15) was to run through the site of a known Romano-British settlement at Hibaldstow. Excavations took place in 1975 and 1976, sponsored by the DoE and Humberside County Council, but it was delays to the road construction programme from other causes that allowed the full length of the roadside settlement to be examined (Smith 1981). At Ashton, Northamptonshire, another Romano-British small town lay on the possible line of a bypass, that for Oundle. Work in 1976 revealed a 'typical' Romano-British "small town" and concentrating on a probable smithy. Underlying this was a previously unknown Iron Age settlement which was examined in 1978 and 1979 and the project continued into the early 1980s (CA 1981).

A project in Northumberland had a slightly different emphasis, though also on a Romano-British site. In 1974 an excavation was undertaken in advance of the construction of the Corbridge Bypass. Here, a known Romano-British fort had recently been proven to originate later than had previously been thought and the proposed site for its predecessor lay on the line of the proposed bypass; 'for once the demands of research and rescue archaeology were coincident and the hypothesis could be put to the test'. The fort was located, its full width excavated and several buildings identified (CA 1974b).

In Hertfordshire (see the A1(M) and A10 above), earlier work near Berkhamsted had revealed a small Romano-British settlement. This time the site was on the line of the A41(M) which prompted further work. Trial trenches revealed Romano-British occupation which in turn led to geophysical and aerial photographic surveys that demonstrated that the site was much more extensive than had been thought. Unusually, the line of the motorway was 'diverted to spare the immediate area' (Orna 1975, 139).

The number of projects on smaller road schemes continued at much the same level as in the earlier 1970s. In 1974, there were three archaeological projects on new road schemes, five on road improvement schemes and no road works. In 1975 the figures were two, two and two and in 1976 four, three and two.

Urban projects

Once again, few urban projects in the late 1970s could be identified in the DoE excavation reports.

It was noted above that many bridges on medieval foundations were modified in the inter-war years. Similarly, in the post-war period, many inner ring roads ran on or close to the lines of medieval city walls, the cases of Hereford in the 1960s and York in the

early 1970s have already been described. When Worcester was extensively redeveloped in the later 1970s the work included the construction of two urban dual carriageways one of which, City Walls Road, ran roughly on the line of the medieval city walls to the east of the centre (Figure 15). This led to a series of excavations between 1975 and 1977 to examine the medieval city walls. Fifteen stretches of the wall were examined in 1973 (Bennett 1980). A further section was examined in 1975 (Hirst 1980) and another in 1976 (Wills 1980). Also in 1975 and 1976 two blocks of medieval tenements within the city walls were examined at the south end of the road scheme (Carver 1980).

Urban road building was leading to excavations right across the country. In the South-West, excavations in advance of road works in the Holloway Street/Quay Lane area of Exeter in 1974 revealed early Romano-British timber buildings and later Romano-British cremations as well as medieval burials and a civil war ditch dug to defend the south gate (DoE 1975, 41). In the South-East, road widening in Eastbourne threatened the destruction of the site of the medieval Jesus House and Vicarage opposite St Mary's Church; the Eastbourne Natural History and Archaeological Society excavated the site in 1977 and found the remains of the building to be 'amazingly complete' (CA 1978). At the opposite end of the country excavations in Hull were 'going full steam ... as a great swathe for a new dual carriageway is blasted through the southern half of the medieval city' during 1974 and 1975. Excavated sites included the Old Town Gaol on Mytongate and an aisled hall on the corner of Blackfriar Gate and High Street (CA 1975b). No doubt many more examples could be identified by detailed checking of local HERs.

Within the time and financial constraints of rescue excavation, techniques were being developed to systematise and improve the recording and interpretation of archaeological



Figure 15 - The southernmost surviving section of Worcester's city walls embedded within modern development and truncated by City Walls Road beyond (author).

data. In Winchester, an excavation on the line of a new roadway during 1975 examined a substantial Iron Age ditch surrounding a 14 ha enclosure to the west of the town. Edward Harris of the Winchester Research Unit and Patrick Ottaway of the city council's Rescue Archaeologist's Office used this excavation as a test-bed for two new recording techniques which are still, in use today; the 'Harris' matrix and single-context plotting. The site was 'probably the first completed site which used the 'matrix' during the course of excavation', single context plotting however, albeit in a different form, had already been used in London (Harris & Ottaway 1976, 6).

Excavations had been on-going in Southampton for many years revealing details of the medieval town as well as Anglo-Saxon Hamwih this was generally recorded as simply being in response to 'development'. In 1978 however, 'demolition of housing in advance of road improvement has provided the opportunity to examine a 3 acre site [1.2 ha]'. This was at Six Dials, north-east of the medieval centre, in the northern part of the Anglo-Saxon town and suggested that the area was an industrial suburb, adding to information already obtained to the south. Excavations were expected to continue for several years (Devereux 1979, 5).

An early example of 'outreach' work took place in 1978. Work by the West Yorkshire Archaeology Unit in advance of the construction of Castleford's Inner Relief Road had revealed a substantial Romano-British bath house. The unit put together a supplement called the Lagentium Express that the local paper printed and distributed, which led to over 6000 people visiting the site over a two week period (RN 1978, 3).

The beginnings of professional archaeology

By the beginning of the 1970s professionalization was already an identifiable trend amongst the archaeological community even though the number of professional archaeologists was still less than 200 and had not risen markedly during the 1960s. In 1957, it was estimated that there were 167 full-time professional archaeologists working in the UK, this had only risen to 200 by 1973 (Figure 16 overleaf). Initially it was met with caution; in its March 1970 editorial *Current Archaeology* wondered if 'in trying to turn "professional" archaeology is taking a wrong turn' (CA 1970b). By 1972, they appear to have decided it wasn't; in its July 1972 editorial, *Current Archaeology* commented on the establishment of full-time rescue teams, some of whose members were becoming full-time professional archaeologists, a 'new breed' they referred to as the 'New Archaeologists' who they seemed to approve of:

The spirit of the New Archaeologists is well expressed by Mr Musson in his article in this issue, where speaking of winter excavations he writes: 'Good oilskins, several pairs of boots, many layers of clothing, and above all the stiffened will produced by professional commitment, all these help the full time digger to stay in the field, long after volunteers, or even labourers for that matter, have sought shelter (CA 1972c).

The vast majority of those involved were still volunteers though; it was not until between 1973 and 1975 that the number of professional archaeologists began to rise significantly, from about 200 in 1973 to about 632 in 1975. By the end of the decade there were an estimated 1614 professional archaeologists in the UK (Figure 16).

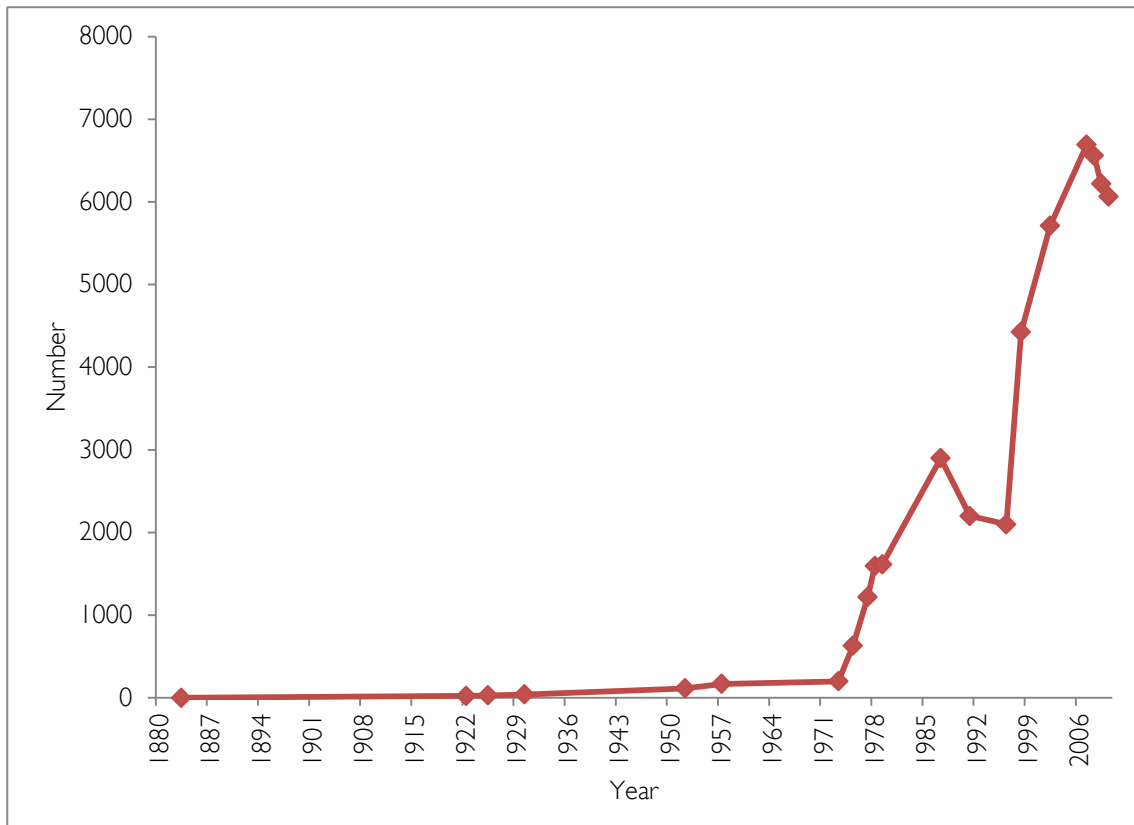


Figure 16 – Professional archaeologists employed in the UK (data supplied by Kenneth Aitchison, see Appendix 4)

Funding

Total spending on rescue archaeology by the DoE in the financial year 1973-74 rose from about £560,000 the previous year to a little over £800,000 (DoE 1974, 1), and in 1974-75 to over £1.1 million (DoE 1975, 1). It then rose sharply to almost £1.7 million in 1975-76 (DoE 1976, 1) and more than £2.1 million in 1976-77, the last year in this period for which figures are available (DoE 1977, 1).

In September 1977, the DoE issued a press release, *Rescue Archaeology: The Next Phase*, which identified several problems, not the least of which was funding (CA 1977). The statement noted the 'levelling off of funds from the DoE, after several good years', and that there seemed to be 'no prospect of the total grant being increased for the next few years'. Consequently, it was felt that the time had come for 'a radical review of rescue archaeology'. The statement identified six objectives for rescue archaeology: establish an SMR in each county to 'serve as the basis for identifying archaeological potential'; establish an archaeological presence in each county to liaise with the planning department, work on the SMR, undertake surveys, watching briefs and occasional small excavations and focus voluntary effort; to conducting thematic surveys in order to establish academic priorities; excavate threatened sites within this academic framework; develop scientific support; and to prepare project publications and archives. It was identified that the first two objectives (SMRs and county-based archaeologists) could best be met through local (county) funding, and that the last three (most excavations, scientific support, and publication and archiving) by national funding, with the third objective (surveys and academic priorities) being supported in a variety of ways. It was

noted that there would need to be a clear distinction between the local archaeological service (SMRs and Officers) and DoE funded projects conducted by archaeological units. It was also felt that the units would need to be reduced in number and increased in size to cover large areas of three or more counties. These policies were to form the basis of future development of the archaeological sector as supported by the DoE and it would appear that the provision of a local archaeological service, locally funded was eventually implemented. The development of multi-county units was patchy at best, and was largely superseded by the rise of commercial units and competitive tendering following the publication of Planning Policy Guidance note 16 in 1990 (below).

A source of funding for rescue archaeology that became increasingly significant during the later 1970s was the Manpower Services Commission (MSC). This was a non-departmental public body of the Department of Employment created in 1974 (Helmore 1976). The MSC co-ordinated employment and training services and indirectly supported increasing numbers of archaeologists, mainly working in urban areas. Its impact largely explains the peak in the numbers of professional archaeologists seen between about 1977 and 1990 on Figure 16 (Aitchison pers comm).

By the end of the 1970s that vast majority of funding for rescue archaeology in the UK was still coming directly or indirectly from central government. Just under half was coming from the national heritage bodies and about 22% from the MSC. A further 19% or so was coming from local authorities bringing the total from government to roughly 90%. At this time only about 2% was coming from developers (Spoerry 1992).

National organisation

As discussed above, work in the late 1960s and early 1970s had highlighted the rate at which archaeology was being destroyed by development, much of which was being fuelled by increasing car use. In response to these threats:

The nature and scope of the organisation to deal with them ... had to be radically changed and enlarged to cope with more expensive and complex requirements (DoE 1973, 1).

One change was the establishment of the Rescue Archaeology Committee of the Ancient Monuments Board (successor to the IAM), set up in 1974 and creating for the first time a separate state body to oversee rescue archaeology. In 1975, 14 'major projects of national importance' were removed from local control as they ere 'distorting many county allocations' and their grant allocation placed under the Rescue Archaeology Committee. Amongst these was the M3 as well as several urban projects (DoE 1976, 1), some of which, such as York, had been motivated by urban road development.

The Rescue Archaeology Committee was followed by 13 regional Area Advisory Committees set up in 1975 to advise the DoE on

'Policies and priorities for surveys and excavations, on allocation of grants, and on back-up facilities to ensure early completion and publication of reports [and to develop] a coherent research policy for rescue archaeology' (DoE 1976, 1).

Local Authorities

At the local level the IAM/Ancient Monuments Board began to push through the recommendations of the Walsh Committee, which had concluded in 1969 that the local-authority system could play a vital role in identifying and mitigating threats to the historic environment and recommended that county councils appoint archaeological officers to provide professional archaeological assistance and that the county planning authorities should maintain a record of field monuments (Gilman & Newman 2007). This began to bear fruit in the early 1970s and by 1973 the Ancient Monuments Board was able to report increasing input from local authorities:

Many ... contribute on an increased scale to the efforts being made to record our historical heritage and to assist in providing accommodation for the archaeological bodies involved as well as space and staff for the processing of ... thousands of finds (DoE 1973, 1).

In 1975 it was reported that it had been:

Intended to have at least one Field Officer, on a three year contract, in each of the English counties ... with the aim of having basic coverage for survey and intelligence on the rescue situation. By the end of 1975 there were only a few counties where this had not been achieved (DoE 1976, 1).

In September 1977, the DoE reported that 'more than half the English counties possess a local authority funded county archaeologist or field officer' (CA 1977, 242)

The first SMR had originated at Oxford in the 1960s (above) and several others appear to have been set up in the following years, apparently without direct assistance from the DoE, though they may have received funds through their parent bodies. The first references to SMRs in the DoE reports were from 1975 when it was reported that:

In the Midlands most counties have some form of basic Sites and Monuments Record, though in a great many cases a low level of staffing means that the full value of the record is not obtained (DoE 1976, 3).

The DoE appears to have viewed the SMRs and county and regional surveys as intimately linked, reporting that the Department:

Provides the basic Record through grant-aided Field Officers, in Norfolk, Cambridgeshire and Salop where general surveys are in progress (DoE 1976, 3).

Elsewhere, in the north an archaeological survey had apparently resulted in a gazetteer of sites held at Durham University which may have been an SMR of some form and in the south 'a major effort in 1975 has been directed towards the production of surveys of sites and monuments'. The emphasis of a wide range of surveys across the country was on 'establishing what antiquities exist, relating these to specific threats and assessing relative importance' (DoE 1976, 3) the natural home for the results of which would have been SMRs of some description. It is clear that the DoE was funding many, if not most of these surveys. The first records of any DoE grants directly to SMRs appear in 1976 when they were made to SMRs in Buckinghamshire, Cambridgeshire, Cornwall, and Devon (DoE 1977, 42-3) and in the Midlands it was reported that:

Work is being concentrated on building up the longer-term Sites and Monuments Records as an aid to preservation and strategic planning of work (DoE 1977, 4).

At the same time the survey programme was continuing including an assessment by the DoE/Greater London Council/Museum of London which identified the lack of a SMR for Greater London as a 'major deficiency'(DoE 1977, 4), though the first moves towards setting one up did not take place until 1983 (James 1983). The implication seems to have been that many of these surveys would result in SMRs being established.

Archaeological units

Not only were organisational changes required, larger excavation teams with more professional and specialist staff were also needed:

Inevitably the need has arisen for more permanently based staff not only to supervise excavations in large urban areas threatened by development but to process the finds and records for publication (DoE 1973, 1).

The experience in Dover in 1970 and 1971 (above) was one factor that led to the creation of the CIB Rescue Corps at the end of 1971. This was formed by four members of the voluntary Council for Kentish Archaeology who gave up their former jobs to become full-time archaeologists hoping to be able to survive on subsistence wages. This team was described as 'the first mobile unit of its kind in Britain'. By the end of 1972 it had worked on 20 sites in its first year (Philp 1974, 77), including the widening of the A2 at Barham (DoE 1973, 56).

Pressure by Rescue and from within the IAM/Ancient Monuments Board:

Led to a substantial increase in central government funding becoming available for fledgling urban units in places such as Oxford (set up in 1967), York (1972) and the City of London (1973) (Ottaway 1992, 12).

It was subsequently reported that 1974 was:

The first operational year for a number of newly formed units, as a result there has been a resurgence of fieldwork in many counties and increased activity in others (DoE 1975, 1).

However, this appears to have faltered in the economic downturn:

With the major proportion of extra funds during 1975 being allocated to post-excavation work it has not been possible to set up or expand archaeological rescue units on the scale which had been planned (DoE 1976, 1).

Nationally, the Central Excavation Unit of the DoE was established in 1975 (DoE 1976, 1-2) with the intention of filling in the gaps in the emerging structure by undertaking excavations where no suitable organisations existed, where there were insufficient resources, on nationally significant sites and on sites that came up at short notice. Its first excavation was at Winklebury Iron Age hillfort in Hampshire (EH 1986, 2, 41) and it did not get involved in any road projects for several years, probably because the lead time that road schemes required meant that they rarely fell within the unit's remit.

The lack of trained staff to run projects had been identified as a problem by the IAM since the mid-1960s (MPBW 1965, 1) and in 1975 the DoE supported a pilot scheme with the University of Oxford to provide a year's in-service training to seven staff from four units (DoE 1976, 2), which continued in 1976 (DoE 1977, 3). Also in 1975 the DoE, with the Royal Commission on Historical Monuments (England), ran a survey course for 60 field officers from a wide range of units (DoE 1976, 2). In 1976, it held a seminar to discuss field-walking and planned to hold future seminars on geophysics, aerial photography and SMRs (DoE 1977, 3) though it is not known if these took place.

The DoE report for 1975 provided a detailed snapshot of the organisation of rescue archaeology units in England at the time. Across the south this was 'virtually complete' and consisted of a grant receiving body for each county or in three cases regions: Avon, Gloucestershire and Somerset; East and West Sussex; and Wessex where the four county organisations were linked by a regional committee. These were supplemented by independent organisations, mainly concerned with specific urban areas such as Canterbury, Southampton and Gloucester, but including the M3 committee (DoE 1976, 2-3). Coverage elsewhere was increasingly patchy from south to north. Norfolk, Suffolk, Essex, Bedfordshire, Northamptonshire, Oxfordshire and Hereford and Worcester had 'a reasonably effective centralised county structure'. Buckinghamshire, Cambridgeshire and Hertfordshire had the 'potential' for similar arrangements. In Shropshire, Staffordshire and Warwickshire work was at a low level and 'no clear pattern' was apparent. London, apart from the City had 'no effective centralised structure'. The East Midlands appears to have had no centralised organisations; here it was 'hoped' to create county units based on existing organisations. In the north only West Yorkshire had a central county unit and there were two district units at York and Lincoln. Much seemed to depend on the appointment of county based Field Officers in the following year (DoE 1976, 2, Fig 1 164). From a modern perspective the overall approach seems rather paternalistic.

The Committee for Rescue Archaeology in Avon, Gloucestershire and Somerset report on fieldwork undertaken 1975-1976 along the line of the Wincanton Bypass on the A303 in Somerset claimed to be the:

First full presentation of the results of archaeological surveillance of a major road scheme undertaken by a full-time unit for rescue archaeology (Ellison & Pearson 1978, 185).

Despite this assertion, it seems that the full-time staff were limited to the authors and that they relied heavily on the South-East Somerset Archaeological Society, presumably a largely voluntary group (Ellison & Pearson 1978, 183).

A professional body

During the 1970s, as a result of the increasing awareness of site destruction and rising numbers of professional archaeologist who were becoming increasingly involved in the development process:

Archaeologists came to feel a need for a body to define and maintain standards of archaeological practice, and users of archaeological

services felt a need for assurance concerning the competence and professional integrity of the archaeologists they employed (IFA 1997, 8).

As a result the Association for the Promotion of an Institute of Field Archaeologists was set up in 1979 and soon recruited over 500 members. Following consultations the association published articles of association and a code of conduct, held elections and handed responsibility to the first council of the new Institute of Field Archaeologists in 1982 which was incorporated as a company in 1985 (IFA 1997, 8).

Planning-led archaeology

The 1980s

The framework for archaeological work during the 1980s was established by the Ancient Monuments and Archaeological Areas Act 1979. This was mainly a consolidating act, but it also introduced some new measures such as work within scheduled monuments requiring permission from the Secretary of State beforehand rather than simply giving three months' notice. Funding powers were reframed to promote the funding of specific projects and exclude generalised funding of bodies and the Act allowed for the designation of Areas of Archaeological Importance, in practice in urban areas, to allow time and access, though not financial provision, for excavation (EH 1991, 2-3).

The 1979 Act was amended by the National Heritage Act 1983 which established the independent Historic Buildings and Monuments Commission to be known as English Heritage. The general duties of the new body were set out as being to: secure the preservation of ancient monuments and historic buildings; promote the preservation and enhancement of conservation areas; and enhance the public's enjoyment and knowledge of England's heritage. The last of these was a significant new area of responsibility. Many of the powers of the Secretary of State were transferred to the new body including those to fund the repair, management, and recording of important sites, and the provision of advice on scheduling monuments and consent for works on them (EH 1991, 3).

In 1989, English Heritage reported on 'considerable achievements over the last decade', principally:

- A dramatic increase' in the number of SMRs and archaeologists being employed by every county authority and many districts (with financial support from EH);
- Archaeology becoming a material consideration in the planning process and consequently many schemes being designed to minimise damage to archaeological remains;
- Developers committing increasing resources to recording archaeological remains which 'has significantly altered the balance of public and private funding for rescue archaeology (Wainwright 1989, 5).

Taken together these three achievements summarise the change from the era of reactive 'rescue archaeology' to pro-active 'planning-led archaeology'. Gradually evolving through the 1980s, they would lead to a revolution in archaeology in the 1990s.

Funding

The 1979 Act stated that the Secretary of State, the Commission, and local authorities may 'undertake, assist in, or defray or contribute towards the cost of an archaeological investigation' on any land that may contain anything of archaeological or historical interest (EH 1986, 5). There was no guidance on who else should be involved in these investigations where government could not or would not, and as the DoE press release of 1977 had made clear, funding was becoming restricted at the same time as archaeological costs were rising.

In 1980, the Department requested that period and topic societies, under the guidance of the Ancient Monuments Board, produce a set of strategic priorities that could be used to form the basis of archaeological funding during the rest of the decade. These were:

- Compiling SMRs against which to assess preservation, management and excavation policies;
- Defining monument selection procedures for preservation:
- Increasing funding for recovery of environmental evidence:
- Increasing emphasis on landscape archaeology:
- Planning of work through formal research designs:
- Replacing unit funding with project funding from inception to publication (Wainwright 1989, 4-5).

State funding of rescue archaeology in England rose steadily during the first half of the 1980s, from about £3.7 million in the financial year 1980/81, to about £5.6 million in 1984/85. It remained virtually unchanged in 1985/86 at about £5.7 million but jumped in 1986/7 to about £7.2 million and remained roughly at that level for the rest of the decade (EH 1991, 2). Within this, the proportion spent on excavation dropped steadily from about 28% in 1980/81 to about 10% in 1986/87 and remained at this proportion for the rest of the decade. The majority of funding was going to post-excavation work with small amounts being spent on SMRs, scientific support and aerial photography surveys (EH 1991, 3). Given that the proportion of excavation funding was falling faster than the overall budget was rising, and the rising costs of excavation, it is clear that the amount of rescue excavation being undertaken with state aid fell during the decade.

Archaeological projects on major road schemes may have been affected less than appears since road construction also fell, probably by more, proportionally, than the funding available for excavation. About 400km of motorways were added to the road network during the 1980s compared to about 1,500km in the 1970s and 1,200km of 'A' roads compared to about 3,200km. The minor road network continued to grow at about the same pace with a little over 15,000km of minor roads being added to the network in both decades (Appendix 2). Nevertheless, the archaeological work that had been undertaken from the late 1960s onwards served to demonstrate that almost all road schemes of any size were likely to affect archaeological remains, and that they were usually highly destructive. It may have been that road construction schemes were declining faster than the funding of rescue excavations on them, but a high proportion still appear to have been going ahead without any form of intervention.

This does not necessarily mean that there was less rescue archaeology taking place though. During the first half of the 1980s there was a clear shift in thinking regarding

the funding of excavations in advance of development projects. Prior to the mid-1980s it seems that any funding at all for archaeological work from developers was gratefully received rather than expected. By 1986 though, when English Heritage published *Rescue Archaeology Funding: A policy statement* this was changing. In this document it was stated that monuments of national importance should be protected but that those monuments that could not be preserved would need to be recorded prior to destruction. The statement went on to report that funding for this was never adequate and so set out principles, criteria and procedures to guide policy. Importantly though, it was also stated that:

English Heritage allocates the funds at its disposal for recording those archaeological sites which cannot be preserved and whose destruction is taking place beyond the control of agencies with the powers and resources to deal with the problem (EH 1986, 7, author's italics).

Though not stated explicitly it was clear that English Heritage felt that its resources should be directed towards picking up the pieces when all other sources of funding had been explored and that in the normal course of events the 'agencies' should be funding those projects that their developments were making necessary. A point made clear later in the same paragraph:

[English Heritage] welcomes participation by developers and other bodies in the funding of rescue programmes for its resources are inadequate to carry the burden alone (EH 1986, 7).

And made explicit at the end of the decade:

In the view of English Heritage, responsibility for producing a published record of archaeological deposits which are unavoidably threatened by development and which cannot be preserved in situ lies with the developer (Wainwright 1990, 2).

Initially, the Department of Transport appears to have been reluctant to accept that they had any responsibility for funding archaeological works in advance of their road schemes. *Rescue News* reported on several threats to archaeological sites arising from funding issues including Burton Dassett, Warwickshire (below), and the environs of Danebury, Hampshire and Maiden Castle, Dorset. Several large schemes were due to start construction in Devon which, together with the problems being reported elsewhere, prompted the Devon Archaeological Society to write to the DTp seeking clarification and reassurance. The response was described as 'high handed':

A direct contribution towards the costs of such work cannot be regarded as a legitimate charge on public funds for motorway construction, for which the Department is accountable (Sheldon 1986).

This was 'unsatisfactory' because:

It ignores the principle, now accepted by English Heritage, that it is the developer's responsibility to contribute towards the costs of recording what they themselves are destroying. This must surely apply to the government when it appears in the role of developer as it does to any other organisation (Sheldon 1986).

The use of the word 'contribute' should be noted, indicating as it does that though the 'developer pays' principle was beginning to be incorporated into policy, there was still some way to go in terms of practice. This seems to be confirmed by a Rescue report that in the financial year 1986/87 about 35% of all rescue archaeological funding came from national bodies, 27% from the MSC, 18% from local authorities and 17% from developers. In 1978/79 the comparable figures were almost a half from national bodies, just under a quarter from the MSC, about a fifth from local authorities and only a few per cent from developers (Spoerry 1992). The funding balance was shifting, but slowly.

The situation was changing rapidly though. Within a year, English Heritage noted that:

Threats from road construction ... fall into a different category and we consider that the public bodies concerned should make an allowance for the necessary archaeological recording in their project budgets (EH 1987, 10).

This appears to have been accepted by the DTp, to a limited extent at least:

The Department of Transport has recognised the principle by making an allocation of £100,000 towards archaeological recording in advance of trunk road schemes (EH 1987, 10).

It seems that this was the first time that the DTp had contributed to archaeological work on road schemes. At this time English Heritage received 44 bids for funding of rescue projects in advance of road construction totalling £513,316. It appears that less than a third of these were successful (about 13) but it was not stated what the grants that were made amounted to (EH 1987, 9). From the information given it was possible to identify six projects, plus two more from other sources. These were: the A46 (Swainswick) Survey, Avon; two projects on the Shrewsbury Abbey Gyration, Shropshire; Fishbourne (A27), Hampshire; trunk roads in Devon; the A605 site within the Raunds Project, Northamptonshire; and two projects at Burton Dassett, Warwickshire (Figure 17). In total these eight projects amounted to £98,430 suggesting that the total spent on roads projects might have been a little under twice this, something in the order of £180,000, lower than that for any year in which it has been possible to make an estimate since the 1960s. Only half of this funding was met by the DTp and more than £300,000 of bids were rejected, leading English Heritage to conclude that:

Applications for grants in advance of such schemes already total over £0.5m so the [DTp] allocation is clearly inadequate (EH 1987, 10).

DTp funding continued at this 'inadequate' level until 1990.

The heyday of the MSC input into archaeology was during the 1980s. Having been founded in 1974 it became increasingly significant and was primarily responsible for the peak in professional archaeologists between the late 1970s and the late 1980s (above). Without its input the employment peak of 2,900 seen in 1987 would probably not have occurred, with only a gradual rise in numbers from the 1970s through to the early 1990s (Figure 16). The MSC was transformed into the Training Commission in 1988 and abolished soon afterwards (Ashford 1989, 365). The decline in professional archaeologists from 1987-1991 can largely be explained by its reduced budgets (Aitchison,

pers comm). The majority of the MSC's work was not reported through established methods and so rarely features in the discussion here.

In 1989, Rescue produced a summary of the state of rescue archaeology. This reported that overall funding was increasing in line with inflation but that MSC funding was declining leading to a drop in the number of archaeologists employed. It was also noted that English Heritage was increasing 'the pressure for developer funding to be regarded as the first option' (Plouviez 1989). Even so, the most significant provider of funds was still central government, through English Heritage and the MSC, followed by local government with developers in third place. It was reported that developers were only prepared to provide funds when under pressure to do so and that there were large gaps in the pattern of provision, trunk roads being highlighted. Over half of archaeological projects were being undertaken by local authority units, followed by independent trusts with university units, museums and the Central Excavation Unit also contributing (Plouviez 1989).

Local Authority archaeological services

At this date local authority archaeological services usually comprised a county archaeologist and an SMR, typically within the county museum or planning department. The Association of County Archaeological Officers had been founded in 1972 with 14



Figure 17 - Excavations underway at Burton Dassett, Warwickshire in advance of the M40, 1986 (with permission Archaeology Warwickshire, www.warwickshire.gov.uk/fieldarchaeology).

members. At this time there were 17 SMRs in the country. By 1980, this had reached 34 members and 40 SMRs and by the end of 1984 the number of members had risen to 42 as had the number of SMRs. Only one county in England did not have a professional archaeologist and SMR, Kent. The political and financial support of the IAM in the mid-1970s and earlier 1980s was acknowledged to have been crucial in the setting up of this system (Burrow 1985, 9-10, 13). Some computerisation of SMR records began in 1974 but by 1980 only 11 SMRs were using computers, though this had risen to 31, with a further three preparing to, by the end of 1984 (Burrow 1985, 9).

In the 1986, English Heritage funding policy document it was stated that:

Local planning authorities have a clear role to play in ensuring that the archaeological implications of their planning decisions are properly assessed; and that, where destruction of important archaeological sites is unavoidable, due provision for essential archaeological recording is agreed and made before permission for a particular development scheme is given (EH 1986, 7).

This would appear to be the origin of what became known as planning conditions, though it is unclear how many projects actually had such conditions applied; in the mid-1980s it was impossible to impose a financial obligation for archaeology on the developer (Champion et al 1995, 4).

'During the 1980s and 1990s, the respective government departments, Royal Commissions and national agencies were concerned with the structure, content and development of local SMRs' (Gilman & Newman 2007, A2).

Coverage of England was completed with Kent in the later 1980s (HELM nd). They are now usually based on Geographical Information Systems, a wider range of information is also frequently included and their roles have expanded. These broader databases and services are now known as Historic Environment Records (HELM nd).

Material consideration in the planning process

During the earlier 1980s archaeological assessment of development proposals 'assumed an increasing relevance':

Through the improved awareness of local planning authorities, promoted by government advice, of the need to conserve the archaeological resource wherever possible (EH 1995, 1).

The changes in funding arrangements and the development of local authority archaeological services described above were having an increasing impact on planning policy.

The first mention of heritage in planning guidance can be found in the *Manual of Environmental Assessment*, published in 1983 (Baldwin & Baldwin 2004, 251), though this contained no specific requirement for fieldwork evaluation, merely the identification of known sites of historic interest such as Scheduled Monuments and Listed Buildings using desk-based research (NPA & WA 2006, 1). This was formalised in 1987 by DoE Planning Circular 8/87 which:

Confirmed that archaeology is a material consideration in the planning process and that the preservation of archaeological remains and their settings is desirable (EH 1995, 1).

This document laid the foundations for Planning and Policy Guidance note 16 published in 1990 (below).

Roads projects

The economic downturn that originated in the first half of the 1970s continued well into the 1980s restricting the amount of development which was also reflected in a decrease in archaeological activity. The number of excavations each year in England, which had peaked in the mid-1970s at about 450, declined to a low point of a little under 300 in 1981 and though the numbers increased slightly for a few years there was no sustained increase in numbers until the years following 1985, and the peak in the 1970s was not passed again until the early 1990s (Darvill & Russell 2002, 53).

It is difficult to be sure the extent to which this general decline was reflected in road archaeology, since the two main sources providing an overview of state-funded rescue archaeology do not cover this period. The DoE *Archaeological Excavations* series ended with the volume for 1976 and the EH Archaeology review did not start until the volume for 1988/89. It has therefore been necessary to rely on the general literature with its attendant problems, principally of identification and the relationship between references and projects. Comparisons with earlier periods in the following therefore refer to the general literature survey, not to the information contained in the DoE excavations reports.

The length of motorway completed annually continued to decline throughout the 1980s (Figure 8) and as road schemes became fewer and smaller the number of also declined. In total only 14 references to motorway projects could be identified during the 1980s compared to over 40 references during the 1970s. The largest motorway project underway during the 1980s was the construction of the majority of the M25 which opened in 16 sections totalling 140km in length between 1980 and 1986 (the last section being that from Micklefield to South Mimms, J19 to J23). The associated 14.3km long M26 was opened in 1980 to connect the M25 with the M20 in Kent, parts of which were also under construction in the 1980s; the 9.6km section from J2 to J4 also opened in 1980 and the 23.4km section from J9 to J13 opened in 1981. Also around London the 22.8km long M11 Cambridge Western Bypass (J9 to J14) opened in 1980, the M3 was extended by 20.5km in Hampshire opening as far as Hockley in 1985, and the 5.1km section of the upgraded A1(M) north from the M25 (J2 to J4) opened in December 1986. Further south, work was completed on the M27 with the opening of the 3.5km long section from J4 to J7, north-east of Southampton, in 1983.

Despite the large amount of work on the M25 and associated schemes relatively few references to archaeological projects were identified. These included an Anglo-Saxon cemetery at Polhill, Kent (Woods 1985), a substantial multi-phase site at Petters Sports Field, Egham, Surrey (Needham & O'Connell 1986) and a medieval pottery production site with several kilns at Rush Green, Denham, Buckinghamshire (Farley & Leach 1988).

At the Royal Gunpowder works, Waltham Abbey, Essex, the last upstanding remains of the Lower Island Works were demolished in 1981 while construction work was underway on the M25 (RCHME 1994, 54), without any archaeological record.

Four references to work on the M11 in Essex and Cambridgeshire were identified relating to work in 1980. These were an Iron Age and Romano-British settlement at Wendens Ambo, Essex (Hodder 1982), Romano-British kilns at Harston (Pullinger & Young 1982), Bronze Age causeways at Lingey Fen, Haslingfield (Pullinger et al 1982) and an Iron Age and Romano-British settlement at Edmundsoles, Haslingfield (Miller & Miller 1982). Work in advance of the extension of the M3 into Hampshire was underway by 1982 and continued until about 1986. Three main references were identified for this period of work covering several sites near Winchester (Fasham & Whinney 1985), in particular an Iron Age 'banjo' enclosure at Micheldever Wood (Fasham 1987), and an Anglo-Saxon settlement at Abbots Worthy (Fasham & Whinney 1991). A little after this, in about 1983, work resumed upgrading the A1 to motorway standard. Two references to work here were identified; a second Romano-British villa was located at Lockleys (above) as were a corn dryer near Welwyn and some slight evidence near Wendover (Rook 1987) and Neolithic to Bronze Age flints were found during a watching brief near Hatfield (Harris 1985), all in Hertfordshire.

In the Midlands the M42 to the south of Birmingham was built to connect with the eastern section that had opened in 1976. Four sections from the M5 to J4, totalling 24.6km, opened between 1985 and 1989 as well as the northernmost 16.8km section of the M40 connecting with it, from J15, also in 1989. The northern part of the M42 also opened at this time with the 23.9km section from the M6 northwards, J8 to J11, opening in 1985 and 1986. Also in the Midlands, to the north-west of Birmingham, the 28.4km long section of the M54 from the M6 just north of Wolverhampton to Telford opened in 1983. On the M54 the Central Excavation Unit undertook the emergency excavation of a medieval moated site at Shackerley in 1981 (Hinchcliffe 1986, 39). Two references to projects on the M40 were identified: an overview of work from 1988-91 covering 40km of motorway construction and mentioning six evaluations (Chambers 1993) and a multi-period Prehistoric site at Park Farm, Barford, Oxfordshire excavated in 1988 (Cracknell & Hingley 1994).

In the North-West, the 11.9km long M58, to the north-east of Liverpool, opened in 1980. In north Cheshire the final part of the M56, the 9.9km section from J14 to J16 north of Chester, opened in 1981. This connected with the southernmost section of the M53 which opened in 1981 and 1982, completing that route. Work was also continuing around Manchester with short sections of the M63 (4.5km, M60 J27-J2) and M66 (5.1km, M60 J24-J27) to the east and south-east of the city (both later renumbered as parts of the M60 Manchester Orbital Motorway) opening in 1982 and 1981 respectively. In the same area a short section (2.7km) of the M67 opened in 1981 to connect the M66 (as it was then) to the Hyde Bypass to the east of Manchester. Further north 22.3km of the M65 from Blackburn to Colne opened in five sections between 1981 and 1988. Despite this work, the only reference identified in the north of England is rather uncertain. An article documented the 'tragic & unnecessary loss' of the 18th century Nonconformist chapel at Risley in Lancashire (Stell 1986). This lay on the M62 between junction 10 and

11, a section that opened in 1974, so the article probably refers to an old loss or perhaps to a road widening scheme.

Much more archaeological work appears to have taken place on other major road schemes, reversing the pattern of the 1970s when work focussed on motorways. The vast majority of the identified references (43) were to projects undertaken in advance of new bypasses with a few (3) road improvement schemes, all widening to dual carriageways. Few were undertaken in the first half of the decade. From 1980 to 1984, 12 references were identified relating to projects on the A1 in Yorkshire, A2 in Kent, A12 in Essex, A22 in East Sussex, A40 in Oxfordshire and Gloucestershire, A303 in Hampshire and Wiltshire, A338 in Wiltshire, A417 in Gloucestershire and A509 in Northamptonshire. From 1985 to 1989 this jumped to 39 references. More than half this total was accounted for by a few large projects with several references such as the A4/A46 Shrewsbury bypass (4), A35 Dorchester Bypass (5), A47 Norwich Southern Bypass (3), and A149 Snettisham Bypass(4). Other projects included the A10 Buntingford Bypass, A27 Brighton Bypass, A30 Oakhampton Bypass and dualling, A36/A338 Salisbury Bypass, A45(T), A52 Bottesford Bypass, A61 Ripon Bypass, A66 dualling, A120/A131 Rayne/Braintree Bypass, A272 Cuckfield Bypass, A351 Wareham Bypass, A361 Nunney Catch Bypass, A422/A509 Newport Pagnell Bypass, A508 Brixworth Bypass and A4074 Wallingford Bypass (Appendix 1).

Also in this period were references to the A4/A46 Batheaston Bypass and A34 Newbury Bypass, both of which were to become notorious for roads protests in the 1990s. In both these cases however the references identified were criticisms of the work done rather than reports on that work. On the A34 the work was described as 'cursory' (Sparey-Green, 1995) and on the A4/A46 the archaeological reports were not put forward to the public enquiry nor included in the EIA (Davenport 1995).

By their nature, archaeological projects on less important road schemes are less visible in the literature since the works are smaller in scale and the results more likely to be of only local significance. Only four were identified, including two reports of work undertaken in advance of the improvement of the A605 at West Cotton, Northamptonshire which was reported as part of the larger Raunds Project (Hinchcliffe 1987, 7-8; Halpin 1988). The other references were to widening the A338 in Wiltshire and B3283/3359 in Cornwall.

Once again, few projects on urban schemes could be identified. In Reading, Berkshire, a well documented 5-bay, 3-storey, jettied house, which survived in good condition behind an 18th century façade, was demolished in the early 1980s by the local authority for a road scheme which was then abandoned (Godwin Arnold 1982, 53-67). In the centre of the planted medieval borough of Newport, Devon, trial-trenching combined with brief building survey in 1983, in advance of road improvements, provided information about the plan and construction of a late 17th/early 18th century house and some detail about the changing street frontage (Weddell 1990, 111-22). In Pontefract, West Yorkshire, road improvements, led to the investigation of an Anglo-Saxon church and cemetery, a medieval settlement and building, and a Civil War ditch during 1985-87 (Wilmott 1987). In central Leicester, the development of the Highcross shopping centre included substantial road improvements, though the primary development was clearly not road

related. Archaeological work during 1988 included an extensive programme of wet-sieving that recovered over 6,000 fish remains which allowed a detailed study of fish and fishing in the economy of Leicester, from the Romano-British through to the post-medieval periods (Nicholson 1992).

The 1990s

The 1990s opened with two key publications: *Trunk roads, England: into the 1990s* and *Planning and Policy Guidance: Archaeology and Planning*. Between them they defined the way forwards for roads and for archaeology for many years.

Trunk roads

In May 1989, the Government had published the White Paper *Roads for Prosperity* which announced a doubling of the motorway and trunk road programme. This was followed in February 1990 by the DTp report *Trunk roads, England: into the 1990s* which provided more detail on the earlier White Paper's proposals and included 20 additional schemes (DTp 1990, 6). The White Paper and the DTp report outlined a total trunk road development programme of over 4000km, with an estimated land-take of about 15,000ha, likely to be greater than any other form of development (Friell 1991). Consequently:

A project was designed to assess the impact of the Department of Transport White Paper *Roads for Prosperity* on archaeological sites and landscapes; this was intended to assist the Department and ourselves [EH] to assess the financial implications of the proposals and to plan management and recording strategies (Wainwright 1990, 5).

This project concluded that: over 800 archaeological sites could be affected; this was likely to be an underestimate; the cost of mitigation could be in excess of £70 million; the archaeological impact of routes should be fully assessed in advance of selection; and greater weight must be given to archaeological considerations in the planning and assessment process (Friell 1991).

These points have been set out most recently by the DoE in Planning policy guidance: archaeology and planning (PPG 16), and generally accepted by the DTp in a parliamentary answer in December 1990, where the principle of prior assessment of the impact of trunk road routes is discussed. What is now required is a coherent and consistent framework for that process of assessment and response to potential impact (Friell 1991).

English Heritage was working towards this coherent framework by advising the DTp on the revision of its *Manual of Environmental Appraisal* and on the production of guidance notes for highways engineers, as well as discussing funding and looking to have large projects assessed as a whole rather than as a series of individual projects split up by planning authority area. Other bodies such as the Association of Local Government Archaeological Officers, the Council for British Archaeology, and the Institute of Field Archaeologists were also involved in the review of these issues (Friell 1991). The Institute of Field Archaeologists sent their response to this review to English Heritage in

March 1992. This was published in January 1993 and took the form of guidelines on the specification of archaeological evaluations of proposed road routes (Lawson 1993). Many of the elements set out in this document found their way into Volume 11 of the *Design Manual for Roads and Bridges* (DTp 1993, below).

Following the election of a new Labour government in 1997 the Government published a consultation document *What Role for Trunk Roads in England?* (DETR 1997) detailed a range of proposals for developing the UK's road network. The report summarized the position and its proposals:

We inherited a £6 billion road building programme of around 150 schemes from the previous government, scaled down from over 500 in 1990. Decisions on 14 schemes were made in the accelerated review last July. Our carefully targeted programme will include 37 schemes, costing £1.4 billion which we intend to start within the next seven years subject to the completion of statutory processes (DETR 1997).

The report marked a change in approach summed up in the new priorities for the Highways Agency (HA) which were to give:

A higher priority to better maintenance and making better use of existing roads [and] greater emphasis to environmental and safety objectives (DETR 1997).

This was followed by the white paper *A New Deal for Transport: Better for Everyone* (DETR 1998) which set out a range of new policies rather than any detailed proposals, though it did introduce *New Approaches to Appraisal* (NATA) for road schemes (below).

Planning and Policy Guidance

In November 1990, the DoE published Planning and Policy Guidance note 16 entitled *Archaeology and Planning*, usually abbreviated to PPG 16 (DoE 1990), described as 'the most important archaeological publication the UK has seen' (Aitchison 2010).

PPG 16 placed:

Archaeology centre-stage in the planning process and ensures full consideration of the issues when decisions are taken (Wainwright 1991, 1).

It did this by:

Consolidated existing best practice in this field and provided strong government endorsement for the emergent integration of archaeological resource management with the town and country planning system (Darvill & Russell 2002, 3).

As a result it led to a new period:

Where planning advice has become pivotal to the management of archaeological sites [and] where the costs of archaeological recording are borne from development budgets and hence subject to commercial pressures (Wainwright 1991, 1-2).

It pushed forward:

The agenda for sustainable development whilst effectively transferring financial responsibilities from the state to the private sector (Aitchison 2010).

PPG 16 was followed in 1994 by the broader PPG 15, *Planning and the Historic Environment* (DoE 1994) and together, these two documents firmly locked archaeology into the planning process. Archaeology moved from responding to imminent developments to taking an active role in decision making and strategic planning (Darvill & Russell 2002, 3). PPG 16 and PPG 15 should perhaps be viewed as results of changing practices rather than causes. As noted above the guidance documents 'consolidated best practice' rather than introducing new ways of working. Many changes to archaeology, such as increasing professionalization and specialization of staff, competitive tendering between units and integration between planning and research frameworks, had been developing through the 1980s (Darvill & Russell 2002, 4).

PPG 16 meant that developers had to provide archaeological information prior to the determination of planning applications. Initially, it led to a huge rise in the number of desk-based assessments and field evaluations which in turn strengthened the case for planning conditions leading to 'mitigation by record'. It also explicitly set out the assumption that it was the developers' responsibility to fund this work, which indirectly led to a rapid rise in competitive tendering (Aitchison 2010). Meeting the requirements of the guidance led to a sharp increase in the number of professional archaeologists; from 1991 to 1998 the number more than doubled (Appendix 4), but this also had the side effect of marginalising amateurs (Aitchison 2010).

Whilst PPG 16 does not apply directly to trunk road schemes, the EIA regulations applying instead (below), it has largely determined the framework within which all archaeology in England takes place and the guidance is explicitly taken into account by Volume 11 of the *Design Manual for Roads and Bridges* (DMRB, below). Ancillary works associated with road construction such as borrow pits, compounds, and other temporary work do require planning permission and so are subject to PPG 16, but conversely, not to Environmental Impact Assessments (NPA & WA 2006, 10).

Environmental Impact Assessments

Environmental Impact Assessments (EIAs) are the principal mechanism by which the impact of large-scale infrastructure projects, such as motorways and major trunk roads, are assessed in the UK. Though they were introduced in 1988, initially relatively few had archaeological contributions and archaeology did not become well integrated into the EIA process until the mid-1990s (Darvill & Russell 2002, 38-9).

EIAs had their origins in European Directive 85/337/EEC 'on the assessment of the effects of certain public and private projects on the environment' which was passed in 1985 (Kunzlik 1996, 226). Such a directive is effectively an instruction to the member states to change their law to come into line with that directive and 85/337 was enacted by the Town and Country Planning (Assessment of Environmental Effects) Regulations 1988 (Kunzlik 1996, 226). The regulations defined a range of project types for which an EIA

was mandatory and others for which it was discretionary. In the former category were 'special roads' initially defined in the 1949 Special Roads Act; those roads with some degree of restricted access, typically motorways and other major trunk roads, other roads fall into the latter category.

EIAs consist of the assembly and analysis of data relating to a particular resource, such as cultural heritage, combined with an assessment of the impact of the particular development in question upon that resource, which together are known as the Environmental Statement. Initially guidance for undertaking EIAs was based upon the existing *Manual of Environmental Appraisal*, a less than ideal situation. In 1993, the Manual was superseded by DMRB v11 (DTp 1993) which for the first time contained explicit provision for field assessment of potential impacts on the archaeological resource (NPA & WA 2006, 1). Volume 10 of the DMRB *Environmental Design* was published in 1995, Section 6 of which covered archaeology. Rather than assessing the impact of road schemes, which was covered by DMRB v11, this set out how to mitigate that impact by assessing the importance of the remains and then laying out methods for preservation in-situ, minimising the impact and undertaking recording projects (DTp 1995, 1/1).

Archaeological assessment as set in DMRB v11 was a three stage process. Stage 1 was a rapid assessment of known sites along broad route corridors. Stage 2 was a more refined survey along better defined routes that could include desk-based assessment, aerial photography and walkover surveys. Stage 3 was a detailed assessment of the final route. Stage 3 would ideally involve both non-intrusive surveys (field walking, geophysics, aerial photography etc) and intrusive techniques (trial trenching, test pitting etc), but intrusive techniques could only be used with the landowner's permission so were often restricted in their use. Following this a mitigation strategy would be planned as set out in DMRB v10. The first option here would be to avoid impacts on significant remains and if this were not possible, or they were less significant, they could be fully excavated, subject to a strip and record programme and/or a watching brief during construction (NPA & WA 2006, 11-12).

Although the EIA regulations came into force in July 1988, because a section of the regulations excluded the need for an EIA where the draft orders were published before this several major projects that had planning consent granted well after this date did not require one. Twyford Down, Hampshire, was an example of such a 'pipeline case'; the draft orders were published between 1981 and 1985 but consent was not given until 1990 (Kunzlik 1996, 228-9; see case study).

By late 1991, 81 environmental statements had been published in respect of trunk road schemes in the UK and a further 24 schemes had not been thought to require an environmental statement (*Hansard* 14/11/1991). It is not known what proportion of these had an archaeological component but it is likely to be about a third or more (estimated from information in Darvill & Russell 2002, 39). Archaeological statements in these early EIAs were minimal; the environmental statement for the A249 M2 to Bobbing trunk road, Kent (Mouchel 1990) is typical, containing one paragraph on archaeology (though there is the implication that there was an archaeological study not included in the statement):

Kent Archaeological Rescue Unit (KARU) have identified five sites of archaeological interest within the study area. One of these sites which include the foundations of a Medieval Manor House at Bobbing would be affected by the scheme. Every effort would be made to allow KARU access to the site prior to the start of construction (Mouchel 1990, 8).

Not all EIAs have an archaeological component because they are selectively scoped by local planning authorities (Darvill & Russell 2002, 39) who then specify their aims. About 75% of EIAs undertaken during the 1990s examined the impact of the scheme in question on ecology and the same proportion on landscape, 61% examined the impact on water, 58% on highways and traffic, 47% on human beings, 42% on archaeology and 38% on buildings and structures (Darvill & Russell 2002, 39). This would appear to make archaeology a relatively low priority in the EIA process but the 42% figure conceals a marked rise. In the early years of their use relatively few EIAs had an archaeological component. Prior to 1995 the percentage of EIAs with an archaeological contribution varied between about 12.5% and 45% with figures in the 20s being most common. From 1995 through to the end of the 1990s the proportion was consistently around 60% indicating that by this time archaeological studies were 'well integrated into the Environmental Impact Assessment process' (Darvill & Russell 2002, 39).

Of those EIAs that did have an archaeological component, road schemes, both new and widening, were the most common type of development during the 1990s, accounting for 17%. This can be compared to the other major developments with EIAs featuring archaeology; mineral extraction 16.2%, service infrastructure 13.7% and urban commercial 10.5% (Darvill & Russell 2002, 40). The majority of EIAs commissioned during the 1990s were by developers (67%) but the DTp was the second largest commissioning body (almost 10%, Darvill & Russell 2002, 41, WI9), which suggests that the vast majority of those EIAs on road schemes were commissioned by the DTp. Most of the remainder were probably commissioned by county councils (5.5% of all EIAs) and perhaps district councils (2.3%, Darvill & Russell 2002, WI9).

The Highways Agency commissioned a Review of archaeological inputs into EIA for trunk road schemes that was intended to feed into the revision of the DMRB v11 undertaken during 2007 (NPA & WA 2006, 4). The review examined six schemes covering archaeological investigations undertaken from 1989 to 2002. The schemes were: A419/A417 Swindon to Gloucester trunk road improvement (archaeological investigations 1989-94); A30 Honiton to Exeter improvement (1989-96); A1(M) Ferrybridge to Hookmoor (1990-2001); A34 Newbury Bypass (1991-96, Figure 18); M6 Toll Road (1992-2000, Figure 9); A43 Towcester to M40 (1993-2002). The overall aim of archaeological work, as set out in DMRB v11 (above), is to provide an accurate assessment of the archaeology along the road route to develop an appropriate mitigation strategy, as set out in DMRB v10. On the projects assessed for the review, many archaeological sites were not identified prior to the start of construction and those that were were often not assessed properly. Several reasons were identified for this: archaeology was often not considered until late in the design process; the road design was often changed without further archaeological evaluation; ancillary impacts (borrow pits, compounds and so on) were not considered; there was no right of entry for intrusive works; there



Figure 18 - The Newbury Bypass under construction in Berkshire, 1997, looking north-east, with the A4 in foreground (© English Heritage NMR 15811/03 NMR 23-Oct-1997).

was a lack of continuity of archaeological staffing due to longevity of the scheme and/or crossing geographical boundaries; there was a lack of flexibility in the assessment process preventing, for example, undertaking work during the correct part of the agricultural cycle. The problems could perhaps be boiled down to evaluation being 'undertaken not on an archaeological timeframe, but within the overarching timeframe of the scheme programme' and led 'to a general failure of the process to serve the purposes of both the archaeologist and the road builder' (NPA & WA 2006, 97, 95).

In the 1998 White Paper *A New Deal for Transport: Better for Everyone* (DETR) the Government introduced *New Approaches to Appraisal*, known as NATA, which was a decision-making tool based on existing methods such as cost-benefit analysis and environmental impact assessment. The new approach was intended to:

Set transport problems and their solutions against environmental impact, safety, economy, accessibility and integration. ... NATA weighs up schemes in terms of positive or negative effects upon each of fifteen criteria, one of which is the impact of the proposed scheme on "heritage". ... However the final assessment - in terms of positive or negative effect - is a subjective, opinion-based decision (Aitchison 2000, 6).

The example of the 1998 assessment of the 9.2km scheme to dual the A303 past Stonehenge, including a 2km long cut and cover tunnel, was given as an example of this. Despite destroying five scheduled monuments and 11 other known sites the proposal was considered to have a 'large positive effect' on the historic environment, according to the NATA worksheet. It was suggested that despite this, the scheme, and others like it, would still be as 'politically sensitive' as the Newbury Bypass and the M3 through Twyford Down (Aitchison 2000, 6). Fortunately, perhaps, the scheme never went ahead.

The regulations affecting EIAs were updated in 1999 under European Directive 91/11/EC enacted as Town and Country Planning (Assessment of Environmental Effects) (England and Wales) Regulations 1999 (Darvill & Russell 2002, 9).

Impact

The 2002 report *Archaeology after PPG 16: archaeological investigations in England 1990-1999* (Darvill & Russell) summarised the changes in British archaeology over the decade, a period when the developments that had been gradually evolving over the previous two decades became firmly entrenched. As the title implies it principally attributed those changes to the impact of PPG 16 but also included a chapter on 'Archaeology and Environmental Impact Assessments'.

Archaeology became firmly integrated into the planning and development control system. During the 1990s, 89% of all archaeological interventions in England were prompted by the planning process and development control; only 11% could be described as research-led (Darvill & Russell 2002, 52, 54). Given that the Monuments at Risk Survey had demonstrated that about one third of all damage to archaeological monuments was from causes whose impact could be controlled through the planning system (Darvill & Fulton 1998, 237), this can only be a good thing, at least from the perspective of the archaeological community. This was accompanied by a shift from central to local government and within planning authorities curatorial archaeology emerged as a separate section of the profession (Darvill & Russell 2002, 51, 57-8). A clear distinction between work undertaken pre-determination and post-determination of planning consent also became apparent. For major projects archaeology also established itself within the context of EIAs, though not becoming fully so until after about 1995, prior to this 'the whole process was relatively new and those involved were still finding their feet' (Darvill & Russell 2002, 52).

The nature and extent of archaeological investigations also changed. The number of projects increased massively: 'overall, there were just over three times more investigations in 1999 than 1990' (Darvill & Russell 2002, 52). Not only the number but the types of investigations broadened. In the context of pre-determination works desk-based assessments and field evaluations became mainstream techniques. The number of Desk-Based Assessments rose seven-fold to over 700 annually, and though increasing proportionally less the number of evaluations rose from over 500 to over 1200 annually. The number of post-determination investigations increased even more, by a factor of 11. In particular the numbers of watching briefs rose dramatically, from a little over 100 to well over 2000 annually. Excavations also rose; throughout the 1960s, 1970s and 1980s their number varied between about 250 and 450 annually in England. In 1990 the number was only a little over 350, climbing to about 450 in 1991 but in 1992 the number of excavations jumped to 750, passed the 1000 mark in 1997 and in 1999 was over 1300 (Darvill & Russell 2002, 53).

In order to reduce costs competitive tendering emerged as the main mechanism by which it was decided who would undertake the work (Aitchison 2010). Commercial archaeology units, functionally separate from curatorial archaeologists, developed in response:

It is clear that linking the protection and management of archaeological deposits to land-use planning and the control of development has generated a major new industry within English archaeology: what might loosely be termed contract archaeology (Darvill & Russell 2002, 52).

The number of professional archaeologist also continued to grow. In 1991 there were an estimated 2200, by 1998 this had reached 4425 (Appendix 4).

By the end of the 1990s three types of unit could be identified: large regional contractors covering large areas and averaging 100 or more projects a year and with a turnover of more than £2.5 million (principally Wessex Archaeology and Oxford Archaeology Unit); regional contractors covering similar areas but averaging 60-100 projects and turning over £0.4 - £1.2 million annually (such as Trent and Peak Archaeological Unit, Lancaster University Archaeological Unit, Cotswold Archaeological Trust, Northern Archaeological Associates or Thames Valley Archaeological Services); and local contractors working in closely defined areas but varying in size (in terms of projects and turnover) from very small through county units to the largest of all units (the Museum of London Archaeology Service).

In 1998 English Heritage reported that:

The last decade has been a period of major change for archaeology in England. For archaeological services in local authorities, many of the recent changes have been brought about by Local Government Reorganisation as new unitary councils have had their boundaries reduced. National Park authorities have also been given independent status, with a new statutory duty to protect the cultural heritage. As a positive response to these changes, the Association of Local Government Archaeological Officers was formed in May 1996. It

was apparent that an update on the current state of archaeological services in local government was required so that emerging trends in levels of service provision could be monitored. As a first step, English Heritage commissioned a rapid overview of the situation, which was published in January 1998 as *Protecting our heritage*. This document showed that local authorities employed a total of 588 archaeological staff, of which 232 were employed to provide advice on archaeology and development. Overall staffing levels remained largely stable during 1997 but the impact of the Local Government Review was variable and it will take time before its full impact can be clarified (Olivier 1998, np).

Concerns

At the same time as archaeological considerations were becoming firmly entrenched in the planning process, the developer pays principle was becoming widely accepted and a coherent approach to archaeological evaluation and mitigation emerging, concerns about the whole relationship between archaeologists and the development process were being raised. These were typically identified as archaeologists being too close to the developer and not able to criticise the projects themselves, archaeologists no longer being able to determine where they excavated and archaeology as a profession becoming vulnerable to the boom and bust cycles of the building industry.

The first of these issues was discussed in an editorial article in *Rescue News* in 1993. Despite the massive roads development programme announced by the Government and the DTp in 1989 and 1990, in 1993 *The Observer* warned of:

A web of constantly widening roads across Britain and secret plans to extend the motorway network ... [and] plans to link bypasses to form a further network of strategic 'motorway standard' roads (Mellor 1993).

This prompted the author to ask:

Is the scale of the proposed programme something that we dare contemplate? ... could we even begin to cope with the scale of the work that is implied by this programme? And if we could should we? (Mellor 1993).

The article concluded that the significant archaeological results obtained from work on road schemes:

Should not mean that we blindly follow where all the new roads lead without pausing to ask whether there is a better way and a more desirable goal (Mellor 1993).

It appears that the emerging professional relationship between developers and archaeological units may have been preventing these questions being asked. In 1995 it was pointed out that:

British archaeology has been privatised and made dependent on the needs of the building industry (Sparey-Green 1995).

As a result:

When ... it comes to issues of conservation, especially the preservation of archaeological monuments within their present landscape, the field archaeologist is compromised by his relationship with the developer (Sparey-Green 1995).

The article went on to discuss the conclusions of the evaluation of the route of the A34 Newbury Bypass by Wessex Archaeology over 1991-93 which identified approximately one site per 1.5km, some of which were of 'great potential and more than local interest', including an important Mesolithic/Neolithic site and a major Romano-British site. The failure to locate a suspected Romano-British town was also discussed as being highly significant. The author concluded that:

The judgement must be that the archaeological potential of such an area deserves more than simply palliative measures of preservation by burial or record. Ideally preservation by maintenance of the existing landscape is desirable. In other words, the archaeological argument should be against the road construction (Sparey-Green 1995).

Despite the work of Fowler et al in the early 1970s archaeological work also appears to have remained overly focussed on sites:

All forms of archaeological investigation need to be conducted with a holistic appreciation of the landscape. In relation to road schemes it is all too often only the high status sites such as the medieval castle which are considered. This narrow focus on monuments has tended to ignore the surrounding archaeological landscape, relegating it to a position of such little importance that it is often lost to development without investigation (Bevan 1996).

It also appears that concerns over being too closely allied to the boom and bust cycles of the building industry were justified. Though numbers of professional archaeologists climbed steadily during the 1990s there has been a marked downturn in employment since 2007, during the current economic uncertainty (Appendix 4).

Roads archaeology

As well as details of the expanded road programme the 1990 DTp report also announced an increase in its annual funding of English Heritage to £500,000 from the financial year 1990-91, to address the increased need for roads related archaeology arising from the new plan (DTp 1990, 14). English Heritage published separate figures for their spending on DTp trunk road schemes for the first time in its report for the same year. This amounted to £726,702 on 38 individual projects, including the £500,000 from the DTp (Wainwright 1991, 43). Another four road projects were identified elsewhere in the report amounting to £84,530 (Wainwright 1991, 44-7), though this figure is likely to be low, bringing the total to over £800,000.

Rescue published a summary report on the structure and funding of archaeology in the UK for the financial year 1990/91 (Spoerry 1992). This identified an estimated total of £31.5 million rescue archaeology funding. Of this just over half came from developers

(£15.9 million), about a third from national heritage bodies and about a fifth from local authorities. In England the proportion of funding from developers would have been higher as a higher proportion of funding came from the national bodies in Scotland and Wales, 95% and 66% respectively. Compare these figures with 1986/87 when only about a fifth came from developers, some way behind government, with about a third from national bodies, just over a quarter from the MSC and about a fifth from local authorities (Spoerry 1992).

In 1991-92 there was a rise in the number of trunk road projects administered by English Heritage to 45 costing a total of £1,866,090, with another 4 road projects identified elsewhere in the report totalling £144,812 for a total budget of at least £2,000,000 (Wainwright 1992, 53, 49-52). It is not known if the DTp funding of English Heritage was also increased at this time.

In April 1992 the DTp took on direct responsibility for all evaluations undertaken as part of EIAs on trunk road schemes. Consequently the number of projects administered by English Heritage dropped by almost half to 23, though expenditure fell less, to £1,400,000 (Wainwright 1993, 9), presumably because evaluations are relatively low cost. It has not been possible to obtain information on the number of projects that the DTp ran directly but, based on the reduction in the projects and funding reported by English Heritage, it must have been in the order of about 20 at a cost of over £500,000. It is also not clear if, as a result of the changed arrangements, the DTp withdrew any financial support from English Heritage.

In 1993 the DTp took on full responsibility for the funding of all archaeological work on trunk road schemes, from initial assessments through to the dissemination of results. In this year English Heritage still funded 12 projects on DTp schemes amounting to £199,511, clearly a massive decrease; presumably these were legacy projects. Two other projects could be identified elsewhere in the report amounting to £13,239 (Wainwright 1994, 66-7, 61-6). It seems likely that DTp funding to English Heritage ceased at this time; English Heritage's rescue grants budget fell from £6,911,551 in 1992/3 to £5,840,167 in 1993/4. It has not been possible to verify this though.

In June 1994, the DTp reported that spending on archaeology had risen from £329,000 in 1989-90 to £2.2 million 'last year', presumably the financial year 1993-94, and that it might reach £3 million 'this year'. The Minister was concerned that costs had 'got out of hand' and asked archaeologists to consider ways of containing the budget on road building schemes. In particular, he suggested better evaluation of all routes rather than just work on the chosen route, implying that decisions about route choice could take archaeological costs, and therefore presumably effects, into account. This was welcomed by the Director of the Council for British Archaeology but he pointed out that the costs were not running out of control, it was simply that the DTp had been picking up the full bill only since 1993 (*British Archaeological News* 1994). The figure of £329,000 in 1989-90 spent on archaeology by the DTp referred to above is interesting. At this time the DTp were contributing £100,000 to English Heritage, which was presumably included in the headline figure. However, this still leaves £229,000 unaccounted for and it has not been possible to identify what this was spent on.

On its creation in 1994 responsibility for funding archaeological works in advance of trunk road schemes passed to the HA, an executive agency of the DTp (HA 1995, 2). In the financial year 1994-5 the HA funded archaeological investigations on 15 road schemes totalling £796,300. This is a far cry from the possible £3 million figure given above and suggests under-reporting. In the same period English Heritage spent £254,650 on at least 18 road projects (Olivier 1995).

In 1996-97 it was estimated that the value of commercial archaeology projects was £35 million at which time English Heritage was funding rescue archaeology to the value of about £5.2 million (Darvill & Russell 2002, 52, 55). By 1999, this had risen to about £42 million, whilst English Heritage's spending had fallen slightly (Darvill & Russell 2002, 62, 55). This was a significant change in archaeological funding; in 1990-91 developers spent about £15.9 million on archaeology across the whole of the UK and national and local government a similar amount, in 1986-7 government had accounted for more than 75% of all spending and in 1978-79 it was about 90% (Spoerry 1992).

In 1999 the HA published a report that reviewed its archaeological work over the previous three years, from 1995-96 to 1997-98. Its expenditure was not broken down so it is difficult to know what was spent annually though each year the projects listed accounted for £2.2 million in 1995-96, £0.9 million in 1996-97 and £1.0 million in 1997-98. These are unlikely to be correct since only total figures for completed projects were given within the year they were completed. These figures presumably included money spent in previous years, and particularly for large projects, these could contribute significantly to that year's budget.

Archaeological projects

In the UK the motorway network increased in length by about 200km during the 1990s, compared to 400km in the 1980s. A little more than 130km of this was in England (Appendix 2). The length of the rest of the trunk road network actually fell by about 400km as a result of roads being reclassified, both following improvement to motorway standard, such as the A1(M) improvement, and by being downgraded to non-trunk status. The picture is more complicated than this though. In rural areas the length of the trunk road network dropped by 300km from 1990-93, remained static for a few years, then grew by 200km from 1995-97 and fell back again by 100km. In urban areas the network fell steadily by 200km to 1994 and then remained static. The remaining principal 'A' road network grew in length by about 800km. A substantial proportion of this was due to the downgrading of trunk roads rather than new road construction. Of this 600km was rural and 200km in built up areas. Overall therefore the 'A' road network grew by 400km (compared to 1,700km in the 1980s). The minor road network increased by a total of 9,900km (16,600km in the 1980s) most of which was in built up areas (7,900km) presumably as the new roads were intimately connected with urban and suburban developments. The large-scale road projects fell under the EIA regulations but the majority were dealt with within the normal planning process or by the HA's own development and consultation procedures (Darvill and Fulton 1998, 135).

The single largest motorway project was the 74km stretch of the M40 from Waterstock to Longbridge (J8A to J15) in the Midlands, which opened in 1991, completing that road.

In Kent, 22km of the M20 from Maidstone to Ashford (J8 to J9) opened in May 1991 and in Hampshire the 14km stretch of the M3 from Bar End to the M27, including Twyford Down, opened in three stages between 1991 and 1995, completing that route. In the West, the second Severn crossing on the M4 and the M49 Severn crossing link road opened in 1996 totalling 26km in length. In the north the 21km upgraded stretch of the A1 to the A1(M) from Walshford to Dishforth opened in 1995 and in Lancashire, the existing section of the M65 was connected to the M6 by an 19km section running west from Whitebirk. (J1a to J6) that opened in 1996. Further south, 21km of the A1(M) from Alconbury to Peterborough (J13 to J17) opened in 1998. Finally, the northern end of the M1 in was linked to the A1(M) by an 18km length south-east of Leeds (J43 to J48) that opened in 1999. The only urban motorway was the 300m extension of the Mancunian Way (A635(M)) in Manchester that opened in 1992 (Appendix 3).

In 1990-91 field projects funded by English Heritage on motorway schemes included surveys of the routes of the M66, Greater Manchester/Lancashire (apparently not built) and the M5 widening, Gloucestershire. English Heritage reported excavations on the M3 at Twyford Down amounting to over £300,000 in the year 1991-92. Other motorway projects included excavation in advance of the M20 widening and M5 widening (£20,000 in total) (Wainwright 1992, 12-14, 53). The main motorway project reported by English Heritage in 1992-93 was the English approaches to the M4 Second Severn Crossing which was the most expensive work that year by a considerable margin (£345,000). Some work was also continuing on the M3 (Wainwright 1993, 10-11, 52). Work on both these projects continued into 1993-4 amounting to £10,000 on the M3 and £63,000 on the M4 Second Severn Crossing (Olivier 1994, 66).

English Heritage reported that during 1989-90 DTp trunk road schemes:

Have necessitated the investigation of large transects across rich archaeological landscapes – notably the A27 Brighton Bypass, the Norwich Southern Bypass, the A5 Shrewsbury Bypass, and the A66 in County Durham (Wainwright 1990, 5).

In 1990-91, the main archaeological trunk road projects reported by English Heritage were on the A47 at Sutton Cross, Upton Cambridgeshire, A47 Norwich Southern Bypass, Norfolk, and A35 Axminster Bypass, Somerset (Wainwright 1991, 25-6, 27-8, 30-1). In terms of cost the most significant were surveys on the A66, County Durham (£75,000) and the A46 Fosse Way, Leicestershire/Lincolnshire (£59,000), and excavations on the A47 Norwich Southern Bypass (£55,000) and A27 Brighton Bypass, East Sussex (£41,000) (Wainwright 1991, 43). Work in advance of the A259 Rustington Bypass, West Sussex was significant as it revealed a possible Romano-British tide mill (UCL 1991). English Heritage reported in more detail on archaeology and the DTp in 1991-92 and briefly mentioned work on several projects with more detailed reports for work on the Dover Sewers/A20 project, A27 Westhampnett Bypass, A41 King's Langley and Berkhamsted Bypasses, Hertfordshire (Wainwright 1992, 8-10). The main projects, in terms of cost, were the excavations on the Westhampnett Bypass (£233,000), Berkhamsted Bypass (£174,000), and A421 Wendelbury to Bicester road (£119,000) (Wainwright 1992, 53). In 1992-93, English Heritage reported in detail on work the A41 King's Langley and Berkhamsted Bypasses again (£197,000), A46 Leicester Western

Bypass (£86,500), A30 Cornwall (£318,000), and A19 North Yorkshire (£58,000). Continuing work on the A20 in Dover including the excavation of the Bronze Age Dover Boat was also significant (£194,000) (Wainwright 1993, 11-16, 52, Figure 19).

By 1993-94, the DTp had taken over responsibility for all archaeological projects on trunk roads in the UK. Consequently, the only trunk road project reported on in detail by English Heritage in 1993-4 was work on the M57-A562 Tarbock to Widnes link road, Merseyside, though this project did not appear in the accounts for the year, or for 1992-93. Of those that did, the most significant was the A30 from Fraddon to Indian Queens, Cornwall (£69,000) (Olivier 1994, 49-50, 66-7), presumably a legacy continuing from the previous arrangements. It has not been possible to obtain information on the projects directly administered by the DTp at this time.

In 1994-95, responsibility for archaeological work on trunk roads passed to the HA and English Heritage largely stopped funding archaeology on road schemes, apart from a few legacy projects and minor roads. The largest HA projects completed in this year, at least in terms of their archaeological budget, were the A564 Derby Southern Bypass (£228,900), the A428 Bedford Southern Bypass (201,400) and the A120 Stanstead to Braintree Improvement (£103,300) (HA 1995, 14). In 1995-96, the main projects were the A140 Scole - Dickleburgh Improvement (£792,000), A30 Indian Queens, Fraddon & St Columb Road (£445,000) and the A46 Norton Lenchwick Improvement (£367,000). In 1996-7 only three small trunk road projects were completed. By far the largest was the M1 – A1 link (£800,000), followed by the A4/A46 Batheaston/Swainswick road



Figure 19 - The Bronze Age Dover Boat on display (Courtesy of Dover Museum & Bronze Age Boat Gallery, www.dover.gov.uk/museum)

(£46,000) with some work on the A30 (£6,000). In 1997-98, there were again only three HA trunk road projects completed; the A564 Derby Southern Bypass Contract A (£512,000), A564 (£512,000) and some work on the A50 (£11,000). Work was on-going on 16 separate projects during 1998-99 (HA 1999).

Not all projects were administered by central government. Cheshire County Council funded work on the A533 at Church Moss from 1992 – 1996 (CCC/LUAU nd). In Doncaster, work on the A630 North Bridge relief road scheme in 1993-94 was funded by Doncaster Metropolitan Borough Council (Lilley 1994). In Kent, the county council funded an extensive project (with some support from English Heritage) in advance of the widening of the A299 at Monkton in 1996 (Bennett & Williams 1997) and on the A299 Ramsgate Harbour approach road in 1999 (Dyson et al 2000).

Recent developments

In 2000 the government published a ten year transport investment plan which aimed to:

Complete forty existing road schemes, widen 650km of motorways and trunk roads, build thirty new trunk road bypasses and eighty other major trunk road schemes. On a local basis provision is made for 200 major schemes of which seventy will be bypasses (Aitchison 2000, 5)

Since then the pace of road development has continued to slow. Across the UK the motorway network has only increased by 115km (to 2009) and 'A' roads by 200km, though this hides a major de-trunking programme that down-graded more than 3,100km of road. It is harder to estimate the growth of the minor road network over the same period as new methods allowed better estimates to be made in 2004 (lowering the figures) and in 2006 (raising them again) but it would appear to have been about 4,500km (Appendix 2). Less than 100km of new motorway have opened in England, almost half of which (43km) is accounted for by the M6 Toll, Birmingham Northern Relief Road which opened in December 2003. The other main project was the continuing upgrade of the A1(M) with three sections opening between 2005 and 2009 amounting to almost 30km. The other projects were relatively short, the M60 Denton to Middleton (J19 to J24) which opened in 2000 was 15km long, and the M6 Carlisle to Guards Mill that opened in 2008, only 10km.

In 2004, English Heritage published a policy statement on Transport and the Historic Environment. This identified the organisation's main concerns as being:

Where there is significant new infrastructure, or where there are schemes which may be small scale but could have a disproportionate impact on particularly sensitive historic sites. We are also concerned about the effects of incremental changes, such as the piecemeal dualling of trunk roads (EH 2004, 1).

Amongst several other policies English Heritage called for 'Government, its agencies and local authorities to':

Ensure that transport appraisal properly assesses the impacts on the historic environment to an appropriate level of detail' [and] Take

account of the wider historic environment ... not just designated sites (EH 2004, 2-3).

In 2007, the HA added Historic Landscape Assessment to the baseline data for environmental assessment contained within DMRB v11 in order to enhance the Cultural Heritage Analysis element of EIAs undertaken on road schemes (HA 2007).

In March 2010, PPG 16 and PPG 15 were replaced by *Planning Policy Statement 5: Planning for the Historic Environment* (DCLG/DCMS/EH 2010, Aitchison 2010).

Case Study: Twyford Down

Immediately to the south of Winchester, Hampshire, runs the western end of the South Downs, a line of chalk hills that rises to well over 100m above sea level. The valley of the River Itchen breaks through the Downs creating an important communications corridor, used for millennia. Twyford Down and the adjacent St Catherine's Hill form the western end of the high ground to the east of the Itchen Valley.

In the early 1990s, Twyford Down became synonymous with roads protests when it became the site of the United Kingdom's first road protest camp, against plans to extend the M3 through the down in a very large cutting. The history of this road scheme can be traced back to the early 1970s and that of modern roads in the area runs back as far as the 1920s. Though most attention has been focussed on the cutting through the Down, the high level approach to it from the south was probably as damaging as the cutting itself (Bryant 1996, 197). This case study looks at the section of motorway constructed from Bar End, through Twyford Down and across the Itchen Valley as far as Compton.

Twyford Down before the M3

Before the archaeological investigations associated with the construction of the M3 it was already known that Twyford Down (Figure 20) was a significant prehistoric landscape. As well as Mesolithic and Neolithic material from the area, indicative of visitation at least, the Bronze Age barrow examined during M3 works had already been identified on aerial photographs (Walker & Farwell 2000, 1). On St Catherine's Hill the large Iron Age hill-fort, had been partially excavated in the 1920s (SAM 31165/1, NMR SU42NE 15), and across the Down extensive remains of prehistoric field systems, track ways and settlements generally thought to be of Iron Age or Romano-British date had been recorded as both upstanding earthworks and crop-marks, with a few minor excavations in the 1930s (NMR SU42NE 46, part SAM 31163/1; NMR SU42NE 78; NMR SU42NE 45; NMR SU42NE 44, SAM 31164/1). In the same area crop marks had shown a possible Iron Age or Romano-British temple (NMR SU42NE 79) and a Roman road was thought to run along the northern edge of the down (NMR Linear 245, SAM HA 543, NMR 31162/1-4). Taken together it was clear that Twyford Down was the focus for settlement and agriculture from at least the Bronze Age until the Romano-British period. In the historic period Twyford Down appears to have been less intensively used aiding the preservation of the prehistoric evidence. Apart from the medieval St Catherine's Chapel (NMR SU42NE 14) and a small post-medieval maze (NMR SU42NE 5) within the hillfort, the most significant post-Romano-British features on Twyford Down are the Dongas (NMR SU42NE 162), a complex series of medieval hollow ways. It seems that Twyford Down had reverted to pasture and become a relatively marginal landscape, perhaps emphasised by the eponymous pits in Plague Pits Valley (NMR SU42NE 33).

The Itchen Valley contrasted with Twyford Down as it was known to be a significant historic (rather than prehistoric) landscape with numerous important medieval and post-medieval elements which had largely removed evidence for earlier periods. A few early finds from the valley were known such as a small Bronze Age looped and socketed axe found near the railway viaduct over River Itchen (NMR SU42NE 38) but very few sites remained visible, particularly along the line of the motorway. Perhaps the primary

significance of the Itchen Valley was always as a communication corridor, the river was probably a significant transport link from later prehistory if not earlier. Winchester was an Iron Age centre probably in part because of this (Walker & Farwell 2000, 1). In this area the western side of the valley is the more open and thus heavily settled and was probably always the main overland route. A Roman road was thought to have run along this side of the valley (NMR Linear 503) the line of which is in use today. The string of medieval sites along its length, such as Compton manor house/moated site (NMR SU42NE 169, SAM 12059/1), suggests that it remained in use throughout the middle ages. In contrast the east side of the valley was largely unused as it abutted the steep side of St Catherine's Hill. Later route-ways though, such as the canal, railway and original by-pass, ran along this side of the valley in part because of this absence of existing use. By the later medieval period much of the River Itchen's flow had been diverted for other uses such as mills and meadows (ecologically and archaeologically important in their own right) which, combined with natural processes, meant that it was no longer navigable as far as Winchester. To get around this the Itchen Navigation was constructed around AD 1700



Figure 20 - Twyford Down before the construction of the M3, from the north-west (NMR SU4827/38 30-JUL-1987 © Crown copyright. NMR). St Catherine's Hill is to the right with Plague Pits Valley running into the centre of the image.

(NMR Linear 24), one of the earliest such schemes in the country. The Didcot, Newbury and Southampton Junction Railway was constructed in about 1880 and closed in 1964 (Linear 223). It crossed the Itchen on a viaduct (SU42NE 63) close to the motorway. Finally, the original Winchester bypass ran from King's Worthy in the north to Compton in the south. It opened in 1940 and was one of the first to be dual carriageway along its full length (Sabre). At the time there was some controversy as the road separated the town from St Catherine's Hill (Visit Winchester nd). By the time of the planning of the M3 it had become one of the most serious traffic bottle-necks in the country.

The area was also considered to have a high scenic value and to be ecologically important. Twyford Down and the Itchen Valley was a part of the East Hampshire Area of Outstanding Natural Beauty. Part of Twyford Down lay within the St Catherine's Hill Site of Special Scientific Interest (SSSI), noted for calcareous grassland species (Natural England nd). Almost the whole of the Itchen Valley itself was also a SSSI, generally lowland grassland with meadow species (Natural England nd).

The M3 before Twyford Down

The M3 was first conceived soon after the Second World War, initially as a London to Basingstoke trunk road to relieve the A30. After a public enquiry the route for this section was fixed in 1967 and ran as far as Popham, Hampshire (J8). Construction of the first section from Lightwater to Popham (J3-8) began in late 1968 and this opened in 1971, directly followed by the section towards London (J1-3) in 1974.

The continuation south from Popham was planned separately and the route fixed in 1973 following a public enquiry in 1971. The section from Bar End (J10) to Compton (just south of J11) was initially planned to run around the western side of St Catherine's Hill and alongside or through the water meadows along the Itchen, roughly following the line of the earlier bypass and railway. In 1976/1977 at a public enquiry to examine the routes of the side roads, there was fierce opposition to this part of the route. Orders were therefore made to commence the relatively uncontroversial section from Popham to Bar End but with further studies on the remaining sections to the south. This section was opened in 1985 but its construction effectively narrowed the range of options for the next sections. A section to the south, from Pitmore to Chilworth (J12-14), which connected to the M27 was completed in 1991 leaving a gap between junctions 10 and 12, the Twyford Down section (MAT nd), and narrowing the options even further.

The majority of archaeological work on the M3 followed a meeting that took place in Winchester in February 1972. This was convened as a result of the increased awareness of the destruction caused by road building following work on the M5/M4 and M40 (for example Fowler & Walthew 1970). The meeting resolved to undertake a survey of the route to plan for rescue excavations on selected sites and resulted in the formation of the M3 Archaeological Rescue Committee (Fasham 1991, 80). By this time the motorway was already open or under construction as far as Popham. On this section of over 60km perhaps eight archaeological sites were examined as a result of, or immediately prior to, motorway construction (below) or one site every 7.5km, many of which were already known (see 'M3 Junctions 1-8: related archaeology' below). In stark contrast, during the

archaeological work along the line of the Popham to Bar End section, a stretch of only 17km, 45 sites were investigated, many of which were previously unknown – or one site per 0.378km (Fasham 1991, 95). One of the best known was the predominantly Iron Age site on Winnall Down (Figure 21).



Figure 21 - Winnall Down, August 1982 (© E Whitbourn). One of 45 sites examined between Popham and Bar End – the gullies of two Iron Age round houses are visible in the middle distance with their enclosure ditch running across the image foreground.

Following work on the M5 the idea of the discrete 'site' was already becoming out-dated;

'The real answer to the question of how many sites were dug in the course of the M3 project is that there were 45 investigations but only one site' (Fasham 1991, 96).

The work done during the era of the motorway committees was fundamental to this shift of perspective, still seen today in the emphasis on the historic environment as opposed to individual monuments (see for example DCLG/DCMS/EH 2010). The figures above are therefore quoted to allow for a comparison and an indication of what may have been lost without record on the first section to be built – perhaps 150 sites.

As noted above, the work on the M3 took a direct lead from that on the M5/M4 and M40, but partly because of timing, and partly because of delays to the road construction plans caused by opposition to the route near Winchester, the M3 Archaeological Rescue Committee had rather more time available to them and were able to mount a 'less frantic response' (Fasham 1991, 79). Their work spanned what was possibly 'the golden decade of rescue archaeology' (Fasham 1991, 79) and reflected the development of the profession over that period and beyond:

The archaeological response to the M3 was a reflection, in microcosm, of archaeological developments from the late 1960s. The response went from a primary, amateur initiative which was chaired and supported by professionals, to a threat-specific professional unit which attempted to incorporate the needs of the amateur; and ended a decade later with an exclusively professional collaboration between a large regional unit and a district council on both an excavation with a clear sampling design and the watching brief during construction (Fasham 1991, 79).

The 'professional unit' was the Trust for Wessex Archaeology which took over the work in 1980, and went on to undertake excavations in advance of the Bar End to Compton section through Twyford Down (Walker & Farwell 2000). It is now simply Wessex Archaeology, one of the largest units in the United Kingdom.

M3 Junctions 1-8: related archaeology

This section was constructed 1968-74 (J3-8, 1968-71 and J1-3, 1971-74). NMR records do not usually indicate the reason for undertaking investigations so to identify those records likely to be related to M3 construction monuments and events within 250m of the motor way were selected. From this events dating from after the construction dates or long before were dismissed as were previously known monuments without associated events within the correct timeframe. This left the eight records below.

Table 1 - Possible archaeological interventions during early phases of M3 construction (NMR)

HOB UID	NMR no.	Description	Related	Sources	Notes
236074	SU 54 NE31	Vindonium: A possible RB sett. Pits and ditches with finds of pottery querns and animal bones.	Event 627526		Excav 1969. Possible.
240472	SU 65 SE13	Cropmarks of enclosure and complex of circular ditches; occupied in the Late IA, early and late RB periods with desertion between.	Event 627631	Archaeol Excav 1969 DOE p55	Excav 1969 by DOE. Probable.
240576	SU 65 SE33	Enclosures on APs. Excavations ahead of road works. Length of apsidal walling of flint and chalk with adjacent portion. Finds from ditches incl quern frag, RB pottery and coin.			On line of M3. Possible.
240844	SU 65 SW55	AP's show enclosures. A 3rd site pt exc in 1968; enclosure ditch (c52x44m), and refuse pits. Finds included body of infant; part of an ox, 2 RB coins, 1st and 3-4th C pottery; and bronze objects. Site destroyed by road works.	Event 627624		On line of M3. Probable.
244247	SU 75 SW6	RB tile-kiln excavated in 1970. Rectangular; with open end and stoke-hole. Constr of used tile, parts 1'6" high. Partly demolished after short period of use. Coins date to mid-4th C	Event 627787	Arch. Excav 1970 1971. 64; Britannia 2. 1971. 282-3	Excav 1970. Off line of M3. Possible.
244398	SU 75 SW53	Bronze Age pegged, socketed spearhead found during construction of M3 in 1972.			Confirmed.
247642	SU 85 NE13	Pottery kiln, located at the Old Malthouse in 1967 during excavations under the dining room floor. Production was during mid-17th C.	Event 627823	Post Med Arch, 2, 1968, 185	Unlikely.
247669	SU 85 NW9	Pottery kiln identified at Cove during construction of M3 in 1971-2.	Event 627813/651708	Post Med Arch 9, 1975, 164-87	Confirmed.

Campaigning and Protest

The motorway route in a cutting through Twyford Down was first recommended by consulting engineers Mott Hay and Anderson and accepted by the Government in 1983, whilst the section to Bar End was still being constructed. The proposal initially appears to have been generally popular: 'much of Winchester, and its institutions, had enthusiastically embraced the concept of the area between St Catherine's Hill and Winchester becoming traffic free for the first time in fifty years' (Bryant 1996, 21), in particular Winchester City Council was a supporter of the scheme. However, a small group became increasingly concerned about the impact of the scheme and began to put together a formal objection to be presented at the public enquiry (Bryant 1996, 15-35). This took place in July/August 1985 (Bryant 1996, 36) but was reopened in late 1987 and ran on into 1988 (Bryant 1996, 100, 119). By this time local support had coalesced around a tunnel roughly on the line of the cutting scheme as the best solution (Bryant 1996, 122). The campaign was still essentially local but in April 1989 both *The Times* and *The Telegraph* ran substantial pieces effectively moving the issue onto the national stage (Bryant 1996, 125-6). The decision in favour of the cutting route was announced in February 1990 (Bryant 1996, 135) but the campaign continued, initially in the High Court (where they came into contact with campaigners against the M11), which found against the campaigners in October 1990 (Bryant 1996, 148-50), and then in Europe, where the Commission announced that it would not be proceeding with the case in late 1991 (Bryant 1996, 160). Immediately after this, in December 1991 the construction contract was awarded to Mowlem (Bryant 1996, 184). The political campaign effectively ended with the 1992 general election and finally conceded in the August (Bryant 1996, 215).

The first direct action took place in February 1992 when protestors chained themselves to machinery and had to be forcibly removed (Bryant 1996, 188). By the end of February, Earth First! were involved and by this time the first members of what was later to become the Dongas Tribe had arrived in the area (Bryant 1996, 189, 192). Twyford Down had become the first roads protest camp in the United Kingdom but was surprisingly small given its impact:

We were simply 15-odd (very, very odd) people on a hill, with a goat, running out to stop two old bulldozers and a few site officials and cops who'd come up to try and catch us unawares ('Alex' 2002).

The camp was forcibly evicted in December 1992, but quickly relocated. The perceived violence of the eviction led to a rapid growth in the number of protestors and a second, more high profile, stage of the campaign which continued into the initial construction phases and which became a 'war of attrition' ('Alex' 2002), the high point of which was probably a site occupation by about 5000 people in early 1993, when the cutting was well advanced. In the end the protestors lost, but the total cost of policing the protests was perhaps greater than the money saved by not building the tunnel (Monbiot 1997).

At the time, the protestors were largely dismissed by the political campaigners:

The more militant protestors who were present for the first time in ... February, were to remain on the periphery, but were present at all subsequent events (Bryant 1996, 188).

This is probably an inaccurate representation of the significance of the protest movement at Twyford though; Bryant was a Conservative councillor and firmly committed to campaigning within the democratic system; in over 200 pages the protests were only mentioned in three paragraphs. The assessment of the protests by Jonathan Porritt, an environmental campaigner, was probably fairer when he described them as 'rearguard heroics' (1996, 298):

Long after the Twyford Down campaign was lost, and the Dongas had been brutally routed, Twyford Down continues to work its magic as a symbol of opposition to undemocratic, ecologically wanton road-building, wherever it takes place (Porritt 1996, 299).

The opposition to the original plan to run the motorway along the eastern side of the Itchen Valley, roughly along the line of the existing bypass, was based upon the even more profound severance of St Catherine's Hill from Winchester, the necessary relocation of the Itchen Navigation and the major disruption to the water meadows (Bryant 1996, 9). This opposition was based upon direct visual and environmental impact of the motorway, loss of amenity value and damage to elements of the historic environment all themes that re-emerged in the campaign against the cutting. These themes tended to be voiced in general terms such as

Concerns about damage to the unspoilt downland [and] that immense damage would be inflicted on the landscape by the suggested route through Twyford Down (Bryant 1996, 17, 20).

However, specifically mentioned was:

'The historic and archaeological importance of Twyford Down and St Catherine's Hill, and the area of the old Roman Road' (Bryant 1996, 23).

More emotionally:

The feel of the place, especially the area around the Roman Road, where the deep hollow-ways worn as much as 20ft deep by medieval man and his stock passing to and from the commercial hub of Winchester had a special quietness' (Bryant 1996, 23)

This feeling was a factor in the early campaign and concern about the 'Dongas' clearly chimed with that of the later protestors who took their name from the area. There was also an echo of the protestors' opposition to the 'male hegemony' in the campaigners' description of the cutting as an 'arrogant' solution (Merrick Denton-Thompson, a Hampshire County Council landscape architect in the early 1980s, quoted in Bryant 1996, 19). For the protestors though, it was more explicitly ideological. It was:

About the way society related to nature, value systems, gender politics ... power relations, state control ('Alex' 2002).

Though underpinned by very different politics the views of the protestors and campaigners were clearly similar. Ultimately, what the protestors were opposed to was the destruction of:

One of the most precious landscapes' (Rebecca Lush Blum, quoted in Early 2008).

Construction and Archaeology

The construction of the Twyford Down section of the M3 probably began sometime in 1992 and it opened in June 1995 (MAT nd), completing the motorway from London to Southampton. The construction works, including the excavation of the cutting and the construction of the high-level approach across the Itchen Valley using material from the cutting, involved about 45ha of land (Walker & Farwell 2000, 171, Figure 22).

Archaeological investigations started some years earlier than the construction phase and the post excavation analyses continued for several years afterwards; the evaluation began in March 1990, fieldwork continued through into 1993 and the results were published in 2000 (Walker & Farwell). The initial evaluation strategy was prepared by Wessex Archaeology, based in part on the methods previously developed on the M3, and the fieldwork carried out in April and December of that year. This involved the excavation of hand-dug test pits, machine cut trenches and auger coring along the whole length of the motorway corridor. Apart from a small area to the south, field walking was restricted to



Figure 22 - The M3 through Twyford Down, Hampshire, under construction in 1991, from the north-west, approximately the same position as Figure 22 (NMR SU4827/115 07-JUL-1993 © Crown copyright. NMR).

the north section, on the top of the Down, as was geophysical survey (Walker & Farwell 2000, 160-8). This work identified two main areas of archaeological significance, both in the north of the motorway corridor on the Down itself; Area A to the north (Figure 23) and Area B to the south, together with two smaller areas, C and D a little further south again. A total of about 3.5ha was excavated in 1991. A watching brief which continued into 1993 was maintained throughout the ground works. Overall the evaluation was felt to be successful and the watching brief did not turn up any significant unexpected finds or features (Walker & Farwell 2000, 169-70). This work was funded by the DTp and monitored by English Heritage. Post excavation work began in 1994 and was managed by Gifford and Partners Ltd, an engineering consultancy (Walker & Farwell 2000, 1, 5-6).

The excavations on Twyford Down resulted in 'an intimate picture of the settlement and use of Twyford Down from the end of the Early Bronze Age to the early Romano-British period' (Walker & Farwell 2000, xiii). During the excavations two main themes emerged: Bronze Age funerary practices, centred on the excavation of a barrow; and two phases of settlement and field systems of the later Bronze Age and Iron Age/ Romano-British periods. However, two of the scheduled monuments were completely destroyed (Schofield 2009, 87).

One element missed from the planning battles and evaluation works was the substantial temporary work camp on the southern side of the Itchen Valley, adjacent to Junction 9. Because the road assessment didn't apply to this camp it was missed from any evaluations until the main contractors were appointed, resulting in rather rushed assessments to avoid delaying the overall project (Dave Batchelor, pers comm).



Figure 23 – The ring ditch of a barrow under excavation in Area A (4716/07 21-AUG-1991 © English Heritage.NMR). The wooded edge of Plague Pits Valley lies at the top

The motorway

The M3 now runs through the 'ugliest cutting in Europe' (CSD 2004, Figure 24) and it is this that everyone sees as they drive along the M3. Many people consider that a tunnel would have been preferable, and with the benefit of hindsight, perhaps no more expensive. However, the bottleneck of the old by-pass has been removed reducing journey times, although to a degree it has been replaced by jams caused by trucks chugging up the very steep slip road to join the north-bound carriageway.

The opening of the motorway also took traffic off the existing bypass allowing its closure and reinstatement and reuniting Winchester with St Catherine's Hill, albeit cutting it off from the rest of the downs. As Fred Pearce wrote in *New Scientist*:

It is a classic image of England. Take a walk out of medieval Winchester, past the cathedral and over the water meadows, where John Keats wrote his ode *To Autumn*, and on up the chalk downland to the top of St Catherine's Hill, site of an ancient hill fort. Only from the top of the hill do you begin to hear the M3 as it ploughs through a gash in the next crest - Twyford Down. And, whisper it for fear of waking the ghosts of the protesters who camped here in 1993, it is the motorway that made the quiet of the walk possible. Confused? Before the ruin of Twyford Down, another road, the Winchester bypass, carved its way between the water meadows and St Catherine's Hill. But as part of planning approval, engineers had to remove the bypass. Which they have. To dramatic effect. Peace has been restored to the water meadows and the walk is silent and unimpeded. The meadow has



Figure 24 - The M3 cutting looking south, February 2011 (Peter Williams © English Heritage DPI39175)

been reunited with the hill; the cutting filled in. This spring, on the path of the old road, you can hear skylarks, watch butterflies and sniff wild thyme. You would never know there had ever been a bypass here. Three cheers for the environmental engineers (quoted in CSD 2004).

Ironically, shortly after the reinstatement of the old route of the Winchester Bypass a substantial section of it adjacent to Junction 10 at Bar End was re-excavated in order to provide a 'park & ride' car park. More recently land adjacent to Junction 9 has been proposed for development as another park & ride. Part of the justification for this was that since it had been used for the temporary construction camp for this section of the motorway it was effectively a brownfield site (Dave Batchelor, pers comm).

Although several archaeological sites were destroyed by the motorway, the results of the archaeological work undertaken in advance of construction and funded by the DTp added to our knowledge of the past, potentially informing the management of the remaining archaeology on the Down. Also, although the motorway destroyed 1.9ha of St Catherine's Hill SSSI, the route of the old by-pass was reinstated, and together with some adjacent arable land, was planted with 7.2ha of species rich grassland supervised by The Institute of Terrestrial Ecology (CSD 2004), perhaps off-setting this loss (Figure 25). A further 4.1ha of the Itchen Valley SSSI was destroyed by the motorway though this is perhaps less significant given the overall size of the SSSI.

Twyford Down also had an impact on the roads protest movement. It was the original kernel from which the later campaigns developed:

By this time [1992] the anti- roads movement had a life of its own, with new campaigns urgently needing numbers, people getting more



Figure 25 - The reinstated route of the old Winchester Bypass (author).

strategic in how to fight and what it was we were actually fighting, using our experience in other situations ...Cradlewell, the M11, Solsbury Hill... and increasingly, our actions diversifying into related areas as we adapted tactics we'd learned worked at Twyford (office occupations, for example) for other enemies, other targets (Alex 2002).



Figure 26 - The monument erected by road protestors at Twyford Down (Peter Williams © English Heritage DPI39174). The inscription reads 'THIS LAND WAS RAVAGED BY: G. Malone; J MacGregor; R Key; J. Major; D. Keep; C. Parkinson; C. Patten; M. Thatcher; C. Chope'.

It can also be argued that ultimately, the roads protests of the 1990s had an effect on government policy. In 1995, the government withdrew plans to widen parts of the M25 to 14 lanes (Porritt 1996, 306) and following the 1997 general election numerous road schemes were dropped. Since then new road construction, particularly of motorways, has been greatly reduced (Appendix 2).

Recently, Twyford Down has been examined by John Schofield who highlights that landscapes of the later twentieth century are often contested and that:

The process of change is in itself interesting, whether or not the landscape that results is deemed by everyone to be significant' (Schofield 2009, 88).

Now that the motorway has been built it has become a part of the landscape and the heritage of the area, symbolic of both the continuity with earlier roads and the conflict surrounding its construction; Twyford Down has 'discord value' (Schofield 2009, 88). This is embodied in the monument erected by anti-road protestors on the Down immediately to the east of the cutting which was deliberately excluded when the scheduled area was redefined in 2000 (Schofield 2009, 96; Figure 26).

DISCUSSION AND CONCLUSIONS

It has long been accepted that developments of all types and road schemes in particular offer both problems and opportunities:

A random transect through the landscape can provide an interesting insight into the density and character of archaeological features, but at the same time few would regard this as the ideal means for achieving an understanding of landscape development (Hinchcliffe 1987, 13).

Problems

Destruction

The main impact of road-building is the construction, including ancillary works such as landscaping, drainage and screening, as well as temporary works related to the construction itself such as compounds, access roads and soil stacks. At the time of The Monuments at Risk Survey of England 1995 the average three-lane motorway corridor was 42m wide, a dual-carriageway 28m and a conventional A-road 14m and more land is required at junctions (Darvill & Fulton 1998, 133). The average size of new roads, junctions and upgrades along earlier routes, has increased over the years (see front cover); as noted above most earlier motorways were originally constructed as two-lane dual carriageways but most have been and are being widened, four-lane motorways are becoming increasingly common, five-lane examples are no longer unusual and one section of the M25 is six lanes wide. By 2001 an area of 3,065km² of England was covered by roads (DTp 2010), which equates to about 2.3% of the whole land area.

Within the road corridor destruction caused by road-building is generally total unless specific measures are taken. Ancillary structures and temporary works are less damaging. Large quantities of materials are also required, particularly aggregates, which have their own impact but these are usually assessed separately (Darvill & Fulton 1998, 133). The Monuments at Risk Survey estimated that in the period between 1945 and 1995, 9% of the observed destruction and 4% of the damage to surveyed monuments was due to road building (Darvill & Fulton 1998, 133-135). This made it the fourth most significant factor affecting archaeological sites after development and urbanisation (27% of destruction/9% damage), agriculture (10%/30%) and mineral extraction (12%/2%) (Darvill & Fulton 1998, 128-141).

Different projects have revealed different numbers of 'sites' along their length. One of the lowest figures obtained was on the Wincanton Bypass where only four sites were discovered or examined along roughly 8km of road (Ellison & Pearson 1978), a density of 0.5 sites per km. Elsewhere, such as on the M5, a figure of about one site per km can be taken to be more representative, but as many as 4.1 sites per km have been seen on a 19km stretch of the M3 in Hampshire (Darvill & Fulton 1998, 134). To a large extent these variations will be down to factors such as changing methodologies and variations in local topography and geology (see the A38 above) and, for this study, there is no way to assess how accurate the figures might be or how broadly applicable they are. There is also no discussion here as to what constitutes a 'site' or how significant any particular 'site' may be.

Prior to 1970, in the period before the impact of the motorway committees had been felt and when 'few archaeological eyebrows were raised' (Fowler above), about 1000km of motorway were opened (Appendix 2) and more were under construction. If the figure of about one site per km is taken as generally representative, then it is likely that at least 1000 were destroyed or damaged without record, more probably the former. The motorway committees would not have halted the losses, merely reduced them, since they were focussed on a few large schemes in the south of England. Over the next five years (1970-74) 930km of motorway were opened in the UK but of this two-thirds, 620km, was on schemes not covered by a committee (MAT nd).

Based upon the planned road building programme of the time, which proposed about 4000km of new road construction and improvements during the 1990s, it was suggested in the Monuments at Risk Survey that road construction might become the most destructive form of development, potentially affecting 400 monuments per year over a ten year period (Darvill & Fulton 1998, 135). The equivalent figures given for development and urbanisation, and mineral extraction were about 153 per year and 32 per year respectively (Darvill & Fulton 1998, 133, 137). Eventually, far fewer roads were built than planned. Changes in recording methods in 1993 make it difficult to be precise, but during the 1990s the motorway network grew by about 200km and the major road network by about 700km (Appendix 2) so perhaps 'only' about 90 sites were affected each year, though this estimate does not take road improvements into account so the figure is probably higher.

By the 1970s, it was hoped that 'preservation by record', the excavation, analysis and publication of what was to be lost, would offset the destruction of sites but most archaeological projects on road schemes were rushed and the recording consequently frequently inadequate. This was compounded by inadequate publication and the records of early excavations are often frustrating as they seem to suggest more about what was lost than they reveal about what was found. This has become less of a problem over the years though and many published reports on modern road projects are large monographs that are models of site reporting and landscape synthesis.

Damage

It was noted above that within the road corridor destruction of archaeological sites is generally total. Where sites are damaged by road construction it is generally because they only partially lie within the corridor. Damage in this context is a percentage of the whole site that is totally destroyed rather than an overall erosion of a site as might be caused by ploughing for example. This latter form of degradation is more commonly caused by vehicles themselves rather than road construction.

Modern vehicles are often unsuited to historic urban centres and can damage buildings. In Lincoln, the Newport Arch, the north gate of the Romano-British colonia, survived intact until it was hit by a fish fingers lorry in the late 1960s (Figure 27). The gate had to be taken down to free the trapped lorry and was later rebuilt (Colyer 1971, 67-8). In a remarkably similar incident a contractor's lorry destroyed a medieval arch at Scone Palace, Scotland in September 2010 (*The Scotsman* 28/9/2010) and on a smaller

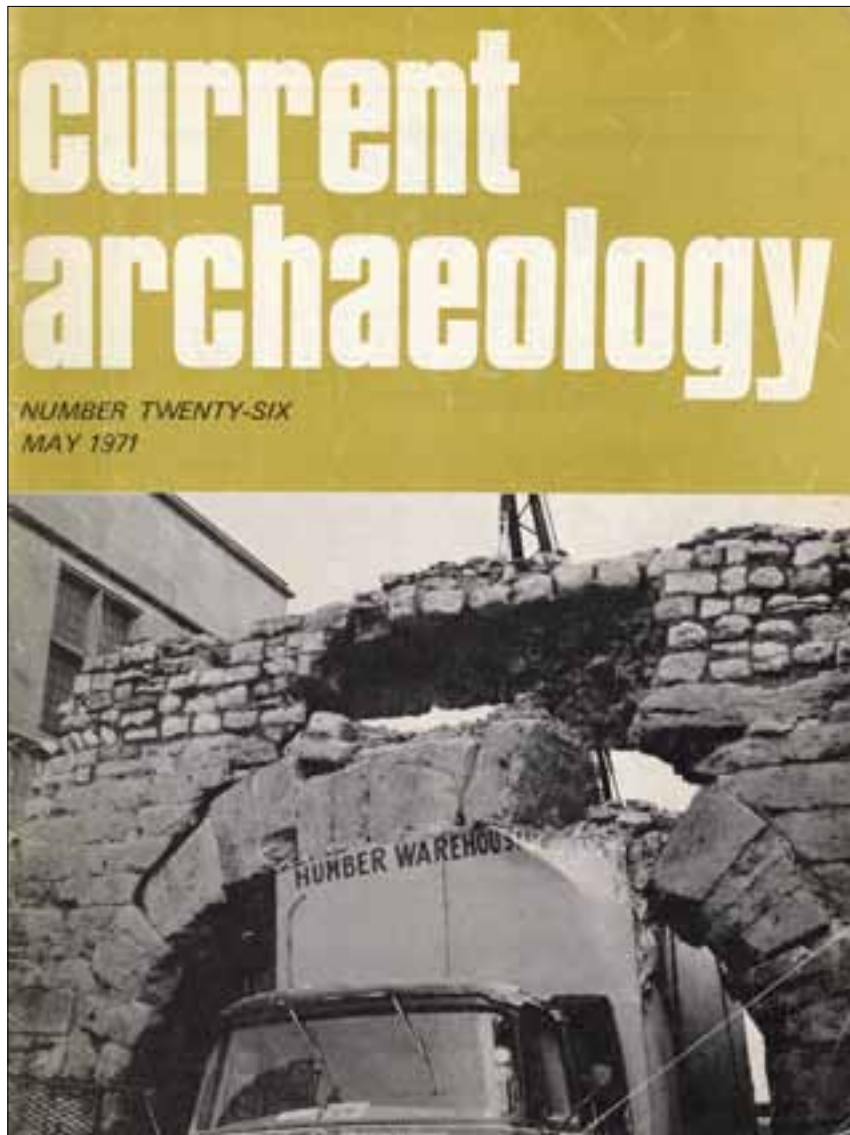


Figure 27 - The front cover of *Current Archaeology* 26, May 1971, showing the trapped lorry (reproduced with permission – www.archaeology.co.uk)

scale another medieval arch outside Peterborough Cathedral was damaged when a car crashed into it in 2008 (*Peterborough Evening Telegraph* 26/7/2008). In a rural context, damage by four-wheel drive vehicles and trail bikes is becoming increasingly common. These can have a serious impact on unpaved trackways, frequently historic in their own right, as well as on archaeological monuments. In an article on 'green laneing', touring rural unpaved roads in 4x4 vehicles, the BBC reported on 'a Roman settlement of archaeological importance that's suffering from the onslaught of 21st Century technology' in the Yorkshire Dales (BBC 25/2/2004). Increasing numbers of agreements are being drawn up to limit the impact of these activities though, such as that at Stanage in the Peak District (PDNP 31/10/2005).

As a footnote, the car led to the death of one of the pioneers of aerial photography in archaeology. Major George Allen was killed in a motoring accident in 1940. In the decade before his death he had developed a new camera and begun to take innovative oblique shots of archaeological features (Hauser 2008, 85).

Separation

Modern roads tend to act as barriers to a far greater degree than roads did before the car, and the extent to which they do so is increasing as roads get wider (above). Motorways and many trunk routes are legally enforced barriers which it is only possible to cross at certain points, with access prohibited to pedestrians, cyclists, equestrians and some classes of vehicle users. Even relatively minor roads can be barriers to the very young or very old. Not only can they be physical barriers preventing access from one side to the other they can also be visual barriers obstructing views and audial barriers with traffic noise shutting out other sounds. Roads can also be social barriers, the cumulative effect of the separations identified above, creating a modern version of the 'wrong side of the tracks'. In Bristol, the third section of the M32 opened in 1975 and divided two previously united parts of the city which still causes road safety and social problems today (BBC 9/12/2008). New roads frequently left isolated fragments of land behind, corners of fields or plots cut off from a larger section. In rural areas this 'severed land' can be dealt with by removal of hedgerows or additional planting which reduces its impact (DTp 1990, 11), though at the expense of obscuring earlier patterns in the landscape. In urban areas these areas often led to 'haphazard, low-value development, or none at all' (Smith 2010, 18) leading to degraded areas along the road corridor which both reduce the quality of the urban environment and exaggerate the barriers they represent.

The main direct consequence of this the separation of interconnected archaeological elements, such as an outlying barn from its farm or a manor house from the village. Not only does this make interpretation more difficult on the ground, but it can also change the perceived value of the isolated component, typically reducing it, or make it more difficult to manage leading to neglect and an actual loss in value. This can contribute to the steady erosion of the historic landscape by making each loss appear less significant and easier to justify.

Piecemeal development

One further aspect of road development which needs to be highlighted is the problems caused by piecemeal development of major routes, particularly the trunk route network. Once they have been designated, these key routes have tended to be upgraded in short sections without any clear overview, in contrast to the motorway system. Typically major bottlenecks in towns and villages were the first to be bypassed, often as long ago as the 1920s and 30s. These was then followed by other sections which were either early enough to escape archaeological interest or uncontentious. This then leads to a situation where a number of sections of a route have been upgraded often to dual carriageway with the rest following the original route. Over time, these sections increasingly come to be perceived as bottlenecks themselves requiring upgrading, again starting with the least difficult and progressing up the scale of difficulty. Eventually only the most difficult or controversial sections of some routes remain. The problem is that there is a degree of national level planning in the designation of trunk routes that isn't reflected in consistent and comprehensive plans for these routes. This has the effect of placing the most difficult or controversial sections directly in the way of any upgrades as the options for avoiding them progressively reduce as the start and end points move inexorably closer.

This was clearly the case at Twyford Down on the M3 (above) but other examples are widespread. There are references throughout this report to the A1, where not only has this road gone through a piecemeal upgrading process, first to trunk, then to dual carriageway and more recently this has been followed by upgrading to motorway status. The A1 has been upgraded along its whole length for at least 90 years without there ever being an overall plan for its route. Another case is the A303 which was designated as the trunk route to the South-West from London in preference to the A30. Following this a process of almost continual upgrading has been undertaken for over six decades. Initially this comprised the bypassing of bottlenecks in town or village centres such as Andover, Amesbury and Wincanton. This was followed by improvement of some sections of the connecting routes and as time progressed the 'missing' sections were also upgraded, until eventually only the most difficult stretches like the Blackdown Hills or Stonehenge World Heritage Site remained. These have either been avoided in the former case, or so far proved unresolvable in the latter (Dave Batchelor, pers comm).

Opportunities

Despite the above road construction has also led to opportunities.

Excavation

Prior to the motorway committee era most archaeological projects on road schemes were on previously known monuments. Road construction presented an opportunity to examine these sites, albeit usually under some pressure such as at Bockerly Dyke (above). However, even as far back as the 1930s it was recognised that for well planned projects, such as at Whitehawk Hill (above):

The damage done to the camp was more than counter-balanced by the knowledge and the specimens acquired during the excavation (Curwen 1936, 60).

Some of these projects were nationally significant, such as at Durrington Walls, Wiltshire, where the realignment of a road led to several seasons of work in the late 1960s that revealed much about the henge monument (above).

Discovery

By the 1970s archaeological responses to road schemes were becoming more proactive with the development of a whole landscape approach that included background research and field survey, as well as excavation, followed by monitoring of the actual construction works. Prospection along the route was a new technique developed in response to motorway schemes, perhaps the single clearest contribution of road-related archaeology to the discipline. Its application led to the discovery of large numbers of previously unknown sites on the line of proposed motorway routes. Monitoring of the actual works themselves also revealed more archaeological features and sometimes whole sites that had previously been missed.

Leaving aside the issue of the quality of excavation possible in advance of road schemes, which has in any case improved beyond measure since the 1960s, numerous now well-

known sites have been discovered on road schemes. Perhaps the most famous recent example is that of the 'Prittlewell Prince' discovered on the outskirts of Southend, Essex in 2003. This has been described as 'the most important Anglo-Saxon burial since Sutton Hoo', and comprised a burial chamber with numerous high status finds such as weapons including a sword, a gold buckle, gold foil crosses, coins, wooden and glass vessels, and a bronze bowl, all in remarkable condition (CA 2004, 430-4).

Preservation

Despite the number of sites discovered and excavated few sites appear to have been preserved as a direct result of a road scheme. Very few cases of roads being re-routed to avoid sites, or of roads being redesigned to preserve sites in situ, have been identified. An example of the former is the Romano-British settlement on the A41(M), in Hertfordshire in the mid-1970s. Examples of the latter include another Romano-British settlement on the A10 Puckeridge Bypass, also in Hertfordshire and the Romano-British fort in Dover, Kent. In the late 1990s a local link road and an estate road were constructed so as to run above known remains of the Royal Gunpowder Factory, Waltham Abbey Essex; the former over the undesignated Lower Island Works and the latter the scheduled saltpetre refinery (Wayne Cocroft, pers comm).

Funding

Early roads archaeology was generally funded as part of wider rescue archaeology budgets but as the 'developer pays' principle developed during the 1980s increasing funds were contributed by the DoT, later through the HA. During the later 1980s the DTp contributed £100,000 annually to English Heritage rescue budgets which was increased to £500,000 in 1990. In 1992 the DTp took on direct responsibility for evaluations on its road schemes and for all archaeology in 1993, when the total spent was £2.2 million (above). In 1994, the HA took over responsibility for the main road network and it has been reported that in 1996 the HA was the largest single funder of archaeology in England (Morris 1996).

Conclusions

The practice and professionalization of archaeology has developed considerably since the beginnings of the motorway era:

Forty years ago, as our M5 experience began, there were no PCs or laptops, no mobile phones, no faxes, no internet, no e-mail, no digital photography, no GPS, no rapid geofizz, no availability of national AP, no developer funding, no macho luminous jackets and no hard-hats, indeed an absence of much that is archaeologically now taken for granted. I had forgotten the extent to which archaeology in 1969 was of a different world from that of 2009 (Fowler 2009, 47).

Whilst most of these changes cannot solely be attributed to roads archaeology it is probable that the motorway committees had a more fundamental impact. They developed the techniques of prospection along proposed motorway routes that revealed a previously unsuspected density of monuments along large transects of varied countryside, frequently previously thought to be archaeologically empty. This was hugely significant and had a profound impact on British archaeology. The phased approach itself, raised public awareness, the integration of archaeology in the planning system, the shift to developer funding and the rise of the professional archaeologist can all be directly rooted in this period. The contribution of urban archaeology should not be down played but this had its roots in towns with known Romano-British or medieval cores. These were known to be under threat whereas prior to the 1970s no-one knew that most of the rural sites threatened by roads existed.

In recent years the relationship between archaeology and roads has come full circle. The M1 and its structures have become historic monuments in their own right and were the subject of a photographic recording project when the motorway was widened between junctions 6a and 10 (Bradley & Walter 2007, 13).

Finally, in the more affluent world we may have reached 'peak car'. Levels of car sales, car ownership and car travel all appear to have begun to decline and this appears to be a long-term trend rather than a 'blip' caused by the global recession. In terms of distance travelled by car, Japan peaked in the 1990s and the United States, United Kingdom, Germany, France, Australia and Sweden all peaked in 2004. In the UK, per-capita car travel is down 5% since this peak and it may be that reduced pressure to build and improve roads may follow (Pearce 2011, 26). In the poorer world car ownership is still rising; the billionth car was recently sold, probably in China (*The Guardian* 24/8/2011, 25).

Recommendations for further work

This project has highlighted the fact that for a discipline concerned with the past archaeology has, with a few notable exceptions, so far taken little interest in its own history. The issue of the interrelationship between the evolution of archaeology as a profession and road building, and development more generally, would clearly repay further study. It is hoped that this report might form a useful foundation for that work.

REFERENCES

- Aitchison, K 2000 'Archaeology in the Fast Lane: The New Government Transport Plan', *Rescue News* **82**, 5-6
- Aitchison, K 2010 'Farewell to PPG 16', *The Archaeologist* **76**, 7
- 'Alex' 2002 'Twyford Down + 10', <http://www.schnews.org.uk/sotw/twyford-down-plus10.htm> accessed 04/11/2010
- Ashford, D E 1989 'Death of a Great Survivor: The Manpower Services Commission in the UK', *Governance* **2**, 365-83
- Baldwin, P, and Baldwin, R (eds) 2004 *The Motorway Achievement – The British Motorway System: Visualisation, Policy and Administration*. London: Thomas Telford Publishing
- BBC 25/2/2004 'War in the Dales', http://www.bbc.co.uk/insideout/extra/series-1/four_by_fours.shtml (accessed 10/08/2011)
- BBC 4/5/2007 'English Local Elections 2007', <http://news.bbc.co.uk/1/shared/vote2007/councils/html/32ub.stm> (accessed 12/7/2010)
- BBC 15/8/2007 'Q&A: England's Green Belt' <http://news.bbc.co.uk/1/hi/uk/6947435.stm> (accessed 12/05/2010)
- BBC 9/12/2008 'M32 'Like Dagger Thrust Into City'', http://news.bbc.co.uk/local/bristol/hi/people_and_places/history/newsid_7767000/7767453.stm (accessed 02/08/2011)
- BBC 30/4/2009 "'King of Bling' Battle Site Moves", <http://news.bbc.co.uk/1/hi/england/essex/8026587.stm> (accessed 12/7/2010)
- BBC 20/3/2010 'Essex Road Scheme Starts as Tree Protesters Leave Camp', <http://news.bbc.co.uk/1/hi/england/essex/8577700.stm> (accessed 12/7/2010)
- Bennett, J 1980 'Excavation and Survey on the Medieval City Wall, 1973', *Transactions of the Worcestershire Archaeological Society*, Third Series **7**, 65-85
- Bennett, P and Williams, J 1997 'Monkton', *Current Archaeology*, **151**, 258-64
- Benson, D 1972 'A Sites and Monuments Record for the Oxford Region', *Oxoniensia*, **37**, 226-37
- Bevan, B 1996 'Roads to Nowhere? Archaeology, landscape and a planning process that by-passes more than towns', *Assemblage* **1**, [<http://www.assemblage.group.shef.ac.uk/1/bevan.html>]
- Blackhall, JC 2000 *Planning Law and Practice* (2nd edn). London: Cavendish Publishing Ltd

- Boddington, R and Shoemith, R 1993 'A Bypass Too Far?', *Rescue News* **59**, 6
- Bowden, M 2001 'Mapping the Past: O.G.S Crawford and the Development of Landscape Studies', *Landscapes* **2** (2), 29-45
- Bowdler, R 1999 'Between the Wars: 1914-1940', Honer, J (ed) *London Suburbs*. London: Merrell Holberton/English Heritage, 103-30
- Bradley, A & Walter, M 2007 'The M1', *Conservation Bulletin* **56**, 13
- Bristol Evening News, 5/2/2009 'The Battle of Solsbury Hill', <http://www.thisisbristol.co.uk/news/battle-Solsbury-Hill/article-675397-detail/article.html> (accessed 12/7/2010)
- British Archaeology 2009 'Peace Site: An Archaeology of Protest at Greenham Common Air Base', *British Archaeology* **104**, <http://www.britarch.ac.uk/ba/ba104/feat3.shtml> (accessed 12/7/2010)
- British Archaeological News 1994 'Government Rethink on Roads Archaeology', *British Archaeological News* (new ser) **14**, 3
- Bryant, B 1996 *Twyford Down: Roads, Campaigning and Environmental Law*. London: E & FN Spon
- Buckland, P and Dolby, M 1972 'Doncaster', *Current Archaeology* **33**, 273-7
- Burrow, I 1985 'The History of the Sites and Monuments Record System', Burrow, I (ed) *County Archaeological Records: Progress and Potential*. Association of County Archaeological Officers
- Butcher, S & Garwood, P 1994 *Rescue Excavation: 1938-72*. Swindon: English Heritage
- Carrington, P 1994 *Chester*. London: Batsford/English Heritage
- Carver, M 1980 'The excavation of three medieval craftsmen's tenements in Sidbury, Worcester, 1976', *Transactions of the Worcestershire Archaeological Society, Third Series* **7**, 155-219
- CCC/LUAU (Cheshire County Council/Lancaster University Archaeology Unit) nd *The Road to the Ice Age: Excavations at Church Moss, Davenham, Cheshire*. Cheshire County Council/Lancaster University Archaeology Unit
- Chadwick, S E and Thompson, M W 1956 'Note on and Iron Age Habitation Site Near Battlesbury Camp, Warminster', *Wiltshire Archaeology Magazine* **56**, 262-4
- Chambers, R A 1993, 'The Archaeology of the M40 through Buckinghamshire, Northamptonshire & Oxfordshire', *Oxoniensia* **57**, 43-54

Champion, T, Shennan, S and Cuming, P 1995 *Planning for the Past, Volume 3: Decision-making and Field Methods In Archaeological Evaluation*. Southampton: University of Southampton and English Heritage

Colyer, C 1971 'Lincoln', *Current Archaeology* **26**, 67-71

Corbishley, M and Tann, G 1981 'Motorway Archaeology', *Rescue News* **25**, 3

Cracknell, S and Hingley, R 1994 'Park Farm, Barford: excavation of a prehistoric settlement site', *Birmingham & Warwickshire Archaeological Society Transactions* **98**, 1-30

Crowe, S 1960 *The Landscape of Roads*. London: The Architectural Press

CSD (The Centre for Sustainable Development, University of Cambridge) 2004 'Taming The Tarmac: The Lesson of Twyford Down', http://web.archive.org/web/20061129051942/http://www7.caret.cam.ac.uk/twyford_intro.htm accessed 05/11/2010

CA (Current Archaeology) 1967 'Welwyn', *Current Archaeology* **3**, 78

CA 1968 'Bishops Waltham', *Current Archaeology* **10**, 274-6

CA 1970a 'Gadebridge Park Roman Villa', *Current Archaeology* **18**,

CA 1970b 'Rescue Excavation and the Part-Time Archaeologist', *Current Archaeology* **19**, 205

CA 1971a 'Ascott-under-Wychwood', *Current Archaeology* **24**, 7-10

CA 1971b 'Cirencester', *Current Archaeology* **29**, 144-52

CA 1972a 'Rescue', *Current Archaeology* **30**, 171-2

CA 1972b 'Tewksbury', *Current Archaeology* **32**, 252-3

CA 1972c 'The New Archaeologists', *Current Archaeology* **33**, 253

CA 1973a 'York', *Current Archaeology* **37**, 45-52

CA 1973b 'Chelmsford', *Current Archaeology* **41**, 166-76

CA 1974 'Cirencester', *Current Archaeology* **45**, 299

CA 1974 'Red House Corbridge', *Current Archaeology* **46**, 325-9

CA 1975a 'Hacheston', *Current Archaeology* **52**, 137-8

CA 1977 'Rescue Archaeology: The Next Phase', *Current Archaeology* **58**, 341-2

- CA 1981 'Ashton', *Current Archaeology* **75**, 126
- CA 2004 'Prittlewell: Treasure of a King of Essex', *Current Archaeology* **190**, 430-6
- Curwen, E C 1936 'Excavations in Whitehawk Camp, Brighton: Third Season, 1935', *Sussex Archaeological Collections* **77**, 60-92
- Darvill, T & Fulton, A K 1998 *The Monuments at Risk Survey of England 1995, Main Report*. Bournemouth and London: Bournemouth University and English Heritage
- Darvill, T & Russell, B 2002 *Archaeology after PPG 16: Archaeological Investigations in England 1990-1999*. Bournemouth and London: Bournemouth University and English Heritage
- Davenport P, 1995 'Batheaston Bypass', *Rescue News* **65**, 4-5
- Davies, M 1971 'Rescue... The M40: Like son, like father' *Current Archaeology* **26**, 76-79
- Davies, H 2006 *From Trackways to Motorways: 5000 Years of Highway History*. Stroud: Tempus
- DCLG/DCMS/EH (Department for Communities and Local Government/Department for Culture, Media and Sport/English Heritage) 2010 *PPS5 Planning for the Historic Environment: Historic Environment Planning Practice Guide*. London: English Heritage
- DETR (Department of the Environment, Transport and the Regions) 1997 *What role for Trunk Roads in England?* (2 vols). London: HMSO
- DETR 1998 *A New Deal for Transport: Better for Everyone*. London: HMSO
- Devereux, D 1979 'Southampton', *Rescue News* **17**, 5
- DoE (Department of the Environment) 1970 *Archaeological Excavations 1969*. London HMSO
- DoE 1971 *Archaeological Excavations 1970*. London: HMSO
- DoE 1972 *Archaeological Excavations 1971*. London: HMSO
- DoE 1973 *Archaeological Excavations 1972*. London: HMSO
- DoE 1974 *Archaeological Excavations 1973*. London: HMSO
- DoE 1975 *Archaeological Excavations 1974*. London: HMSO
- DoE 1976 *Archaeological Excavations 1975*. London: HMSO

- DoE 1977 *Archaeological Excavations 1976*. London: HMSO
- DoE 1990 *Planning Policy Guidance: Archaeology and Planning (PPG 16)*. London: HMSO
- DoE 1994 *Planning Policy Guidance: Planning and the Historic Environment (PPG 15)*. London: HMSO
- Drury, P 1973 'Little Waltham', *Current Archaeology* **36** 10-13
- DTp (Department for Transport) 1990 *Trunk Roads, England: into the 1990s*. London: HMSO
- DTp 1993 *Design Manual for Roads and Bridges: Volume 11 Environmental Assessment*. London: HMSO
- DTp 1995 *Design Manual for Roads and Bridges: Volume 10 Environmental Design*. London: HMSO
- DTp 2010 'Zip of all TSGB 2010 releases, tables and charts as published on 25 November 2010 (Excel)', downloaded from <http://www2.dft.gov.uk/pgr/statistics/datatablespublications/tsgb/> accessed 3/3/2011
- Dyson, L, Shand, G and Stevens, S 2000 'Causewayed Enclosures', *Current Archaeology* **168**, 470-2
- Early, R 2008 'Road to Confrontation', <http://www.planningresource.co.uk/inDepth/ByLocation/England/799727/Road-confrontation/> accessed 19/11/2010
- Eco-Action 1996 'It's (Not Really That) Grim Up North', http://www.eco-action.org/dod/no5/region_north.htm, accessed 12/7/2010
- Eco-Action 1999 'Direct Action road camp near Newcastle. 1997. Britain's first tree sit', <http://www.eco-action.org/dt/jesmond.html>, accessed 12/7/2010
- Ellison, A & Pearson, T 1978 *The Wincanton Bypass: a study in the archaeological recording of road works*. Committee for Rescue Archaeology in Avon, Gloucestershire and Somerset, Occasional Papers No. 8
- EH (English Heritage) 1986 *Rescue Archaeology Funding: A policy statement*. London: English Heritage
- EH 1987 *Rescue Archaeology Funding in 1987/88*. London: English Heritage
- EH 1991 *Exploring Our Past*. London: English Heritage
- EH 1995 *Planning for the Past, Volume 1: A review of archaeological assessment procedures in England 1982-91*. London: English Heritage

- EH 2004 *Transport and the Historic Environment*. London: English Heritage
- EH 2007 *The Car Project*. Promotional leaflet.
- Farley, M and Leach, H 1988 'Medieval Pottery Production Areas near Rush Green, Denham, Buckinghamshire', *Records of Buckinghamshire* **30**, 53-102
- Fasham, P J 1987 A 'Banjo' Enclosure in Micheldever Wood, Hampshire (MARC3 site R27). Hampshire Field Club & Archaeological Society (Monograph 5)
- Fasham, P J 1991 'M3 Archaeology 1972-88: Reflections', Fasham & Whinney, 79-96
- Fasham, P J and Whinney, R 1985 *Roads to the Past: A summary of recent archaeological excavations near Winchester*. Trust for Wessex Archaeology, City Of Winchester
- Fasham, P J and Whinney, R J B 1991 *Archaeology & the M3: The Watching Brief, the Anglo-Saxon Settlement at Abbots Worthy & Retrospective Sections*. Winchester: Hampshire Field Club & Archaeological Society with The Trust for WA (Hampshire Field Club & Archaeological Society Monograph 7)
- Fowler, P 1971 'M4 and M5', *Current Archaeology* **25**, 50-51
- Fowler, P 1972 'M5 and Archaeology: Fourth Interim Report, 1972', *Archaeological Review* **7**, 5-11
- Fowler, P 1974 'Motorways and Archaeology', in Rahtz (ed), 113-129
- Fowler, P 1978 'Archaeology and the M5 Motorway, Gloucestershire 1969-75: A Summary and Assessment', *Transactions of the Bristol and Gloucestershire Archaeological Society* **95**, 40-6
- Fowler, P 1980 'Archaeology and the M4 and M5 Motorways, 1965-78', *The Archaeological Journal* **136**, 12-26
- Fowler, P 2009 'M5 in Memoriam', *The Archaeologist* **73**, 45-7
- Fowler, P J (ed) 1972 *Archaeology and the landscape*. London: John Baker
- Fowler, P J and Walthew, C V (eds) 1970 'Archaeology and the M5 motorway: first report, North Gloucestershire 1969', *Transactions of the Bristol & Gloucester Archaeological Society* **90**, 22-63
- Friell, G 1991 'Archaeology and the Trunk Roads Programme', *English Heritage Conservation Bulletin* **13**, 8
- Gilman, P and Newman, M (eds) 2007 *Informing the Future of the Past: Guidelines for Historic Environment Records* (2nd edn). Available at <http://www.ifp-plus.info/>, accessed

28/6/2011

Godwin Arnold, H 1982 '17-19 London Street, Reading', *Transactions of the Ancient Monuments Society* (New Series) **26**, 53-67

The Guardian 11/1/2006 'No Holds Barred'. <http://www.guardian.co.uk/society/2006/jan/11/guardiansocietysupplement5>, accessed 12/7/2010

Hall, D N and Nickerson, N 1968, 'Excavations at Irchester', *The Archaeological Journal* **124**, 65-99

Halpin, C, 1988 'The Raunds Area project: Irthlingborough', *The Work of the Central Excavation Unit 1987-88*. London: English Heritage, 5-9

Hannah, L 1994 'Crisis and Turnaround? 1973-1993', Johnson, J (ed) *20th century Britain: economic, social and cultural change*. London: Longman

Hansard, 14 November 1991 HC Deb vol 198 cc649-51W http://hansard.millbanksystems.com/written_answers/1991/nov/14/trunk-roads#S6CV0198P0_19911114_CWA_219, accessed 26/11/2010

Harris, E C and Ottaway, P J 1976 'A Recording Experiment on a Rescue Site', *Rescue News* **12**, 6-7

Harris, J 1985 'The A1(M) Through Hatfield', *Hertfordshire's Past* **18**, 40-1

Harwood, E 1999 'The Road to Subtopia: 1940 to the present', Honer, J (ed) *London Suburbs*. London: Merrell Holberton Publishers Ltd/English Heritage, 130-61

Hauser, K 2008 *Bloody Britain: OGS Crawford and the Archaeology of Modern Life*. London: Granta Books

Hawkes, C F C and Hull, M R 1947 *Camulodunum: First report on the excavations at Colchester 1930-1939*. Oxford: Society of Antiquaries

Hertfordshire Excavation Group 1972 'Puckeridge Bypass excavation success', *Rescue News* **1**, 4

HELM (Historic Environment Local Management) nd 'Historic Environment Records', <http://www.helm.org.uk/server/show/nav.19607>, accessed 27/06/2011

Helmore, R 1976 'Manpower Services Commission — a second year of achievement', *Education and Training* **18**, 105-6

HA (Highways Agency) 1995 *Trunk Roads and Archaeology, 1994-1995*. London: Highways Agency

- HA 1999 *Roads to the past: Trunk roads and archaeology – 1999 report*. Highways Agency
- HA 2007 *Assessing the effect of road schemes on historic landscape character*. Highways Agency/English Heritage
- HA 2010 'M1 Jct 6a to 10 Widening', <http://www.highways.gov.uk/roads/projects/4478.aspx>, accessed 7/7/2010
- Hinchcliffe J (ed) 1986 *Preservation by Record: The Work of the Central Excavation Unit 1975-85*. London: Historic Buildings and Monuments Commission for England
- Hinchcliffe, J (ed) 1987 *The Work of the Central Excavation Unit 1986-7*. London: English Heritage
- Hirst, S 1980 'Excavations Behind the City Wall on Talbot Street, 1975', *Transactions of the Worcestershire Archaeological Society, Third Series* **7**, 87-106
- Hodder, I 1982 *The Archaeology of the M11, 2. Wendens Ambo: the excavation of an Iron Age & Romano-British settlement*. London: Passmore Edwards Museum
- Horsler, V 1993 'Rescue Archaeology 1938-72', *English Heritage Conservation Bulletin* **20**, 14
- Humphreys, J, Ryland, JW, Barnard, AB, Wellstood, FC and Barnett, TG 1923 'An Anglo-Saxon Cemetery at Bideford-on-Avon, Warwickshire', *Archaeologia* **73**, 89-116
- IFA (Institute for Field Archaeologists) 1997 *Institute for Field Archaeologists: Yearbook and Directory of Members 1997*. Manchester: IFA
- James, P 1983 'Historic Buildings and Archaeological Record for Greater London', *London Archaeologist* **4**, 364
- Jessup, R F 1928 'A Romano-British Settlement at Springhead, Kent', *Antiquaries Journal* **8**, 337-343
- Knight, J K 1968 'Excavations at the Roman Town of Irchester 1962-3', *The Archaeological Journal* **124**, 100-128
- Kunzlik, P 1996 'The Legal Battle: 'An Astonishing Intervention'', Bryant, 225-95
- Lawson, A J (for IFA Contract Archaeology Committee) 1993 'The Assessment of Trunk Road Schemes', *The Field Archaeologist* **18**, 351-5
- LCL (Leeds Construction Link) nd 'Building Leeds: The A58(M)/A64(M) Leeds Inner Ring Road', <http://www.leedsconstructionlink.co.uk/buildingleedsa64l.htm>, accessed 02/08/2011

- Lilley, J 1994 'North Bridge, Doncaster', *Rescue News* **63**, 8
- Lock, M, Grove, D and King, G 1952 *Bedford by the River*. London: John Murray
- Longley, D and Needham, S 1979 'Egham: A Late Bronze Age Settlement and Waterfront', *Current Archaeology* **68**, 262-8
- Lyle, M 1994 *Canterbury*. London: Batsford/English Heritage
- Macpherson-Grant, N 1981 'Archaeological Work along the A2: 1966-74. Part I: The Late Bronze & Early Iron Age sites', *Archaeologia Cantia* **96**, 133-83
- MAT (the Motorway Archive Trust) nd <http://www.ukmotorwayarchive.org/>, accessed 4/12/2010
- McCoubrey, W J 2009 *The Motorway Achievement: Building the Network*. London: Thomas Telford Ltd
- McWhirr, A 1974 'Cirencester', *Current Archaeology* **42**, 216-219
- Mellor, J 1993 'Roads to Ruin?', *Rescue News* **60**, 1
- Merriman, P 2007 *Driving Spaces: A Cultural-Historical Geography of England's M1 Motorway*. Oxford: Blackwell
- Miles, H 1977 'The A38 Roadworks 1970-3', *Devon Archaeological Society Proceedings* **35**, 43-52
- Miller, T E and Miller, M 1982 'The M11 Western Bypass: 3 sites near Cambridge, 3, Edmundsoles, Haslingfield', *Proceedings of the Cambridge Antiquarian Society* **71**, 41-72
- Minnis, J 2007 'The Car: An Agent Of Transformation', *English Heritage Conservation Bulletin* **56**, 11-13
- Minnis, J nd 'The Car Project: Letchworth', Internal typescript document: English Heritage
- Minnis, J and Morrison, K 2007 'The Car Project: Project Design'. Internal typescript document: English Heritage
- Minnis, J and Morrison, K 2010, 'Creating Exurbia: An Infrastructure for "The Great Car Economy"', *English Heritage Conservation Bulletin* **65**, 19-21
- Monbiot, G 1997 'Multi-issue Politics', <http://www.monbiot.com/archives/1997/02/21/multi-issue-politics/> accessed 04/11/2010. Originally published in the *Times Literary Supplement* 21st February 1997
- Moran, J 2009 *On Roads: A Hidden History*. London: Profile Books

Morris, R 1996 'Teaching road builders value for money', *British Archaeology*, **15**, <http://www.britarch.ac.uk/ba/ba15/BA15COMM.HTML> (accessed 3/8/2011)

Morriss, R K 2005 *Roads: Archaeology and Architecture*. Stroud: Tempus

Moss-Eccardt, J 1988 'Archaeological Investigations in the Letchworth Area 1958-1974', *Proceedings of the Cambridgeshire Antiquarian Society*, **77**, 35-103

Mouchel (L G Mouchel & Partners Ltd) 1990 'A249 Trunk Road. M2 to Bobbing Improvement'. Unpublished typescript supplied by Highways Agency.

MoW (Ministry of Works) 1962 *Excavations Annual Report 1961*. London: HMSO

MPBW (Ministry of Public Buildings and Works) 1963 *Excavations Annual Report 1962*. London: HMSO

MPBW 1964 *Excavations Annual Report 1963*. London: HMSO

MPBW 1965 *Excavations Annual Report 1964*. London: HMSO

MPBW 1966 *Excavations Annual Report 1965*. London: HMSO

MPBW 1968 *Excavations Annual Report 1967*. London: HMSO

MPBW 1969 *Archaeological Excavations 1968*. London: HMSO

MPBW 1970 *Archaeological Excavations 1969*. London: HMSO

Natural England nd 'St Catherine's Hill', http://www.english-nature.org.uk/special/sss/ssi_details.cfm?ssi_id=1003267, accessed 11/11/2010

Needham, S P and O'Connell, M 1986 *Pettors Sports Field, Egham: Excavation of a Late Bronze Age/Early Iron Age Site*. Guildford: Surrey Archaeological Society (Research of the Surrey Archaeological Society; 10)

Nicholson, R A 1992, *Fish Remains from Excavations at The Shires: Little Lane (A39) & St Peter's Lane (A40)*, Leicester, London: EH (Ancient Monuments Laboratory Reports; 56/92)

NPA (Nicholas Pearson Associates) and WA (Wessex Archaeology) 2006 *Review of Archaeological Input into EIA for Trunk Road Schemes*. Internet: Highways Agency/ Department for Transport

Olivier, ACH 1994 *Archaeology Review 1993-94*. London: English Heritage

Olivier, ACH 1995 *Archaeology Review 1994-95*. London: English Heritage, http://www.eng-h.gov.uk/ArchRev/rev94_5/ (accessed 3/8/2011)

Olivier, A C H 1996 *Archaeology Review 1995-96*. London: English Heritage, http://www.eng-h.gov.uk/ArchRev/rev95_6/ (accessed 3/8/2011)

Olivier, A C H 1997 *Archaeology Review 1996-97*. London: English Heritage, http://www.eng-h.gov.uk/ArchRev/rev96_7/ (accessed 3/8/2011)

Olivier, A C H 1998 *Archaeology Review 1997-98*. London: English Heritage, http://www.eng-h.gov.uk/ArchRev/rev97_8/ (accessed 3/8/2011)

Orna, B 1975 'A Native Town at Berkhamsted', *Current Archaeology*, **52**, 139

OS (Ordnance Survey) 1906 *Warwickshire* 1:2500 2nd edition, sheet 21.12

OS 1937 *Warwickshire* 1:2500 4th edition, sheet 21.12

Oswald, A and Pearson, T 1999 'Force Crag Mine, Cumbria', English Heritage Archaeological Survey & Investigation report series AI/1/1999

Ottaway, P 1992 *Archaeology in British Towns*. London: Routledge

PDNP (Peak District National Park) 31/10/2005 '4x4s & Trail Bikes - Code of Respect Agreed for Stanage', <http://www.peakdistrict.gov.uk/news/news-archive/4x4s-and-trail-bikes-code-of-respect-agreed-for-stanage> (accessed 5/9/2011)

Pearce, F 2011 'The End of the Road', *New Scientist* 13/08/2011, 26-7

Penn, W S 1965 'Springhead – map of discoveries', *Archaeologia Cantiana* **80**, 107-117

Penrose, S 2007 *Images of Change: An Archaeology of England's Contemporary Landscape*. Swindon: English Heritage

Perkin, H 1976 *The Age of the Automobile*. London: Quartet Books

Philp, B 1974 'Kent, Dover and the CIB Rescue Corps', in Rahtz (ed), 73-8

'PHL' 1932 'The Quest for the Roman Amphitheatre at Chester', *Journal of the Chester and North Wales Archaeological Society* **29**, 66-68

Plouviez, J 1989 'Rescue archaeology: is there a long term strategy?', *Rescue News* **47**, 8

Porritt, J 1996 'The Environmentalist's Conclusions', in Bryant, 297-309

Pullinger, J and Young, C J 1982 'The M11 Western Bypass: 3 Sites near Cambridge, 1, Obelisk Kilns, Harston', *Proceedings of the Cambridge Antiquarian Society* **71**, 1-24

Pullinger, J, Heal, V and Legge, A J 1982 'The M11 western bypass: 3 sites near Cambridge, 2, Lingey Fen, Haslingfield', *Proceedings of the Cambridge Antiquarian Society* **71**, 25-40

- Rahtz, P 1963 'An Excavation on Bokerley Dyke, 1958', *Archaeological Journal* **118**, 65-99
- Rahtz, P 1968 'Hereford', *Current Archaeology* **9**, 242-246
- Rahtz, P (ed) 1974, *Rescue Archaeology*. Harmondsworth: Penguin (Pelican)
- RCHME (Royal Commission on Historical Monuments, England) 1981 Royal Commission on Historical Monuments (England). Leaflet
- RCHME 1994 *The Royal Gunpowder Factory, Waltham Abbey, Essex: An RCHME Survey, 1993*. London: RCHME
- RN (Rescue News) 1972a '£125,000 more for archaeology', *Rescue News* **2**, 8
- RN 1972b 'Winchester', *Rescue News* **2**, 8
- RN 1972c 'Rescue Roundup: Newmarket By-pass', *Rescue News* **2**, 14
- RN 1973 'Rescue on M40', *Rescue News* **3**, 9
- RN 1978 'Read All About It', *Rescue News* **16**, 3
- Richardson, K 1972 *Twentieth-century Coventry*. Coventry: The City of Coventry
- Rook, A 1978 'The Lockleys Bath-house', *Current Archaeology* **60**, 27-9
- Rook, A 1987 'The Roman Villa Site at Dicket Mead, Lockleys, Welwyn', *Hertfordshire Archaeology* **9**, 79-175
- Scarman, L G 1981 *The Scarman report: the Brixton disorders, 10-12 April 1981: report of an inquiry*. Harmondsworth: Penguin.
- Schofield, J 2007 'M4, A34: Journeys Back to Greenham', Penrose 2007
- Schofield, J 2009 *Aftermath: Readings in the archaeology of modern conflict*. New York: Springer
- Sheldon, H 1986 'None for the Road?', *Rescue News* **41**, 1
- Smith, C 2010, 'Ring Roads', *English Heritage Conservation Bulletin* **65**, 18-19
- Smith, R 1981 'Hibaldstow', *Current Archaeology* **77**, 168-71
- SPAB (Society for the Preservation of Ancient Buildings) 1914 'Letter from Coventry City Council to SPAB, 17/9/1914' (Coventry file, SPAB Archive)
- SPAB (Society for the Preservation of Ancient Buildings) 1935 'Letter from Coventry City

- Council to SPAB, 12/4/1935' (Coventry file, SPAB Archive)
- Sparey-Green, C 1995 'Which Side of the Fence? The Dilemma of Archaeology & Development', *Rescue News* **67**, 3, 6
- Spoerry, P 1992 'The Structure and Funding of British Archaeology: The RESCUE Questionnaire 1990-91', *Rescue News* **56**, 2
- Stell, C 1986 'Risley Chapel, Lancashire', *Transactions of the Ancient Monuments Society (new series)* **30**, 131-8
- Sutton, R 1996 *Motor mania: a hundred years of motoring*. London, Collins and Brown
- Thompson, S 2010 *Unjustifiable Risk? The Story of British Rock Climbing*. Milnthorpe, Cicerone
- Thompson, F H 1976 (1975) 'The Excavation of the Roman Amphitheatre at Chester', *Archaeologia* **105**, 127-239
- Thorold, P 2003 *The Motoring Age: The Automobile and Britain 1896-1939*. London: Profile Books Ltd
- Thrift, N 1990 'Transport and Communication 1730-1914', in Dodgshon, R A and Butlin, R A (eds), *An Historical Geography of England and Wales*, 2nd edn. London: Academic Press, 453-86
- The Times 24/5/1958, 'Archaeology "Rescue Operations"'
- The Times 31/7/1972 'Cash Shortage Halts Projects to Save Britain's Historic Sites'
- The Times 14/7/2008 Obituary: 'Frank Blackmore: traffic engineer and inventor of the mini-roundabout'
- UCL (University College London) 1991 'Iron Age Gold', *UCL Field Archaeology Unit News* **1**, 3
- VCH 1932, *The Victoria History of the County of Kent*, vol III. Reprinted 1974, London: University of London, Institute of Historical Research.
- Visit Winchester nd <http://www.visitwinchester.co.uk/site/about-winchester/brief-history> accessed 05/08/2010
- Wainwright, G J 1967 'Durrington Walls', *Current Archaeology* **5**, 120-2
- Wainwright, G J 1989 *Archaeology Review 1988-89*. London: English Heritage
- Wainwright, G J 1990 *Archaeology Review 1989-90*. London: English Heritage

- Wainwright, G J 1991 *Archaeology Review 1990-91*. London: English Heritage
- Wainwright, G J 1992 *Archaeology Review 1991-92*. London: English Heritage
- Wainwright, G J 1993 *Archaeology Review 1992-93*. London: English Heritage
- Wainwright, G J and Longworth, I H 1971 'Durrington Walls: Excavations 1966-1968', *Reports of the Research Committee of the Society of Antiquaries of London* **29**
- Walker, K E and Farwell, D E 2000 *Twyford Down, Hampshire: Archaeological Investigations of the M3 Motorway from Bar End to Compton, 1990-93*. Hampshire Field Club, Monograph 9
- Walsh, D 1969 *Report of the Committee of Enquiry into the Arrangements for the Protection of Field Monuments (1966-8)*. London: HMSO
- Weddell, P J 1990 'Archaeological Recording in the Medieval Borough of Newport, Barnstaple in 1983', *Devon Archaeological Society Proceedings* **48**, 111-22
- Wells, C 1967 'A Leper Cemetery at South Acre, Norfolk', *Medieval Archaeology* **11**, 242-8
- Wilkinson, T W 1934 *From Track to By-pass: A History of the English Road*. np
- Williams, W J 1929 'Roman Amphitheatre in Ursuline Convent School Grounds', *Journal of the Chester and North Wales Archaeological Society* **28**, 218-9 [author only given as 'W J W' identity inferred from 'PHL' 1932]
- Wills, J 1980 'Excavations and Salvage Recordings at Friar's Gate (Union Street, 1976', *Transactions of the Worcestershire Archaeological Society, Third Series* **7**, 107-111
- Wilmott, A 1987, 'Pontefract', *Current Archaeology* **106**, 340-4
- Wilson, P 1999 'Catterick', *Current Archaeology* **166**, 379-386
- Woods, H 1985 'Kent Motorway Archaeology – The M25 & Polhill', *Kent Archaeological Review* **79**, 201-2
- Yeadon, H L 2005 *The Motorway Achievement – Building the Network: The North West of England*. Chichester: Phillimore

APPENDICES

Appendix I - References to road-related archaeological projects

The following references were identified during the initial literature survey and supplemented by additional references identified during the course of the project. They are sorted into order of fieldwork date.

Table i - Identified archaeological projects

Fwk date	Fwk road	County	Scheme type	Ref author (org)	Ref date	Ref title	Ref details
1922	Bideford-on-Avon	Warks	New road	Humphreys, J, Ryland, JW, Barnard, AB, Wellstood, FC and Barnett, TG	1923	'An Anglo-Saxon Cemetery at Bideford-on-Avon, Warwickshire'	Archaeologia, 73, 89-116
1935	Whitehawk Hill Road, Brighton	E Sussex	Suburban development	Curwen, E C	1936	Excavations in Whitehawk Camp, Brighton: Third Season, 1935	Sussex Archaeological Collections, 77, 60-92
1936	Stotts Road? Newcastle, Wallsend	Tyne & Wear	Urban: widening	G Simpson	1975	The moving milecastle: or how Turret 0B came to be called Milecastle 1	Archaeologia Aelia (5th Ser) 3, 105-15
1950s /60s	A2 Springhead	Kent	Widening	Anon (OAU)	2000	Springhead Roman Cemetery	CA 168
1950s ?	M20 Maidstone Bypass,	Kent	New motorway	Anon (OAU)	2000	Thurnham Roman Villa	CA 168
1956				Chadwick, SE & Thompson, MW	1956	Note on and Iron Age Habitation Site Near Battlesbury Camp, Warminster	Wiltshire Archaeology Magazine 56, 262-4
1958	A354 Bokerley Dyke	Dorset	Improvement	P Rahtz	1963	'An Excavation on Bokerley Dyke, 1958'	Archaeological Journal, 118, 65-99
1958-59	A1 Catterick Bypass	N Yorks	New bypass	P Wilson (Local volunteers)	1999	Catterick	CA 166
1959-60	A30 Egham	Surrey	New bridge	D Longley, Stuart Needham	1979	Egham: A Late Bronze Age Settlement & Waterfront	CA 68, 262-7
1960	A1 Lockleys	Herts	Widening	A Rook (volunteers)	1978	The Lockleys bath-house	CA 60, 27-9
1960s	Hereford Inner relief road	Herefs	Urban: new road	R Boddington, R Shoemith	1993	A Bypass Too Far?	RN 59, 6
1962-63	A45 Irchester	Northants	Widening	J Knight (IAM? MPBW)	1968	Excavations at the Roman Town of Irchester, 1962-3	Archaeological Journal, 124, 100-128

Fwk date	Fwk road	County	Scheme type	Ref author (org)	Ref date	Ref title	Ref details
1962-63	A45 Irchester	Northants	Widening	D N Hall, N Nickerson (IAM?)	1968	Excavations at Irchester, 1962-3	Archaeological Journal, 124, 65-99
1963	M4	Berks	New motorway	F Healy	1994	The excavation of a ring-ditch at Englefield by J Wymer & P Ashbee, 1963	The Berkshire Archaeological Journal, 74-93, 9-25
1964-69	Gade-bridge	Herts	Urban: new road	Anon (IAM, MPBW)	1970	Gadebridge Park Roman Villa	CA 18
1965	South Shields	S Tynes	New road (not built)	Anon	1969	South Shields	CA 15, 110-2
1965	M4	Wilts	New motorway	P J Fowler	1971	M4 & M5	CA 25, 50-51
1965-69	M4	Wilts	New motorway	P J Fowler (RCHME)	1971	M4 & M5	CA 25
1965-70	B4437	Oxon	Improvement: straightening	D Benson (Oxford City & County Museum)	1971	Ascott-under-Wychwood	CA 24
1965-69	M4 M5	Gloucs Somerset	New motorway	P J Fowler	1969	M5, M4 & archaeology	Council for British Archaeology: Group 12 (Wessex) & Group 13 (S W): Archaeological Review, 4, 13-20
1965-78	M4 M5	Gloucs Somerset	New motorway	P J Fowler	1980	Archaeology & the M4 & M5 motorways, 1965-78	The Archaeological Journal, 136, 12-26
1966?	?	Norfolk	Widening	Calvin Wells	1967	A leper cemetery at S Acre, Norfolk	Medieval Archaeology, 11, 242-8
1966-67	A345 Durrington Walls	Wilts	Improvement	Anon (IAM? MPBW)	1967	Notes & News: Excavations	CA 4, 82
1966-67	A345 Durrington Walls	Wilts	Improvement	G Wainwright (IAM? MPBW)	1967	Durrington Walls	CA 5, 120-2
1966-71	General	General	Overview	P J Fowler	1971	Patterns of archaeology, archaeologists - or destruction?	Archaeological Review, 5, 3-4
1966-74	A2	Kent	Improvement: dualling	N Macpherson-Grant	1981	Archaeological work along the A2: 1966-74. Part 1: the Late Bronze & Early Iron Age sites	Archaeologia Cantia, 96, 133-83s
1966-68	A345 Durrington Walls	Wilts	Improvement: straightening	G J Wainwright; I H Longworth	1971	Durrington Walls: excavations 1966-1968	Reports Of The Research Committee Of The Society Of Antiquaries Of London, 29

Fwk date	Fwk road	County	Scheme type	Ref author (org)	Ref date	Ref title	Ref details
1967	A140 A143 Scole Bypass	Norfolk, Suffolk	New road	A Tester (Workers Education Association)	1990	Scole	CA 140
1967	Welwyn	Herts	New road		1967	Welwyn	CA 3, 78
1967?	A429 Fosse Way	Gloucs	Improvement: widening	H E O'Neil	1968	Roman settlement on the Fosse Way at Bourton Bridge, Bourton-on-the-Water, Gloucestershire	Transactions Of The Bristol & Gloucestershire Archaeological Society, 87, 29-55
1967-68	Hereford Inner Ring Road	Herefs	New inner ring road	P Rahtz (Hereford City Excavation Committee)	1968	Hereford	CA 9, 242-6
1968	A333 Bishop's Waltham	Hants	Improvement	K Barton, E Lewis (Portsmouth City Museum)	1968	Bishop's Waltham	CA 10
1968-70	Chelmsford Inner Relief Road	Essex	Urban: new road	R Dunnett, P Drury (Chelmsford Excavation Committee)	1973	Chelmsford	CA 41, 166-176
1968-73	A10 Braughing Bypass	Herts	New bypass	C Partridge	1977	Excavations & fieldwork at Braughing, 1968-73	Hertfordshire Archaeology, 5, 22-108
1969	M5	Gloucs	New motorway	L F J Walrond	1995	Mystery of the missing M5 jaw	Glevensis, 28, 12
1969	M5	Somerset	New motorway	H S Green	1973	Archaeology & the M5 motorway: 5th report - the excavation of a round cairn on Court Hill, Tickenham, N Somerset	Proceedings Of The Somersetshire Archaeological & Natural History Society, 117, 33-44
1969	M5	Gloucs Somerset	New motorway	P J Fowler; C V Walthew	1970	Archaeology & the M5 motorway: first report, N Gloucestershire	Transactions Of The Bristol & Gloucestershire Archaeological Society, 90, 22-63
1969?	M4 M5	Gloucs Somerset	New motorway	P J Fowler; C V Walthew	1973	M5, M4 & archaeology: second interim report	Archaeological Review, 5, 5-10
1969+	M4	Wilts	New motorway	P J Fowler	1971	M4 & M5	CA 25
1969-70	M5	Gloucs	New motorway	P J Fowler; J Bennett	1974	Archaeology & the M5 motorway. Second report: central Gloucestershire 1969-70	Transactions Of The Bristol & Gloucestershire Archaeological Society, 92, 21-81

Fwk date	Fwk road	County	Scheme type	Ref author (org)	Ref date	Ref title	Ref details
1969-71	M4	Avon, Berks Wilts	New motorway	P J Fowler; B Walters	1981	Archaeology & the M4 Motorway 1969-71: Tormarton, County of Avon, to Ermin Street, Berkshire	The Wiltshire Archaeological & Natural History Magazine, 74, 69-132
1969-71	M5	Gloucs, Somerset	New motorway	P J Fowler (M5 Research Committee)	1971	M4 & M5	CA 25
1969-71	M5	Gloucs, Somerset	New motorway	P J Fowler (M5 Research Committee)	1972	Field Archaeology on the M5 Motorway 1969-71: some provisional results, analyses & implications	Elizabeth Fowler (Ed), Field Survey In British Archaeology: Papers Given At A CBA Conference 1971. CBA
1969-71	M5	Gloucs Somerset	New motorway	P Fowler	1972		E Fowler (ed) Field Survey In British Archaeology. London: CBA, 28-38
1969-75	M5	Gloucs	New motorway	P J Fowler	1978	Archaeology & the M5 motorway, Gloucestershire 1969-75: a summary & assessment	Transactions Of The Bristol & Gloucestershire Archaeological Society, 95, 40-6
1970	A39 Nether Stowey Bypass	Somerset	New bypass	R Coleman-Smith; T Pearson	1971?	Excavations at Donyatt & Nether Stowey, Somerset: 1970 interim report	Donyatt Research Group
1970	M5	Somerset	New motorway	E L Morris	1988	The Iron Age occupation at Dibble's Farm, Christon	Proceedings Of The Somersetshire Archaeological & Natural History Society, 132, 23-81
1970	A20 Dover	Kent	Urban: new road	Brl Philp (Council for Kentish Archaeology)	1971	Dover	CA 25, 52-55
1970?	M5	Somerset	New motorway	P J Fowler	1971	M5 & archaeology	Archaeological Review, 6, 5-10
1970+	M40	Oxon	New motorway	Anon (M40 Archaeological Rescue Group)	1973	Rescue on M40	RN 3, 9
1970-71	A130? Little Waltham Bypass	Essex	New bypass	P Drury	1973	Little Waltham	CA 36, 10-13
1970-71	A20? Dover York Street Bypass	Kent	New bypass Car park	Anon (Kent Archaeological Rescue Unit/ Corps???)	1973	Dover: The battle of the bypass	CA 38, 81-88

Fwk date	Fwk road	County	Scheme type	Ref author (org)	Ref date	Ref title	Ref details
1970-71?	M40	Oxon	New motorway	Anon	1971-2	Newsletters 1 - 7	M40 Archaeological Research Group
1970-73	A38	Devon	New trunk road	H Miles	1977	The A38 Roadworks 1970-3	Devon Archaeological Society Proceedings, 35, 43-52
1970-75	M11	Essex	New motorway	I G Robertson	1975	The archaeology of the M11 motorway in Essex, 1970-75	Essex Journal, 10, 68-91
1970s	General	General	New motorway	P Fasham & R Hanworth	1978	H C Bowen; P J Fowler Early land allotment in the British Isles: a survey of recent work	Oxford: BAR (BAR British Series; 48), 175-7
1971	B3180	Devon	Improvement: widening	H Miles	1975	Excavations at Woodbury Castle, E Devon, 1971	Devon Archaeological Society Proceedings, 33, 183-208
1971	M40	Oxon	New motorway	M Davies (M40 Archaeological Rescue Group)	1971	Rescue... The M40: Like son, like father	CA 26, 76-
1971	M40	Oxon	New motorway	Anon (M40 Archaeological Rescue Group)	1972	M40	CA 35, 334-336
1971	Cirencester Beeches Road	Gloucs	Urban: new road	Anon	1971?	note	CA 28?, 133
1971	Cirencester Beeches Road	Gloucs	Urban: new road	Anon	1971	Cirencester	CA 29, 144-152
1971	A20 Dover	Kent	New road, car park	Anon (Council for Kentish Archaeology)	1971?	Roman Dover	CA 28?, 133
1971?	A27	Hants	Improvement: widening	R H Cake; E Lewis; J Noon	1972	Paulsgrove House & 17th century house plans in Hampshire & W Sussex	Post-Medieval Archaeology, 6, 160-74
1971-72	A10 Puckeridge Bypass	Herts	New bypass	Anon (Hertfordshire Excavation Group)	1972	Puckeridge Bypass excavation success	RN 1, 4
1971-73	M27	Hants	New motorway	Anon (S Hampshire Archaeological Rescue Group)	1973	Rescue Round-up: SHARG	RN 3, 11
1971-73	M5 Blackbrook to Chelston	Somerset	New motorway	Anon (Taunton M5 Committee)	1973	"motorway memo"	RN 3, 11

Fwk date	Fwk road	County	Scheme type	Ref author (org)	Ref date	Ref title	Ref details
1971-73	Beeches Road Cirencester	Gloucs	Urban: new road	A McWhirr	1974	Cirencester	CA 42, 216-219
1971-73	Cirencester Admiral's Walk	Gloucs	Urban: new road	A McWhirr?	1974?	Cirencester	CA 44?-46?, 299
1971-75	M25	Surrey	New motorway	Bernard Johnson	1975	Archaeology & the M25, 1971-1975	Guildford: Surrey Archaeological Society
1971-75	A1(M) Lockleys	Herts	New motorway	A Rook (Lockleys Archaeological Society & Trust)	1978	The Lockleys bath-house	CA 60, 27-9
1972	B1110?	Norfolk	Improvement	R Carr	1973	First interim report of excavations at Spong Hill, N Elmham (1972)	Norfolk Archaeology, 35, 494-8
1972	M5	Somerset	New motorway	P J Fowler; J Bennett	1972	M5 & archaeology: fourth interim report	Council for British Archaeology: Group 12 (Wessex) & Group 13 (S W): Archaeological Review, 7, 5-11
1972	M40	Oxon	New motorway	D A Hinton; Trevor Rowley	1973	Excavations on the route of the M40	Oxoniensia, 38, 1-183
1972	M27	Hants	New motorway	M F Hughes; A M ApSimon	1978	A mesolithic flint working site on the S coast motorway (M27) near fort Wallington, Fareham, Hampshire	Proceedings Of The Hampshire Field Club & Archaeological Society, 34 23-35
1972	M27	Hants	New motorway	M Hughes	1974	M27 - S Coast motorway - rescue excavations of an Iron Age site at Wallington Military Road, Fareham	Rescue Archaeology In Hampshire, 2, 29-96
1972	M11 Harlow	Essex	New motorway	Anon (M11 Archaeological Committee)	1972	Rescue Round-up: Harlow	RN 2, 14
1972	York Inner Ring Road	N Yorks	Urban: new road	Anon (YAT)	1973	York	CA 37, 45-52
1972	Doncaster Inner ring	S Yorks	Urban: new road	Anon	1972	Doncaster	CA 33, 273-278
1972?	A3(M)	Hants	Improvement: to motorway	G Soffe	1973	The A3(M) motorway: an archaeological & historical survey	S Hants Archaeological Rescue Group
1972?	A130 Little Waltham Bypass	Essex	New bypass	P Drury	1973	Little Waltham	CA 4, 10-13

Fwk date	Fwk road	County	Scheme type	Ref author (org)	Ref date	Ref title	Ref details
1972?	M?	Cheshire	New motorway	E M Hughes	1973	Roman roads & motorways	Lymm Local History Society Newsletter, 59, 6-8
1972?	M69	Leics	New motorway		1973	Progress report I	The M69 (Leicestershire) Archaeology Group
1972?	M3	Hants	New motorway	M Biddle; V W Emery	1973	The M3 Extension: an archaeological survey	Winchester: M3 Archaeological Rescue Committee
1972+	Winchester Traffic Plan, Stage I	Hants	Urban: new road	Anon (Winchester Archaeological Rescue Group)	1972	Winchester	RN 2, 8
1972-73	A380	Devon	New bypass	L Gallant	1977	Archaeology along the route of the Newton Abbot & Kingsteignton Bypass	Devon Archaeological Society Proceedings, 35, 53-?
1972-74	A10 Hoddesden Ware Bypass	Herts	New bypass	R J Kiln	1977	Excavations on the line of the Hoddesden/Ware bypass 1972-4	Hertfordshire Archaeology, 5, 187-91
1972-75	A41(M) Berkhamsted	Herts	New motorway	Bernard Orna (Berkhamsted & District Archaeological Society)	1975	A native town at Berkhamstead	CA 52, 139
1972-78	M25 Egham	Surrey	New motorway	D Longley, Stuart Needham (Surrey Archaeological Society)	1979	Egham: A Late Bronze Age Settlement & Waterfront	CA 68, 262-7
1973	M5 Bridgewater to Taunton	Somerset	New motorway	Anon (M5 Archaeological Committee)	1973	Rescue Round-up: M5	RN 5, 10
1973	M5 S & W of Taunton	Somerset	New motorway	Anon (M5 Archaeological Committee)	1973	Rescue Round-up: M5	RN 5, 10
1973	Watford & SW Herts Projected lines of new roads	Herts	New road	Anon (Watford & S W Herts Society)	1973	Watford	RN 3, 11
1973?	A14 Newmarket Western Bypass	Suffolk	New bypass	Anon (M11 Regional Committee)	1972	Rescue Round-up: Newmarket bypass	RN 2, 14
1973?	A3(M)	Hants	Improvement: to motorway	G Soffe	1974	The A3(M) motorway: a survey of the archaeological & historical implications	S Hants Archaeological Rescue Group

Fwk date	Fwk road	County	Scheme type	Ref author (org)	Ref date	Ref title	Ref details
1973?	B3227?	Somerset	New bypass	S Minnitt	1974	Early Bronze Age hoard from Milverton, Somerset	Proceedings Of The Somersetshire Archaeological & Natural History Society, 118, 51-3
1973?	M40	Oxon?	New motorway	T Rowley; M Davies	1973	Archaeology & the M40 motorway: an interim report	Oxford: Oxford University Department for External Studies
1973?	M5	Gloucs	New motorway	P J Fowler; J Bennett	1974	Archaeology & the M5 motorway: third report	Transactions Of The Bristol & Gloucestershire Archaeological Society, 93, 101-30
1973?	M3	Hants	New motorway	Anon	1974	Newsletter 1	Winchester: M3 Archaeological Rescue Committee
1973-74	A12 Ufford Wickham Market Bypass Hacheston	Suffolk	New bypass	Anon (Suffolk Unit)	1975	Hacheston	CA 52, 137-8
1974	M3	Hants	New motorway	P J Fasham (M3 Archaeological Rescue Committee)	1975	The organisation of archaeology for the M3	RN 9, 8
1974	M3	Hants	New motorway	P J Fasham	1980	Excavations on Bridget's & Burntwood Farms, Itchen Valley Parish, Hampshire, 1974. MARC 3 sites R5 & R6	Proceedings Of The Hampshire Field Club & Archaeological Society, 36 37-86
1974	M3	Hants	New motorway	P J Fasham	1975	M3 archaeology, 1974	Winchester: M3 Archaeological Rescue Committee
1974	M40 Motorway extension	Oxon, Northants	New motorway	Anon (OAU)	1974	Rescue Round-up: M40 motorway extension	RN 8, 14
1974	A69 Corbridge Bypass	Northumb	New bypass	J Gillam, Charles Daniels	1974	Red House Corbridge	CA 47?, 325-9
1974	General	General	Overview	P A Rahtz	1974	Rescue archaeology	Harmonds-worth: Penguin

Fwk date	Fwk road	County	Scheme type	Ref author (org)	Ref date	Ref title	Ref details
1974, 77	B653 Wheathampstead Bypass	Herts	New bypass	C Saunders; A B Havercroft	1982	Excavations on the line of the Wheathampstead bypass 1974 & 1977; with some thoughts on the oppida at Wheathampstead & Verulamium	Hertfordshire Archaeology, 8, 11-39
1974?	A351 Wareham Bypass	Dorset	New bypass	D E Johnston	1975	The Wareham bypass: its archaeological implications	
1974?	M27	Hants	New motorway	Anon	1975	M27 Chilworth - Windhover: the archaeological implications	S Hants Archaeological Rescue Group
1974-75	Hull	Humber-side	New road	Anon (Humber-side Archaeological Unit)	1975	Round-up: Hibaldstow	CA 53, 177
1974-75	A15 Humber Bridge Approach Hibaldstow	Lincs	Widening	Anon	1975	Round-up: Hull	CA 53, 175
1974-77	M3 Popham to Otterbourne	Hants	New motorway	P J Fasham (M3 Archaeological Rescue Committee)	1977	M3 Archaeology	CA 58, 347-349
1975	A303 Ilchester Bypass	Somerset	New bypass	P J Leach	1975	Ilchester by-pass excavations 1975: interim report	Bristol: Committee for Rescue Archaeology In Avon, Gloucestershire & Somerset (Western Archaeological Trust Interim Reports 7)
1975	M3	Hants	New motorway	P J Fasham	1976	M3 archaeology, 1975	Winchester: M3 Archaeological Rescue Committee
1975	A303 link Ilchester Bypass -	Somerset	New road	Anon (CRAAGS)	1975	Ilchester	CA 50, 83
1975	Winchester New Road Site	Hants	New road	E C Harris, P J Ottaway (Winchester Research Unit)	1976	A recording experiment on a rescue site	RN 12

Fwk date	Fwk road	County	Scheme type	Ref author (org)	Ref date	Ref title	Ref details
1975*	Motorways	National?	New motorway	J Ashdown	1975	Case study on motorway	T Rowley; M Breakell Planning & the historic environment: papers presented to a conference in Oxford, 1975. Oxford: Oxford University Department for External Studies
1975?	M5	Devon	New motorway	K Jarvis	1976	The M5 motorway & the Peamore/Pocombe link	Devon Archaeological Society Proceedings, 34, 41-72, Pl
1975?	M25 Runnymede Bridge	Surrey	New motorway	D Longley	1976	Excavations on the site of a Late Bronze Age settlement at Runnymede Bridge, Egham	The London Archaeologist, 3, 10-17
1975?	M3	Hants	New motorway	P J Fasham	1976	The archaeological implications of the alternative route (A33) to the proposed M3 motorway	Winchester: M3 Archaeological Rescue Committee
1975+	A15? Hibaldstow	S Humbers	New road	R Smith	1981	Hibaldstow	CA 77, 168-71
1975-76	A303 Wincanton Bypass	Somerset	New bypass	Ann Ellison; Terry Pearson (CRAAGS)	1981	The Wincanton Bypass: a study in the archaeological recording of road works	Bristol: Committee for Rescue Archaeology In Avon, Gloucestershire & Somerset, (CRAAGS Occasional Papers, 8), 183-230
1976	A605 Oundle Bypass Ashton	Northants	New bypass	Anon (Nene Valley Research Committee)	1976	Hibaldstow	CA 56, 274
1976	A15 Humber Bridge Approach Hibaldstow	Lincs	Widening	Anon (Humberside Joint Archaeological Committee)	1976		CA 56, 273-4
1976?	M58	Mersey-side	New motorway		1977	M58 archaeological survey	Liverpool: Merseyside Archaeological Society with W Lancs Archaeological Society

Fwk date	Fwk road	County	Scheme type	Ref author (org)	Ref date	Ref title	Ref details
1976?	M5	Gloucs Somerset	New motorway	P J Fowler; J Bennett; V S Hill	1977	Archaeology & the M5 motorway: fourth report	Transactions Of The Bristol & Gloucestershire Archaeological Society, 94, 47-91
1976-81	A605 Oundle Bypass Ashton	Northants	New bypass	Anon (Nene Valley Research Committee)	1981	Ashton	CA 75, 126
1976-77	M3	Hants	New motorway	P J Fasham	1985	The prehistoric settlement at Winnall Down, Winchester: excavations of MARC3 Site R17 in 1976 & 1977	Winchester: Hampshire Field Club with Trust for WA (Hampshire Field Club & Archaeological Society Monographs; 2)/(M3 Archaeological Rescue Committee Report 8)
1976-77	M3	Hants	New motorway	P J Fasham	1978	M3 archaeology 1976-1977	Winchester: M3 Archaeological Rescue Committee
1977?	?	Norfolk	New bypass	B Green; A Gregory	1978	An initiative in the use of metal detectors in Norfolk	Museums Journal, 77-8, 161-2
1977?	M3	Hants	New motorway	P J Fasham	1978	The excavation of a triple barrow in Micheldever Wood, Hampshire (MARC 3, site R4)	Proceedings Of The Hampshire Field Club & Archaeological Society, 35, 5-40
1978	Castleford Inner Relief Road	W Yorks	Urban: new road	Anon (Archaeology Unit, W Yorks Metropolitan CC)	1978	Read all about it	RN 16, 3
1978	Eastbourne	E Sussex	Improvement : widening	Anon (Eastbourne Natural History & Archaeological Society)	1978	Eastbourne	CA 64, 135
1978?	M25 Egham	Surrey	New motorway	D Longley; S Needham	1979	Egham [Surrey]: a Late Bronze Age settlement & waterfront	CA 6, 262-7

Fwk date	Fwk road	County	Scheme type	Ref author (org)	Ref date	Ref title	Ref details
1978?	A69	Northumb	New road	G Jobey	1979	Palisaded enclosures, a Roman temporary camp, & Roman gravel quarries on Bishop Rigg, Corbridge	Archaeologia Aelia (5th Ser), 7, 99-113
1978-80	A45 Clay Lane	Northants	New road	(Archaeology Unit, Northants CC)	1980	A45 new road	RN 21
1978-79	Southampton 6 Dials	Hants	Improvement	D Deveraux (Southampton Arch Research Comm)	1979	Southampton	RN 17, 5
1979?	A33 Swallowfield Bypass	Berks	New bypass	S J Lobb	1980	Observations on the Swallowfield by-pass (A33) (Notes from the Wessex Archaeological Committee, 2)	The Berkshire Archaeological Journal, 70-80, 17-20,
1979?	M3	Hants	New motorway	M A Monk; P J Fasham	1980	Carbonized plant remains from 2 Iron Age sites in Central Hampshire	Proceedings Of The Prehistoric Society, 46, 321-44
1979-80	A13 M25 Grays Bypass	Essex	New bypass	T J Wilkinson	1988	Archaeology & environment in S Essex: rescue archaeology along the Grays By-pass, 1979/80	Chelmsford: Essex County Council Archaeology Section (East Anglian Archaeology Reports, 42)
1980	A12 Colchester Bypass	Essex	New bypass	M Corbishley, G Tann (Tendring Rescue Arch Group)	1981	Motorway archaeology	RN 25, 3
1980?	A1 Catterick Bypass	N Yorks	New bypass	P Wilson (CEU)	1999	Catterick	CA 166
1980s?	A5	Salop	New bypass	C Clark; M Horton	1989	Duncote Farm, Atcham: an archaeological evaluation in advance of the A5 bypass	Ironbridge: Ironbridge Institute (Research Papers 41)
1980s?	M40	Oxon	New motorway	J Steane	1988	Slicing through the past	Country Life, 182, 1 Apr 1988, 161-2
1980s?	M25	Surrey	New motorway	S P Needham; Martin O'Connell	1986	Petters Sports Field, Egham: excavation of a Late Bronze Age/Early Iron Age site	Guildford: Surrey Archaeological Society (Research of the Surrey Archaeological Society; 10)

Fwk date	Fwk road	County	Scheme type	Ref author (org)	Ref date	Ref title	Ref details
1980s?	M25	Bucks	New motorway	M Farley; H Leach	1988	Medieval pottery production areas near Rush Green, Denham, Buckinghamshire	Records Of Buckinghamshire, 30, 53-102
1980s?	M?	Lancs	New motorway	Christopher Stell	1986	Risley Chapel, Lancashire	Transactions Of The Ancient Monuments Society (N Ser), 30, 131-8
1980s?	M3	Hants	New motorway	P J Fasham; R J B Whinney	1991	Archaeology & the M3: the watching brief, the Anglo-Saxon settlement at Abbots Worthy & retrospective sections	Winchester: Hampshire Field Club & Archaeological Society with The Trust for WA (Hampshire Field Club & Archaeological Society Mono 7)
1981	A1 Catterick Bypass	N Yorks	Improvement	P Wilson (DoE Central Excavation Unit)	1982	Cateractonium	RN 29, 8
1981	M54	Salop	New motorway	Hinchcliffe J (ed)	1986	Shackerley	Preservation by record: the work of the Central Excavation Unit 1975-85. London: English Heritage
1981?	M11	Essex	New motorway	I Hodder	1982	The archaeology of the M11, 2. Wendens Ambo: the excavations of an Iron Age & Romano-British settlement	London: Passmore Edwards Museum
1981?	M11	Cambs	New motorway	J Pullinger; C J Young	1982	The M11 western bypass: 3 sites near Cambridge, 1, Obelisk Kilns, Harston [2nd to 4th century RB kilns & working areas]	Proceedings Of The Cambridge Antiquarian Society, 71, 1-24
1981?	M11	Cambs	New motorway	J Pullinger; V Heal; A J Legge	1982	The M11 western bypass: 3 sites near Cambridge, 2, Lingey Fen, Haslingfield [BA causeways, fauna]	Proceedings Of The Cambridge Antiquarian Society, 71, 25-40

Fwk date	Fwk road	County	Scheme type	Ref author (org)	Ref date	Ref title	Ref details
1981?	M11	Cambs	New motorway	T E Miller; M Miller	1982	The M11 western bypass: 3 sites near Cambridge, 3, Edmundsoles, Haslingfield [Iron Age-Roman settlement]	Proceedings Of The Cambridge Antiquarian Society, 71, 41-72
1981?	Reading	Berks	Urban	H Godwin Arnold	1982	17-19 London Street, Reading	Transactions Of The Ancient Monuments Society (N Ser), 26, 53-67
1982	A40 Eynsham Bypass	Oxon	New bypass	R A Chambers	1986	The Eynsham Bypass, Oxon, 1982 [RB settlement]	Oxoniensia, 51, 188-9
1982?	A2 Canterbury Bypass	Kent	New bypass	D Nash	1983	A Celtic bronze coin from the Canterbury by-pass	Archaeologia Cantia, 98, 241
1982?	A22 Maresfield & Uckfield bypasses	E Sussex	New bypass	C F Tebbutt; A G Woodcock	1983	The proposed Maresfield & Uckfield bypasses: a fieldwalk survey including Maresfield Park & Cave	Sussex Archaeological Collections,, 121, 190-3
1982-83	M3	Hants	New motorway	P J Fasham, R whinney	1985	Roads to the Past: A summary of recent archaeological excavations near Winchester	Trust for WA, City Of Winchester
1983	B3138?	Devon	Urban	P J Weddell	1990	Archaeological recording in the medieval borough of Newport, Barnstaple in 1983	Devon Archaeological Society Proceedings, 48, 111-22,
1983?	A338	Wilts	Improvement: widening	S M Davies	1984	The excavation of an Anglo-Saxon cemetery (& some prehistoric pits) at Charlton Plantation, near Downton	The Wiltshire Archaeological & Natural History Magazine, 79, 109-54
1983?	A417 Birdlip Bypass	Gloucs	New bypass	T C Darvill	1984	Birdlip Bypass Project - First report: archaeological assessment & field survey	Bristol: Western Archaeological

Fwk date	Fwk road	County	Scheme type	Ref author (org)	Ref date	Ref title	Ref details
1983?	A40? A429? Northleach Bypass	Gloucs	New bypass	B Rawes	1984	Archaeological discoveries from the Northleach Bypass: a Romano-British settlement examined	Glevensis, 18, 25-42
1983-86?	A1(M) A1000?	Herts	?New motorway	A Rook	1987	The Roman villa site at Dicket Mead, Lockleys, Welwyn	Hertfordshire Archaeology, 9, 79-175
1984	A509 Wollaston Bypass	Northants	New bypass	A Chapman; D Jackson	1992	Wollaston bypass, Northamptonshire. Salvage excavations 1984	Northamptonshire Archaeology, 24, 67-75
1984?	A1(M)	Herts	New motorway	J Harris	1985	The A1(M) through Hatfield	Hertfordshire's Past, 18, 1985, 40-1
1984?	M25	Kent	New motorway	H Woods	1985	Kent motorway archaeology – the M25 & Polhill	Kent Archaeological Review, 79, 1985, 201-2
1984-87	A303	Hants Wilts	Improvement: dualling	P S Bellamy	1992	The investigation of the prehistoric landscape along the route of the A303 road Improvement between andover, Hampshire & Amesbury, Wiltshire 1984-1987	Proceedings Of The Hampshire Field Club & Archaeological Society, 47 5-81
1985?	A47 Wisbech & W Walton Bypass	Cambs	New bypass	A M Johnson	1986	Wisbech & W Walton Highway Bypass: an archaeological survey	Proceedings Of The Cambridge Antiquarian Society, 75, 43-60
1985?	A422 A509 Newport Pagnell Bypass	Bucks	New bypass	M Farley; D Knight	1986	2 Iron Age sites on the Newport Pagnell By-pass	Records Of Buckinghamshire, 28, 148-62
1985-87	Pontefract The Booths/ Tanners Row	W Yorks	Improvement	A Wilmott (WYAS)	1987	Pontefract	CA 106
1985-89	A45(T)	Northants	New bypass	D Windell; A Chapman; J Woodiwiss	1990	From barrows to bypass: excavations at W Cotton, Raunds, Northamptonshire 1985-1989	Northampton: Northamptonshire Archaeology Unit
1986	A303	Hants	Improvement	H Sheldon	1987	None for the Road?	RN 41
1986	A61 Ripon Bypass	N Yorks	New bypass	M Wright	1986	Rescuing Ripon from the traffic. A bypass solution in sight	Country Life, 179, 832-4.

Fwk date	Fwk road	County	Scheme type	Ref author (org)	Ref date	Ref title	Ref details
1986	A35 Dorchester Bypass	Dorset	New bypass	H Sheldon	1987	None for the Road?	RN 41
1986*	M25	SE	Planning		1986	The M25 orbital motorway	London: DTp
1986?	A23 Extension	W Sussex	Improvement: dualling	R Holgate	1987	Field survey of the Pyecombe to Warninglid A23 Extension, W Sussex	Sussex Archaeological Collections,, 125, 226-8
1986?	B3283 B3359	Cornwall	Improvement: widening	A Preston-Jones	1987	Road widening at St Buryan & Pelynt churchyards	Cornish Archaeology, 26, 153-60
1986?	M3	Hants	New motorway	P J Fasham	1987	A 'banjo' enclosure in Micheldever Wood, Hampshire (MARC3 site R27)	Hampshire Field Club & Archaeological Society (Mono 5)
1986?	A303 Lain's Farm	Hants	Improvement	A J Lawson	1987	Some for the Road?	RN 42, 2
1986-87	A351 Wareham Bypass	Dorset	New bypass	C M Hearne; R J C Smith	1992	A Late Iron Age settlement & black burnished ware (BBI) production site at Worgret, near Wareham, Dorset (1986-87)	Proceedings Of The Dorset Natural History & Archaeological Society, 113, 55-105
1986-87	A35 Dorchester Bypass	Dorset	New bypass	P J Woodward; R J C Smith	1987	Survey & excavation along the route of the southern Dorchester bypass 1986-7 - an interim note	Proceedings Of The Dorset Natural History & Archaeological Society, 109, 79-89.
1986-87	A605	Northants	Road construction	Hinchcliffe, J (ed)		The Raunds Area project: Irthlingborough	The work of the Central Excavation Unit 1986-7. London: EH, 7-8
1986-87	A30 Oakhampton bypass	Devon	New bypass			Oakhampton bypass	The work of the Central Excavation Unit 1986-7. London: EH, 13-14
1986-88	A35 Dorchester Bypass	Dorset	New bypass	V Todd	1988	'Reflections on lifting NL structures: tale of 2 archaeological sites'	Conservation today: papers presented at the UKIC 30th Anniversary Conference 1988. London: UK Institute for Conservation

Fwk date	Fwk road	County	Scheme type	Ref author (org)	Ref date	Ref title	Ref details
1986-88	A35 Dorchester Bypass	Dorset	New bypass	R J C Smith	1997	Excavations along the route of the Dorchester bypass, Dorset-8	Salisbury: Trust for WA (WA Reports; 11)
1986-92	A4074 Wallingford Bypass	Oxon	New bypass	Anne Marie Cromarty; Alistair Barclay; G Lambrick; M Robinson	2006	Late Bronze Age ritual & habitation on a Thames eyot at Whitecross Farm, Wallingford: the archaeology of the Wallingford bypass-92	Oxford: Oxford University Committee for Archaeology (Thames Valley Landscapes Mono 22)
1987	A120 A131 Rayne/ Braintree Bypass	Essex	New bypass	M D Smoothy	1988	Excavations on the Rayne/ Braintree bypass, 1987 – interim report	Essex Journal, 23, 59-64
1987	A35 Axminster Bypass	Dorset	New bypass	P J Weddell; N Holbrook	1987	A35 Axminster by-pass report on trial archaeological excavation & documentary research 1987	Exeter: Exeter Museums Archaeological Field Unit (Report 87.06)
1987	A4 A46 Batheaston Bypass	Avon	New bypass	P Davenport (Bath Arch Trust)	1995	Batheaston Bypass	RN 65, 4-5
1987?	A10 Buntingford Bypass	Herts	New bypass	H Cave-Penney; M J Daniells	1988	Observations on the line of the Buntingford bypass	Hertfordshire's Past, 25, 13-L5
1987?	A2? Northfleet S Bypass	Kent	New bypass	D Garrod	1988	The Northfleet S bypass [flint artefacts]	Kent Archaeological Review, 92, 36-8
1987?	A361 Nunney Catch Bypass	Somerset	New bypass	R D Vbranch	1988	A Romano-British site at Holwell, near Frome, Somerset, Fieldwork on Eastern Mendip	University Of Bristol Spelaeological Society Proceedings, 18, 319-22
1987?	A35 Dorchester Bypass	Dorset	New bypass	P Woodward (Trust for WA)	1988	Dorchester	CA 112
1987?	A36 A338 Salisbury Bypass	Wilts	New bypass	M Bowden	1988	Priority scores for archaeological evaluation	Antiquity, 62, 286-8
1987-88	A605	Northants	Road construction	Halpin, C		The Raunds Area project: Irthlingborough	The work of the Central Excavation Unit 1987-88. London: EH, 5-9

Fwk date	Fwk road	County	Scheme type	Ref author (org)	Ref date	Ref title	Ref details
1988	M40	Warks	New motorway	S Cracknell; R Hingley	1994	Park Farm, Barford: excavation of a prehistoric settlement site	Birmingham & Warwickshire Archaeological Society Transactions, 98, 1-30
1988	A52 Bottesford Bypass	Leics	New road	A Graf (Leicestershire Museums Service)	1988	Too little, too late, in Leicestershire	RN 45, 5
1988	A34 Newbury Bypass	Berks	New bypass	C Sparey-Green	1995	Which side of the fence? The dilemma of archaeology & development	RN 67, 3, 6
1988	A39 A40	Leics	Urban: central redevelopment	R A Nicholson	1992	Fish remains from excavations at The Shires: Little Lane (A39) & St P's Lane (A40), Leicester	London: EH (Ancient Monuments Laboratory Reports; 56/92)
1988?	A27 Brighton Bypass	E Sussex	New bypass	R Hartridge; R Holgate; R Kenward	1989	Field walking along the proposed route of the Brighton bypass	Sussex Archaeological Collections,, 127, 241-3
1988-90	A5 A49 Shrewsbury Bypass	Salop	New bypass	P Ellis with J Evans, H Hannaford, G Hughes & A Jones	1994	Excavations in the Wroxeter hinterland 1988-1990: the archaeology of the A5/A49 Shrewsbury bypass	Transactions Of The Shropshire Archaeological & Historical Society, 69, 1-119
1988-91	M40	Bucks, Northants Oxon	New motorway	R A Chambers	1993	The archaeology of the M40 through Buckinghamshire, Northamptonshire & Oxfordshire-91	Oxoniensia, 57, 43-54
1989	A149 Snettisham Bypass	Norfolk	New bypass	M Flitcroft	2001	Excavation of a Romano-British settlement on the A149 Snettisham bypass, 1989	Dereham: Norfolk Museums Archaeology Service, Archaeology & Environment Division (East Anglian Archaeology Reports, 93)

Fwk date	Fwk road	County	Scheme type	Ref author (org)	Ref date	Ref title	Ref details
1989	A149 Snettisham Bypass	Norfolk	New bypass	M Flitcroft		Excavation of a Romano-British settlement on the A149 Snettisham bypass, 1989	Dereham: Norfolk Museums Archaeology Service, Archaeology & Environment Division (East Anglian Archaeology Reports, 93)
1989	A508 Brixworth Bypass	Northants	New bypass	M Shaw	1994	The discovery of Saxon sites below fieldwalking scatters: settlement evidence at Brixworth & Upton, Northants	Northamptonshire Archaeology, 25, 77-92
1989	A66 Bowes to county boundary	Co Durham	Improvement: dualling	P Robinson (Cleveland County Arch Section/ The Bowes Museum)	1990	The A66 archaeology project	CA 11, 62-6
1989	A27 Brighton Bypass	E Sussex	New bypass	D Rudling (ed)	2002	Downland settlement & land-use: the archaeology of the Brighton bypass	London: Archetype with EH (UCL Field Archaeology Unit Monos; 1)
1989?	A3	Hants	Improvement: to motorway		1990	A3 Petersfield to Liphook, Hants.: proposed re-route. Stage 3 archaeological assessment: machine trenching	Salisbury: Trust for WA
1989?	A149 Snettisham Bypass	Norfolk	New bypass	P Murphy	1991	Snettisham by-pass, Norfolk: plant microfossils from Roman contexts	London: EH (Ancient Monuments Laboratory Reports; 39/91)
1989?	A149 Snettisham Bypass	Norfolk	New bypass	C Mortimer	1991	Technical analysis of metalworking debris from Snettisham bypass, Norfolk	London: EH (Ancient Monuments Laboratory Reports; 80/91)
1989?	A272 Cuckfield Bypass	W Sussex	New bypass	Chris Butler	1990	A survey of the route of the Cuckfield bypass	Sussex Archaeological Collections,, 128, 249-51

Fwk date	Fwk road	County	Scheme type	Ref author (org)	Ref date	Ref title	Ref details
1989-90	A5 A49 Shrewsbury Bypass	Salop	New bypass	D F Williams	1991	A note on the petrology of Iron Age pottery from Preston Farm, Attingham, Shropshire (A5/49 Shrewsbury bypass project)	London: EH (Ancient Monuments Laboratory Reports; 127/91)
1989-90	A5 A49 Shrewsbury Bypass	Salop	New bypass	D F Williams	1991	Roman amphorae from the A5/A49 Shrewsbury bypass archaeological project 1989-1990	London: EH (Ancient Monuments Laboratory Reports; 113/91)
1989-90	A47 Norwich southern Bypass	Norfolk	New bypass	S A Mays	1992	Cremated human bone from the A47 Norwich southern bypass excavations (1989-90): the Bixley & Harford Farm sites	London: EH (Ancient Monuments Laboratory Reports; 68/92)
1989-91	A47 Norwich Southern Bypass	Norfolk	New bypass	K Penn	2000	Excavations on the Norwich Southern Bypass, 1989-91, part 2: the Anglo-Saxon cemetery at Harford Farm, Caistor St Edmund, Norfolk	Dereham: Norfolk Museums Service, Archaeology & Environment Division (East Anglian Archaeology Reports, 92)
1989-91	A47 Norwich Southern Bypass	Norfolk	New bypass	T Ashwin; S Bates	2000	Excavations on the Norwich Southern Bypass, 1989-91, part 1: excavations at Bixley, Caistor St Edmund, Trowse, Cringleford & Little Melton	Dereham: Norfolk Museums Service, Archaeology & Environment Division (East Anglian Archaeology Reports, 91)
1989-96	A30 Honiton to Exter	Devon	Improvement: dualling	NPA & WA for the HA	2007	Review of Archaeological inputs into EIA for Trunk Road Schemes	London: HMSO (HA)
1990*	General	General	Comment	J M Robinson	1990	Bypassing the obvious	Country Life, 184, 20 Sept 1990, 126-9, Colour Pls.

Fwk date	Fwk road	County	Scheme type	Ref author (org)	Ref date	Ref title	Ref details
1990*	General	General	Planning	Road Programme & Resources Division Department of Transport	1990	Trunk roads, England: into the 1990s	London: HMSO
1989/90	A1 Newcastle Western Bypass	Tyne & Wear	New bypass	D Passmore; C O'Brien (Newcastle University)	1991	The Newcastle western bypass: rescue & environmental reconstruction at the riverside	RN 52, 5
1990?	A19	N Yorks	New bypass?	M Whyman	1991	Road works	York: Bulletin Of The York Archaeological Trust, 16(1), 12-20
1990?	A66	Co Durham	Improvement: trunking	J P Huntley	1991	What carbonised plant remains?: a macrobotanical investigation of material from excavations along the A66	London: EH (Ancient Monuments Laboratory Reports; 2/91)
1990?	A417 Birdlip Bypass,	Gloucs	New bypass	J Bayley	1991	Analysis of non-ferrous metal objects from Birdlip bypass, Gloucs	London: EH (Ancient Monuments Laboratory Reports; 25/91)
1990?	A149 Snettisham Bypass	Norfolk	New bypass	J Hillam	1991	Tree-ring analysis of well timbers from Snettisham by-pass, Norfolk	London: EH (Ancient Monuments Laboratory Reports; 5/91)
1990?	A419 Snettisham Bypass	Norfolk	New bypass	J G McDonnell	1991	Report on the classification & distribution of the slags from the Snettisham by-pass excavation, Norfolk	London: EH (Ancient Monuments Laboratory Reports; 97/91)
1990?	A27 Brighton Bypass	E Sussex	New bypass	K Nicholas Wilkinson	1993	The influence of local factors on palaeo-environment & land-use: evidence from dry valley fills in the S Downs	London: University College London (Institute Of Archaeology PhD Thesis)
1990?	M25	Surrey	New motorway	L L Ketteringham	1991	The M25 motorway from Godstone to the Kent boundary	Sussex Archaeological Collections, 80 121-32
1990-2001	A1(M) Ferrybridge to Hook Moor	Yorks	Upgrade to motorway	NPA & WA for the HA	2007	Review of Archaeological inputs into EIA for Trunk Road Schemes	London: HMSO (HA)

Fwk date	Fwk road	County	Scheme type	Ref author (org)	Ref date	Ref title	Ref details
1990-93	M3	Hants	New motorway	K E Walker; D E Farwell	2000	Twyford Down, Hampshire: archaeological investigations on the M3 motorway from Bar End to Compton-93	Winchester: Hampshire Field Club & Archaeological Society with The Trust for WA & The HA (Hampshire Field Club & Archaeological Society Mono 9)
1990-94	A417 A419	Wilts	New trunk road	NPA & WA for the HA	2007	Review of Archaeological inputs into EIA for Trunk Road Schemes	London: HMSO (HA)
1990s?	A49 Hereford E Bypass	Herefs	New bypass	R Boddington; R Shoemith (Archaeology Section, Hereford & Worcester CC)	1993	A bypass too far?	RN 59, 6
1990s?	A50	Staffs	New bypass	C A M Banks	1997	Under the road: an archaeological & historical study along the route of the A50, Longton	Stoke-On-Trent: City Museum & Art Gallery (Staffordshire Archaeological Studies; 8)
1990s?	A66 Trans-Pennine Trunk Road	Co Durham	Improvement: trunking	B Vyner	2001	Stainmore: the archaeology of a N Pennine pass: an archaeological survey of Bowes Moor, Co. Durham, undertaken in conjunction with the Improvement of the A66 Trans-Pennine Trunk Road	Hartlepool: Tees Archaeology (Mono 1)
1990s?	A422 Stagsden Bypass	Beds	New bypass	M Dawson	2000	Iron Age & Roman settlement on the Stagsden bypass	Bedford: Bedfordshire County Archaeology Service; Bedfordshire Archaeological Council (Bedfordshire Archaeology Mono 3)
1990s?	A1126	Hunts	New road	Reynolds, T (ed) D Mitchell	1993	A leper cemetery at Spittal's Link, Huntingdon	Cambridge: Cambridgeshire County Council (Cambridgeshire Archaeology Reports; A20)

Fwk date	Fwk road	County	Scheme type	Ref author (org)	Ref date	Ref title	Ref details
1990s?	A1-M1 Link	Yorks	New road	I Roberts; A Burgess; D Berg	2001	A new link to the past: the archaeological landscape of the M1 – A1 link road	Leeds: W Yorks Archaeology Service (Yorkshire Archaeology 7)
1990s?	A5300	Mersey-side	New road	R W Cowell; R A Philpott	2000	Prehistoric, Romano-British & medieval settlement in lowland N W England: archaeological excavations along the A5300 road corridor in Merseyside	Liverpool: National Museums & Galleries On Merseyside
1990s?	A417 A419	Gloucs Wilts	New trunk road	A Mudd; R J Williams; A Lupton	1999	Excavations alongside Roman Ermin Street, Gloucestershire & Wiltshire: the archaeology of the A419/A417 Swindon to Gloucestershire Road Scheme. 1: prehistoric & Roman activity	Oxford: OAU
1990s?	A417 A419	Gloucs Wilts	New trunk road	A Mudd; R J Williams; A Lupton	1999	Excavations alongside Roman Ermin Street, Gloucestershire & Wiltshire: the archaeology of the A419/A417 Swindon to Gloucestershire Road Scheme. 2: medieval & post-medieval activity, finds & environmental evidence	Oxford: OAU
1991	A595? Papcastle Bypass	Cumbria	New bypass	P Turnbull	1991	'Archaeological work on the Papcastle bypass'	Transactions Of The Cumberland & Westmorland Antiquarian & Archaeological Society, 91, 263-304
1991	A259 Rustington Bypass	W Sussex	New bypass	Anon	1991	Iron Age Gold	UCL Field Archaeology Unit News, 1-91, [3]
1991	A27 Brighton Bypass	E Sussex	New bypass	Anon	1991	Bronze working on the Downs	UCL Field Archaeology Unit News, 1-91, [3]

Fwk date	Fwk road	County	Scheme type	Ref author (org)	Ref date	Ref title	Ref details
1991	A27 Brighton Bypass	E Sussex	New bypass	Anon	1991	Bronze Age village at Brighton	UCL Field Archaeology Unit News, 1-91, [4]
1991	M27?	Hants? Kent? Sussex?	New motorway	Anon	1991	Motorway archaeology on schedule	UCL Field Archaeology Unit News, 1-91, [2]
1991	M3	Hants	New motorway	S C Teague	1991	Excavations on Twyford Down 1991	Winchester Museums Service Newsletter, 11, 3-4
1991 & 93	Manor Hill, Brighton	E Sussex	Improvements	Darvill & Fulton	1998	The Monuments at Risk survey of England 1995	Bournemouth & London: School of conservation Sciences, Bournemouth University & EH, Fig1.2,2 & Fig 6.38, 140
1991*	General	General	Comment	H Cleere	1991	DoT on the right road	British Archaeological News, 6(5), 53
1991*	General	General	Comment	G Friell	1991	Archaeology & the trunk roads programme	EH Conservation Bulletin, 13, 8
1991*	General	General	Planning	G Wainwright	1991	Trunk roads & archaeology	EH Conservation Bulletin, 15, 16
1991?	A66	Co Durham	Improvement: trunking	M McHugh	1992	Notes on soils from the Ravock field system above Deepdale in Western Co Durham	London: EH (Ancient Monuments Laboratory Reports; 85/92)
1991?	A505 Leighton Buzzard Southern Bypass	Beds	New bypass	J B Jones	1991	Leighton Buzzard Southern Bypass	Journal Of The Manshead Archaeological Society, 31, 55
1991?	A47 Norwich southern Bypass	Norfolk	New bypass	P Murphy	1992	Norwich southern bypass: plant remains from Beaker, Bronze Age, Iron Age, Romano-British & Late Saxon contexts; river valley sediments	London: EH (Ancient Monuments Laboratory Reports; 20/92)
1991?	A41	Herts	New bypass	T McDonald	1992	Rescue excavations on the A41, Hertfordshire	RN 56, 1992, 6-7
1991?	A14 A604 junction	Cambs	road development	G A Wait	1992	Archaeological excavations at Godmanchester	Proceedings Of The Cambridge Antiquarian Society, 80, 79-95

Fwk date	Fwk road	County	Scheme type	Ref author (org)	Ref date	Ref title	Ref details
1991-92	A20 Dover	Kent	Urban: new road	K Parfitt (Canterbury Archaeological Trust)	1993	The Dover Boat	CA 133
1991-93	A34 Newbury Bypass	Berks	New bypass	Christopher Sparey-Green (WA)	1995	Which side of the fence? The dilemma of archaeology & development	RN 67, 3, 6
1991-97	A34 Newbury Bypass	Berks Hants	New bypass	V Birbeck	2000	Archaeological investigations on the A34 Newbury bypass, Berkshire/Hampshire-7	Salisbury: WA
1991-96	A34 Newbury Bypass	Hants	New bypass	NPA & WA for the HA	nd	Review of Archaeological inputs into EIA for Trunk Road Schemes	London: HMSO (HA)
1991 x3?	Reading	Berks	Urban: road widening	J W Hawkes	1994	Archaeological observations along the line of the Plummery Wall, Reading Abbey	The Berkshire Archaeological Journal, 74-93, 147
1992	A10	Cambs	Improvement	T Reynolds; S Leith	1992	Archaeology between Cambridge & Ely: the A10 corridor, 1992	Cambridge: Cambridgeshire County Council Archaeology Section (Cambridgeshire Archaeology Reports; 69)
1992	A303	Wilts	Improvement: dualling	RCHME	1992	A303: Amesbury to Berwick Down archaeological survey: air photographic transcription & analysis 1992	RCHME (Aerial Survey Report Series)
1992	A27 Westhampnett Bypass	W Sussex	New bypass	A P Fitzpatrick (ed)	1997	Archaeological excavations on the route of the A27 Westhampnett bypass, W Sussex, 1992, 2: the late Iron Age, Romano-British, & Anglo-Saxon cemeteries	Salisbury: Trust for WA (WA Reports; 12)
1992	A20 Dover	Kent	New road	Anon (Canterbury Archaeological Trust)	1992?	Bronze Age Boat Found in Dover	RN 57, 3

Fwk date	Fwk road	County	Scheme type	Ref author (org)	Ref date	Ref title	Ref details
1992	A20 Dover	Kent	New road	K Parfitt, Martin Bates (Canterbury Archaeological Trust, Institute of Archaeology UCL)	1993	The Discovery of the Dover Bronze Age Boat	RN 59, 3
1992	A34	Hants		K E Qualmann	1992	St Catherine's Hill & Twyford Down management plan	Winchester Museums Service Newsletter, 13, 14-15
1992?	A30 Indian Queens to Fraddon	Cornwall	Improvement: dualling	J A Nowakowski	1993	Archaeology along the hard shoulder - the Indl Queens project	Cornish Archaeology, 32, 146-52
1992?	A30	Cornwall	Improvement: dualling	J A Nowakowski	1993	A30 project, Cornwall - Gaverigan Barrow & Penhale Round excavations	Cornwall Archaeological Society Newsletter, 72, [3-4]
1992?	A66	Co Durham	Improvement: trunking	P Robinson; B Vyner	1993	Archaeology on the Stainmore Pass: the results of archaeological investigations carried out in advance of the Improvement of the A66 trans-Pennine road	Durham: Durham County Council with The Bowes Museum, Barnard Castle; In Association with Cleveland County Archaeology Section & EH
1992?	A36?	Wilts	Improvement?	D Coe; R Newman	1993	Archaeological investigations at the shrunken village of Knook	The Wiltshire Archaeological & Natural History Magazine, 86, 75-87
1992?	Braunton Bypass	Devon	New bypass	Anon	1993	Medieval agriculture threatened by road scheme,	British Archaeological News (2nd Ser), 1, 8
1992?	A30?	Cornwall?	New bypass	J Nowakowski	1993	Bypass at Iron Age hamlet	British Archaeological News (2nd Ser), 4, 2, Pl.
1992?	A39 Glastonbury Bypass	Somerset	New bypass	R Croft	1993	Miami advice	British Archaeological News, 6, 11
1992?	A140 A143 Scole Bypass	Norfolk	New bypass	M Flitcroft; A Tester	1993	Small town teamwork	British Archaeological News, 6, 4
1992?	A256 Eastry Bypass	Kent	New bypass	J Willson; A Borlase	1993	A Roman site on the Eastry bypass (Site 2)	Kent Archaeological Review, 111, 2-8
1992?	A256 Eastry Bypass	Kent	New bypass	J Willson	1993	A Bronze Age site on the Eastry bypass (Site 3)	Kent Archaeological Review, 112, 38-47

Fwk date	Fwk road	County	Scheme type	Ref author (org)	Ref date	Ref title	Ref details
1992?	A256 Eastry Bypass	Kent	New bypass	J Willson	1993	An undated site on the Eastry bypass	Kent Archaeological Review, 114, 74-9
1992?	A39 St Columb Bypass	Cornwall	New bypass	N Linford	1993	Geophysical survey, Mayfield Farm, Cornwall	London: EH (Ancient Monuments Laboratory Reports; 1/93)
1992?	A24 Ashington Bypass	W Sussex	New bypass	M Gardiner	1993	By-pass works reveal Bronze Age Ashington	Sussex Archaeological Society Newsletter, 70, 11
1992?	A5300	Mersey-side	New road	L Smith	1993	Merseyside update	British Archaeological News, 5
1992?-2004	A1(M)	S Yorks	Upgrade to motorway	F Brown; C Howard-Davis; M Brennand; A Boyle; T Evans; S O'Connor; A Spence; R Heawood; A Lupton	2007	The archaeology of the A1 (M) Darrington to Dishforth DBFO road scheme	Lancaster: OA North (Lancaster Imprints; 12)
1992-2000	M6 Toll Road	W Midlands	New motorway	NPA & WA for the HA	nd	Review of Archaeological inputs into EIA for Trunk Road Schemes	London: HMSO (HA)
1992-93	A435 Norton / Lenchwick Bypass	Warks	New bypass	Anon	1994	Warwickshire archaeology update, 1994	Coventry & District Archaeological Bulletin, 308, 5
1992-93	A35 Leek Bypass & Rushton Spencer improvement	Dorset?	New bypass	D A Higgins	1996	A35 Leek bypass & Rushton Spencer Improvement draft archaeological assessment (landscape report part 2) (August 1992) revised version; & draft archaeological assessment (amended routes) (June 1993)	Liverpool: University Of Liverpool, Field Archaeology Unit
1992-93	A19 Easingwold	N Yorks	New bypass	M Whyman (York Archaeological Trust)	1990	Easingwold – discovering the prehistory of York	CA 140
1992-93?	A30 Indian Queens	Cornwall	New bypass	J A Nowakowski	1994	Finally bypassing Indian Queens: the A30 project	Cornish Archaeology, 33, 224-5

Fwk date	Fwk road	County	Scheme type	Ref author (org)	Ref date	Ref title	Ref details
1992-93?	A41 King's Langley & Berkhamsted Bypass	Herts	New bypass	T MacDonald (Hertfordshire Archaeological Trust)	1993	The A41 Excavations	CA 136
1993	A46?	Gloucs	New bypass	Anon (ed?)	1993	Battle for Tewkesbury, 1993	British Archaeological News (2nd Ser), 3, 3
1993	New Romney, St Mary's Bay, Dymchurch bypasses	Kent	New bypass	Anon	1993	New Romney & St Mary's Bay & Dymchurch bypasses, 1993	UCL Field Archaeology Unit News, 3, [2]
1993	A140 A143 Scole Bypass	Norfolk, Suffolk	New road	A Tester (Norfolk Archaeological Unit, Suffolk Archaeological Unit)	1990	Scole	CA 140
1993	A41	Herts	New trunk road	Anon		The A41 excavations, 1993	CA 12(4), 133-7
1993	A1(M)	N Yorks	Upgrade to motorway	M Bishop	1993	Excavating Roman Britain, 1993	British Archaeological News, 6, 6-7
1993*	General	General	Comment	Jean Mellor	1993	Roads to Ruin	RN 60, 1
1993*	General	General	Planning	A J Lawson	1993	The assessment of trunk road schemes	Archaeology, 18, 351-5
1993?	A30 Penhale	Cornwall	Improvement: dualling	N Linford	1994	Report on geophysical survey at Penhale Moor, Penhale, Cornwall	London: EH (Ancient Monuments Laboratory Reports; 34/94)
1993?	A256 Eastry Bypass	Kent	New bypass	A Borlase	1994	A prehistoric site on the Eastry bypass (site 5, Hay Hill)	Kent Archaeological Review, 115, 114-19
1993?	A605 Warmington Bypass	Northants	New bypass	M Shaw	1994	A changing settlement pattern at Warmington, Northants	Medieval Settlement Research Group: Annual Report, 8, 1-7
1993?	A420	Oxon	New bypass	J Hunn	1994	A note on the excavation of parish boundaries in the Vale of the White Horse, Oxfordshire	Oxoniensia, 58, 309-13
1993?	M40	Warks	New motorway	P Booth	1994	A section through the Fosse Way at Harwoods House, near Chesterton, Warwickshire	Birmingham & Warwickshire Archaeological Society Transactions, 98, 31-6

Fwk date	Fwk road	County	Scheme type	Ref author (org)	Ref date	Ref title	Ref details
1993?	A14	Northants	New trunk	Anon	1994	Naseby battlefield 'unharmed' by new road	British Archaeological News, 16, 3
1993-2002	A43 Towcester to M40	Oxon	Trunk	NPA & WA for the HA	nd	Review of Archaeological inputs into EIA for Trunk Road Schemes	London: HMSO (HA)
1993-94	Doncaster N Bridge relief road scheme Lower Fisher Gate,	S Yorks	Urban: new road	J Lilley (S Yorkshire Archaeology Field & Research Unit)	1994	N Bridge, Doncaster	RN 63
1994	?	N Yorks	New bypass	M A Newman	1994	Recording at the 'bypass tunnel', 7 Bridges Valley, Studley Royal Park, September 1994	The National Trust, Yorkshire Region (Archive Report MNNTYR64)
1994	A50 Derby Southern Bypass Lockington	Leics	New bypass	G Hughes, M Allen (Birmingham Uni Field Archaeology Unit)	1996	Lockington	CA 146
1994	A4 A46 Batheaston Bypass	Avon	New bypass	P Davenport (Bath Archaeological Trust)	1995	Batheaston Bypass	RN 65, 4-5
1994	A406 N Circular	London	Urban: new road	S O'Connor-Tompson (MoLAS?)	1994		RN 61
1994	A303	Wilts	Plan, not implemented	Anon	1994	A303 Amesbury - Berwick Down tunnel options: planning & design considerations	Swindon: Sir William Halcrow & Partners Ltd
1994*	General	General	Comment	S Denison	1994	Government rethink on roads archaeology	British Archaeological News, 14, 3
1994*	General	General	Comment	Anon (ed?)	1994	Rescue AGM road to ruin?	RN 61, 2
1994?	A27 Westhampnett Bypass	W Sussex	New bypass	D Starley	1995	Examination of slag & other metalworking debris from Westhampnett bypass, Chichester, W Sussex	London: EH (Ancient Monuments Laboratory Reports; 24/95)
1995	A390 Probus Bypass	Cornwall	New bypass	J A Nowakowski	1995	Probus Bypass excavations spring 1995: Trelowthas barrow: close encounters with the Bronze Age	Cornwall Archaeological Society Newsletter, 78, [4 & 5].
1995*	General	General	Comment	E Baker	1995	RN: supplement to RN64 1995	RN 65, [2]

Fwk date	Fwk road	County	Scheme type	Ref author (org)	Ref date	Ref title	Ref details
1995*	General	General	Planning		1995	Trunk roads & archaeology, 1994-1995	London: HMSO (HA)
1995*	General	General	Planning		1995	Trunk roads & archaeological mitigation [Section for insertion Design manual for roads & bridges, 10: environmental design, section 6 (Advice Note 75/95)]	London: HMSO (HA)
1995?	A1 Catterick Bypass	N Yorks	New bypass	P Wilson (CEU)	1999	Catterick	CA 166
1995-97?	A50 Derby Southern Bypass Swarkeston Lowes	Leics	New bypass	D Knight (Trent & Peak Archaeological Trust)	1998	The Derby Southern By-Pass	CA 157
1995-97?	A50 Derby Southern Bypass Potluck Cursus	Leics	New bypass	G Gilbert, Steve Malone (Trent & Peak Archaeological Trust)	1998		CA 157
1995-97?	A50 Derby Southern Bypass Ashton-on-Trent	Leics	New bypass	D Knight (Trent & Peak Archaeological Trust)		The Derby Southern By-Pass	CA 157
1995-98	Various	National	Various		1999	Roads to the past: Trunk roads & archaeology – 1999 report	London: HMSO (HA)
1996	A34 Newbury Bypass	Berks	New bypass	K Aitchison	2000	Archaeology in the fast lane: the new government transport plan	RN 82, 5-6
1996	A1(M)	Cambs	Upgrade to motorway	P Ellis	1998	Excavations alongside Roman Ermine Street, Cambridgeshire, 1996: the archaeology of the A1(M) Alconbury to Peterborough Road Scheme	Oxford: Archaeopress (BAR British Series; 276), Birmingham University Field Archaeology Unit Mono Series, 1
1996*	General	General	Comment	Bl Bevan	1996	Roads to Nowhere? Archaeology, landscape, & a planning process that bypasses more than towns	Assemblage, 1, (http://www.assemblage.group.shef.ac.uk/1/bevan.html)

Fwk date	Fwk road	County	Scheme type	Ref author (org)	Ref date	Ref title	Ref details
1996?	Enderby Bypass	Leics	New bypass	J Gossip	1997	A walkover & fieldwalking survey on the proposed Enderby by-pass route, generating station & construction compound (SK5200 – SK5400)	Leicester: University Of Leicester Archaeological Services (97/14)
1996?	M62?	Lancs	New motorway	B H Abraham	1997	The problem of building motorways, or how runways fight back	Airfield Review, 77
1996?	A1(M)	N Yorks	Upgrade to motorway	D MacLeod	1997	The RCHME Catterick Project. Cropmarks in the A1(M) corridor; Catterick, N Yorkshire: air photographic analysis	York: RCHME (Aerial Survey Report Series)
1996?	A253 Monkton	Kent	Widening (to dual carriageway)	P Bennett (Canterbury Archaeological Trust for Thanet Archaeology)	1997	Monkton	CA 151
1996-98	A35 Tolpuddle to Puddletown Bypass	Dorset	New bypass	C M Hearne; V Birbeck	1999	A35 Tolpuddle to Puddletown bypass DBFO, Dorset, 1996-8, incorporating excavations at Tolpuddle Ball 1993	Salisbury: WA (WA Reports; 15)
1996-99	A30	Devon	Improvement: dualled	A P Fitzpatrick; C A Butterworth; J Grove	1999	Prehistoric & Roman sites in E Devon: the A30 Honiton to Exeter Improvement DBFO, 1996-9	Salisbury: WA (WA Reports; 16)
1997	Taunton fore Street	Somerset	Urban: aesthetic Improvements	A Scrase	1998	Crossing the Street: Archaeology & Highways	RN 75, 4
1997*	General	General	Planning	Transport & the Regions, DoE	1997	What role for trunk roads in England? I: a consultation paper	London: HMSO

Fwk date	Fwk road	County	Scheme type	Ref author (org)	Ref date	Ref title	Ref details
1997*	General	General	Planning	Transport & the Regions, DoE	1997	What role for trunk roads in England? 2: the trunk road network in the regions	London: HMSO
1999/2000	A299 Ramsgate Harbour approach road	Kent	New bypass	E Dyson, G Shand, S Stevens	2000	Causewayed Enclosures	CA 168
2000s?	A43 (Towcester to M40)	Northants Oxon	Improvement:	A Mudd	2007	Iron Age & Roman settlement on the Northamptonshire uplands: archaeological work on the A43 Towcester to M40 road Improvement scheme in Northamptonshire & Oxfordshire	King's Lynn: Northamptonshire Archaeology (Mono 1)
2000s?	A120	Essex	New trunk road	J Timby; R Brown; E Biddulph; A Hardy; A Powell	2007	A slice of rural Essex: recent archaeological discoveries from the A120 between Stanstead Airport & Braintree	Oxford: Oxford WA (Oxford WA Monographs; 1)
2000s?	A34, M4	Berks	Improvement:	A Mudd	2007	Bronze Age, Roman & later occupation at Chieveley, W Berkshire. The archaeology of the A34/M4 road junction Improvement	Oxford: Archaeopress (BAR British Series; 433)
2001-5	A421 Great Barford Bypass	Beds	New bypass	J Timby; R Brown; A Hardy; S Leech; C Poole; L Webley	2007	Settlement on the Bedfordshire claylands: archaeology along the A421 Great Barford bypass	OAU & Bedfordshire Archaeological Council (Mono 8)
2002	A127? Southend-on-Sea	Essex	New road	Anon	2002	Saxon cemetery near Prittlewell Priory threatened	RN 88
2002-3	M6 Toll Road	West Mids	New motorway	A B Powell; P Booth; A P Fitzpatrick; A D Crockett	2008	The archaeology of the M6 Toll 2000-2003	Dorchester: WA

Fwk date	Fwk road	County	Scheme type	Ref author (org)	Ref date	Ref title	Ref details
2003	A1159 Prittlewell	Essex	Improvement	(MoLAS)	2004	Prittlewell: Treasures of a King of Essex	CA 190, 481-485
2003	A1159 Prittlewell	Essex	Widening	I Blair (MoLAS)	2007	Prittlewell Prince	CA 207, 8-11
2003?	A1(M) Ferrybridge	W Yorks	New motorway	A Boyle (OA)	2004	The Ferrybridge chariot burial	CA 191, 505
2004	A45 Irchester	Northants	Improvement: widening	R Friendship-Taylor (Northampton Archaeology)	2005	Irchester Roman Wall Destroyed! Surely some mistake?	RN 96, 1-2
2004	A45 Irchester	Northants	Improvement: widening	Bob Colenutt (Northampton Archaeology)	2005	Irchester Roman Town Wall: Northamptonshire CC response	RN 97, 3
2004?	A1(M)	W Yorks	Improvement: to motorway	I Roberts (ed)	2005	Ferrybridge Henge: the ritual landscape. Archaeological investigations at the site of the Holmfield Interchange of the A1 motorway	Leeds: WYAS (Yorkshire Archaeology 10)
2004-5	A421 Great Barford	Beds	New bypass	M Dawson (OA)	2007	A slice of clay-land	CA 210, 38-42
2006*	A1159 Prittlewell	Essex	Improvement: widening	Anon	2006	Protest at Prittlewell	CA 202

* = Does not relate to fieldwork; publication date of planning document/comment piece.

Appendix 2 - Post-war traffic and road statistics

Source: <http://www2.dft.gov.uk/pgr/statistics/datatablespublications/tsgb/>

Table ii – Road traffic by vehicle type: 1955 – 2005

Year	Cars and taxis	Motorcycles etc.	Buses and coaches	Light vans	Goods vehicles	All motor vehicles	Pedal cycles
1955	42.3	7.5	4.2	9.8	13.2	77.0	18.2
1960	68.0	10.0	3.9	15.0	15.3	112.3	12.0
1965	115.8	6.7	3.9	19.0	17.3	162.7	7.0
1970	155.0	4.0	3.6	20.3	17.6	200.5	4.4
1975	181.6	5.1	3.2	23.5	18.3	231.7	4.4
1980	215.0	7.7	3.5	26.1	19.7	271.9	5.1
1985	250.5	7.4	3.7	28.6	19.6	309.7	6.1
1990	335.9	5.6	4.6	39.9	24.9	410.8	5.3
1991	335.2	5.4	4.8	41.7	24.5	411.6	5.2
1992	338.0	4.5	4.6	41.2	23.8	412.1	4.7
1993	338.1	3.8	4.6	41.6	24.3	412.3	4.0
1994	345.0	3.8	4.6	43.3	24.8	421.5	4.0
1995	351.1	3.7	4.9	44.5	25.4	429.7	4.1
1996	359.9	3.8	5.0	46.2	26.2	441.1	4.1
1997	365.8	4.0	5.2	48.6	26.9	450.3	4.1
1998	370.6	4.1	5.2	50.8	27.7	458.5	4.0
1999	377.4	4.5	5.3	51.6	28.1	467.0	4.1
2000 ¹	376.8	4.6	5.2	52.3	28.2	467.1	4.2
2001 ²	382.8	4.8	5.2	53.7	28.1	474.4	4.2
2002	392.9	5.1	5.2	55.0	28.3	486.5	4.4
2003	393.1	5.6	5.4	57.9	28.5	490.4	4.5
2004 ³	398.1	5.2	5.2	60.8	29.4	498.6	4.2
2005	397.2	5.4	5.2	62.6	29.0	499.4	4.4

Billion vehicle kilometres

1. The decline in the use of cars and taxis in 2000 was due to the fuel dispute.
2. Figures affected by impact of Foot and Mouth disease during 2001.
3. Refinements to the minor roads pedal cycle methodology have been made; these improvements have resulted in revisions to the 2004 pedal cycle estimates.

Statistics for the development of the UK road network since 1955 are given below. There are however a few problems with these figures, largely arising from changing approaches to data collection, and principally affecting the figures for minor roads as these rely most heavily on estimation. The biggest disjunction was in 1993, as can be seen by comparing the two sets of data for that year shown in Table 2 and Table 3.

Table iii - Road length by road class: 1955 - 1993¹

Year	Motorway ¹	Major roads							Minor roads			All roads
		'A' roads: Non built-up			'A' roads: Built-up ²			All	Non built-up	Built-up ²	Total	
		Trunk	Principa	Total	Trunk	Principa	Total					
1955	0.0	..	..	..	44.9	..	..	..	..	..	257.8	302.7
1960	0.2	..	..	..	45.2	..	..	..	..	..	267.2	312.5
1965	0.6	..	..	..	45.4	..	..	..	..	..	277.6	323.6
1970	1.1	..	..	..	46.0	..	..	..	..	..	275.4	322.5
1975	2.0	..	..	32.2	..	..	14.2	48.4	..	..	281.7	330.0
1980	2.6	..	..	32.6	..	..	14.0	49.2	..	..	290.5	339.6
1985	2.8	10.6	22.4	33.0	1.7	12.4	14.1	49.9	169.7	129.1	298.8	348.7
1989	3.0	11.1	22.6	33.7	1.6	12.5	14.1	50.7	170.4	135.5	305.9	356.6
1990	3.1	11.1	22.7	33.8	1.5	12.5	14.0	50.9	170.7	136.4	307.1	358.0
1991	3.1	10.9	23.0	33.9	1.5	12.6	14.0	51.1	171.4	137.5	309.0	360.0
1992	3.1	10.9	23.0	33.9	1.4	12.6	14.0	51.0	170.6	140.6	311.2	362.3
1993	3.1	10.8	23.0	33.8	1.4	12.7	14.1	51.0	170.5	142.6	313.2	364.2

Thousand kilometres

1. Includes trunk motorways and principal motorways.
2. Prior to 1993, built-up roads were those with a speed limit of 40 mph or less (irrespective of whether there were buildings or not).

Table iv - Road length by road class: 1993 - 2005

Year	Motorway ¹	Major roads							Minor roads			All roads
		'A' roads: rural			'A' roads: urban			All	Rural	Urban ²	Total	
		Trunk	Principa	Total	Trunk	Principa	Total					
1993	3.2	10.5	24.6	35.1	1.2	9.9	11.0	49.3	207.6	127.9	335.5	384.8
1994	3.2	10.5	24.6	35.1	1.1	9.9	11.0	49.4	207.9	128.3	336.2	385.6
1995	3.3	10.5	24.8	35.3	1.1	9.9	11.0	49.6	208.2	128.6	336.8	386.4
1996	3.3	10.6	24.6	35.2	1.1	9.9	11.0	49.5	208.5	129.0	337.5	387.0
1997	3.4	10.7	24.6	35.3	1.1	9.9	11.0	49.7	208.8	129.3	338.2	387.9
1998	3.4	10.6	24.8	35.4	1.1	9.9	11.0	49.8	209.1	129.7	338.8	388.6
1999	3.4	10.6	24.9	35.5	1.1	10.0	11.1	50.0	209.4	130.1	339.5	389.5
2000	3.5	10.6	24.9	35.5	1.1	10.0	11.1	50.1	209.7	130.4	340.2	390.2
2001 ³	3.5	10.6	24.9	35.5	0.8	10.4	11.1	50.1	210.0	130.8	340.8	391.0
2002	3.5	10.0	25.6	35.5	0.7	10.4	11.1	50.2	210.3	131.2	341.5	391.7
2003	3.5	9.0	26.5	35.5	0.6	10.5	11.1	50.1	210.7	131.6	342.2	392.3
2004 ⁴	3.5	8.6	26.9	35.5	0.5	10.6	11.1	50.2	207.6	129.9	337.5	387.7
2005 ⁴	3.5	8.2	27.3	35.6	0.4	10.7	11.1	50.2	207.6	130.2	337.8	388.0

Thousand kilometres

1. Includes trunk motorways and principal motorways.
2. Urban roads: Major and minor roads within an urban area with a population of 10,000 or more
3. Figures for trunk and principal roads in England since 2001 are affected by the de-trunking programme
4. New information has enabled better estimates of minor road lengths to be made

Table v - Public road length England: by road type: 1999-2009

Road type	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Trunk motorway	3.4	3.4	3.4	3.4	3.4	3.5	3.5	3.5	3.5	3.5	3.5
Principal motorway	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.04	0.04
Rural 'A' roads ¹											
Trunk ²	10.6	10.6	10.6	9.9	9.0	8.6	8.2	8.3	8.3	8.2	8.2
Principal ²	24.8	24.8	24.9	25.6	26.5	26.9	27.3	27.3	27.3	27.4	27.5
All	35.5	35.5	35.5	35.5	35.5	35.5	35.6	35.6	35.6	35.6	35.6
Urban 'A' roads ³											
Trunk ²	1.1	1.1	0.8	0.7	0.6	0.5	0.4	0.4	0.4	0.4	0.4
Principal ²	10.0	10.0	10.4	10.4	10.5	10.6	10.7	10.7	10.7	10.7	10.7
All	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1
Minor rural roads ⁴											
B roads	24.6	24.6	24.6	24.6	24.5	24.6	24.6	24.6	24.8	24.7	24.7
C roads	73.5	73.6	73.7	73.8	73.9	73.4	73.6	73.6	73.5	73.6	73.6
Unclassified	111.4	111.6	111.8	112.0	112.2	109.6	109.4	115.3	115.4	115.0	114.7
All	209.4	209.7	210.0	210.3	210.7	207.6	207.6	213.4	213.6	213.3	212.9
Minor urban roads ⁴											
B roads	5.6	5.6	5.6	5.6	5.6	5.5	5.6	5.4	5.5	5.5	5.5
C roads	11.0	11.0	11.1	11.1	11.1	10.1	10.9	10.9	10.9	11.0	11.2
Unclassified	113.4	113.8	114.1	114.5	114.8	113.5	113.8	114.4	114.5	114.5	114.5
All	130.0	130.4	130.8	131.2	131.6	129.9	130.2	130.7	130.9	130.9	131.2
All major roads	50.0	50.1	50.1	50.2	50.1	50.2	50.2	50.3	50.3	50.3	50.3
All minor roads ⁴	339.5	340.2	340.8	341.5	342.2	337.5	337.8	344.1	344.6	344.2	344.1
All roads	389.5	390.2	391.0	391.7	392.3	387.7	388.0	394.4	394.9	394.5	394.4

Thousand kilometres

1. Rural roads: major and minor roads, from 1993 onwards, are defined as being outside an urban area.
2. Figures for trunk and principal 'A' roads in England, from 2001 onwards, are affected by the de-trunking programme.
3. Urban roads: major and minor roads, from 1993 onwards, are defined as within an urban area with a population of 10,000 or more. These are based on the 2001 urban settlements. The definition for 'urban settlement' is in 'Urban and rural area definitions: a user guide' which can be found on the Communities and Local Government web site at: <http://www.communities.gov.uk/publications/planningandbuilding/urbanrural>
4. New information from 2004 and from 2006 has enabled better estimates of minor road lengths to be made

Appendix 3 - UK motorway opening dates

Based upon information from the Motorway Archive Trust;

(<http://www.ukmotorwayarchive.org/>, Openings).

Table vi - Motorway opening dates

Scheme	Date	Length (km)	Spur (km)
M6. Preston By-pass (J29 to J32)	Dec 1958	13.4	-
M4. Chiswick flyover (J1)	Sep 1959	0.6	-
M1, M10 & M45. Berrygrove to Crick (J5 to J18), St Albans By-pass & Dunchurch Link	Nov 1959	99.0	16.9
M6 & A601(M) Lancaster by-pass & Carnforth Link (J33 to J35a)	Apr 1960	16.7	1.4
M63. Stretford Eccles By-pass (M60 J7 to J13)	Oct 1960	9.5	-
M50. Brokeridge Common to Ross on Wye (J1 to J4)	Nov 1960	31.9	-
M20. Maidstone By-pass west (J5 to J7) (opened as A20(M))	Dec 1960	5.0	-
M4. Maidenhead By-pass (J7 to J9)	May 1961	4.5	-
A1(M). Doncaster By-pass	Jul 1961	24.1	-
M20. Maidstone By-pass east (J7 to J8) (opened as A20(M))	Sep 1961	5.5	-
A1(M). Stevenage By-pass (J6 to J8)	May 1962	12.6	-
M1(NI). Belfast to Lisburn (to J6)	Jul 1962	10.5	-
M5. Lydiat Ash to Strensham (J4 to J8)	Jul 1962	40.9	-
M50. Strensham to Brokeridge Common (M5(J8) to J1)	Jul 1962	2.6	-
M6. Stafford By-pass (J13 to J14)	Aug 1962	8.7	-
M6. Hanchurch to Cheshire Boundary (J15 to J16)	Nov 1962	14.8	-
M6. Stafford By-pass to Hanchurch (J14 to J15)	Dec 1962	17.9	-
M4. Slough to Maidenhead By-pass (J5 to J7)	Mar 1963	9.5	-
M6. Warrington to Preston (J20 to J29)	Jul 1963	47.0	-
M6. Cheshire (J16 to J20)	Nov 1963	36.4	-
M1(NI). Lisburn to Sprucefield (J6 to J7)	Dec 1963	2.7	-
M2. Medway bridge to Stockbury (J5)	? 63	17.7	-
M90. Forth Road Bridge & North Approach Roads (J1 to J2)	Aug 1964	1.6	-
M1(NI). The Birches to Verners (J12 to J13)	Dec 1964	5.3	-
M6. Preston-Lancaster (J32 to J33)	Jan 1965	21.2	-
M4. Chiswick to Slough (J1 to J5)	Mar 1965	19.3	1.4
A1(M) & A66(M). The Darlington By-Pass motorway	May 1965	15.4	3.5
M1. Crick to Kegworth (J18 to J24)	Nov 1965	59.1	-
M5. Quinton to Lydiat Ash (J3 to J4)	Nov 1965	9.2	-
M8. Harthill Bypass (J4 to J5)	Nov 1965	10.1	-
M1(NI). Sprucefield to Moira (J7 to J9)	Dec 1965	10.9	-
M2. Stockbury to Faversham (J5 to J7)	? 65	19.8	-
M2. Three Crutches (J1) to Medway Bridge	? 65	2.4	-
M4. Tormarton to Almonsbury (J18 to J20)	Jan 1966	17.4	-
M1(NI). Moira to Lurgan (J9 to J10)	Feb 1966	9.7	-

Scheme	Date	Length (km)	Spur (km)
M6. Shareshill to Dunston (J11 to J13)	Mar 1966	12.9	-
M1. Kegworth to Sandiacre (J24 to J25)	May 1966	8.2	-
M4. Port Talbot by-pass (J39 to N of J41)	Jul 1966	5.5	-
M32. Hambrook Spur (M4 to J1)	Sep 1966	0.6	-
M4. Almondsbury to Aust (J21 to J20)	Sep 1966	3.2	-
M5. Almondsbury to Filton By pass (J15 to J16)	Sep 1966	1.8	-
M48. First Severn crossing and Wye bridge	Sep 1966	8.7	-
M6. Darlaston to Shareshill (J10 to J11)	Sep 1966	9.2	-
A8(M)(NI). Corr's corner to Sandyknowes	Oct 1966	1.6	-
M2(NI). Greencastle to Sandyknowes	Oct 1966	5.6	-
M1. Brockley to Berrygrove (J4 to J5)	Nov 1966	6.6	-
M1. Sandiacre to Nuthall (J25 to J26)	Nov 1966	9.7	-
M74. Uddingston Bypass to Hamilton (J4 to J5)	Dec 1966	5.5	-
A57(M) Mancunian Way	Mar 1967	2.4	-
M1. Wakefield to East Ardsley (J41 to J42)	Apr 1967	2.1	-
M1. Nuthall to Pinxton (J26 to J28)	May 1967	14.6	-
M1. Page Street to Brockley (J2 to J4)	May 1967	6.8	-
M4. Newport by-pass (J24 to J28)	May 1967	11.1	-
M40. Handycross to Stokenchurch (J4 to J5)	Jun 1967	12.2	-
A1(M). Baldock By-pass (J8 to J10)	Jul 1967	10.3	-
M1. Thurcroft to Tinsley (J32 to J34)	Jul 1967	10.5	-
M4. Newhouse-Coldra (J2(M48) to J24)	Aug 1967	19.3	-
M8. West of Harthill - Newhouse (J5 to J6)	Aug 1967	9.0	-
M1. East Ardsley to Stourton (J42 to J44)	Oct 1967	5.0	-
M1(NI). Lurgan to Ballynacor (J10 to J11)	Nov 1967	3.9	-
M1. Pinxton to Thurcroft (J28 to J32)	Nov 1967	44.6	-
M18. Thurcroft to Wadworth (J32(M1) to J2)	Nov 1967	13.7	-
M1(NI). Verners to Dungannon (J13 to J15)	Dec 1967	9.2	-
M1(NI). Ballynacor to The Birches (J11 to J12)	Jan 1968	8.9	-
M8. Renfrew Bypass (J26 - J29)	Mar 1968	5.3	-
M74. Hamilton - Larkhall (J5 to J8)	May 1968	13.0	-
M1. Meadowhall to Tankersley (J34 to J36)	Jun 1968	10.8	-
M9. Polmont and Falkirk Bypass (J4 to J9)	Aug 1968	18.7	-
M1. Tankersley to Darton (J36 to J38)	Sep 1968	13.7	-
M1. Darton to Wakefield (J38 to J41)	Oct 1968	14.0	-
M6. Penrith By-pass (J40 to J41)	Nov 1968	5.1	-
M6. Bescott to Darlaston (J9 to J10)	Dec 1968	2.1	-
M8. Glasgow IRR West and North Flanks - Townhead (J15 - J16)	? 68	1.1	-
M40. Wycombe End to Handycross (West of J2 to J4)	Mar 1969	8.9	-
M5. Filton By Pass to Avonmouth (J15 to J18)	Mar 1969	8.2	-
M2(NI). Ballymena By-pass	Apr 1969	7.2	-
A1(M). Durham motorway (J59 to J63)	Sep 1969	34.4	-
M8. Dechmont - Whitburn (J3 to J4)	Sep 1969	9.5	-

Scheme	Date	Length (km)	Spur (km)
M6I. Horwich to Preston	Nov 1969	20.0	-
M90. Crossgates - Kelty and Cowdenbeath Bypass Stage I (J2 to J3)	Dec 1969	10.3	-
A102(M). Blackwall Tunnel Southern Approach road	? 69	3.2	-
M5. Twynning to Tewkesbury (J8 to J9)	Feb 1970	6.1	-
A194(M). White Mare Pool to Black Fell	Mar 1970	6.0	-
A1(M). Birtley By-Pass	Apr 1970	4.8	-
M5. Gordano Valley (J19 to J20)	Apr 1970	10.3	-
M5. M6 to Quinton (J8(M6) to J3)	May 1970	14.5	-
M6. Rayhall to Bescott (J8 to J9)	May 1970	4.2	-
M12(NI). Portadown Urban Motorway	Jun 1970	1.6	-
A40(M)/M41. Westway and West Cross Route	Jul 1970	4.0	1.0
M32. Hambrook to Eastville (J1 to J2)	Jul 1970	4.3	-
M6. Great Barr to Rayhall (J7 to J8)	Jul 1970	1.3	-
M90. Crossgates - Kelty and Cowdenbeath Bypass Stage II (J3 to J5)	Jul 1970	4.8	-
M6. Westmorland (J35 to J40)	Oct 1970	65.5	-
M62. Pole Moor to Outlane (West of J23 to J23)	Nov 1970	3.5	-
M9. Newbridge - Kirkliston and Forth Bridge Connecting Roads	Nov 1970	1.8	-
M6. Carlisle By-pass (J42 to J44)	Dec 1970	10.9	-
M6I. Worsley Braided Interchange to Horwich	Dec 1970	14.8	-
M8. Bishopton Bypass Stage I (J29 - J30)	Dec 1970	5.3	-
M8. Glasgow IRR West and North Flanks - Kingston Bridge (J19 - J20)	? 70	1.0	-
M2(NI). Templepatrick to Dunsilly	Feb 1971	10.5	-
M6. Maxstoke to Bromford (J4 to J5)	Feb 1971	8.7	-
M62. Gildersome to Lofthouse (J27 to J29)	Feb 1971	9.2	-
M5. Gloucester - Moreton Valence (J9 to J13)	Mar 1971	32.0	-
M9. Stirling Bypass Stage I (J10 to J11)	Apr 1971	4.0	-
M8. Newbridge - Dechmont (J2 to J3)	May 1971	8.5	-
M3. Lightwater to Popham (J3 to J8)	Jun 1971	39.4	-
M6. Ansty to Maxstoke(J2 to J4)	Jul 1971	20.3	-
M6. Penrith to Carlisle (J41 to J42)	Jul 1971	20.0	-
M22(NI). Dunsilly to Ballygrooby (J1 to J2)	Aug 1971	3.7	-
M56. Preston Brook to Hapsford (J11 to J14)	Sep 1971	13.0	-
M6. Bromford to Gravelly Hill (J5 to J6)	Nov 1971	5.0	-
M6. M1 at Catthorpe to Ansty to (J1 to J2)	Nov 1971	17.5	-
M602. Eccles By-pass	Nov 1971	3.4	-
M62. Boundary to Pole Moor (J22 to West of J23)	Nov 1971	8.2	-
M62. Eccles to County Boundary (J12 to J22)	Nov 1971	31.2	-
M20. Ditton By-pass (J4 to J5)	Dec 1971	4.3	-
M4. Wickham to Tormarton (J14 to J18)	Dec 1971	65.0	-
M4. Winnersh to Wickham (J10 to J14)	Dec 1971	47.2	-
M5. Michael Wood and Alveston Sections (J13 to J15)	Dec 1971	28.5	-
M4. Holyport to Winnersh (J9 to J10)	? 1971	11.6	-
M8. Glasgow IRR West and North Flanks - Woodside (J16 - J17)	? 1971	1.1	-

Scheme	Date	Length (km)	Spur (km)
A627(M) Rochdale to Oldham Motorway	Jan 1972	5.8	1.0
M56. Wythenshawe to Bowdon (J1 to J7)	Jan 1972	11.7	1.3
M53. Mersey tunnel to Hooton (J1 to J5)	Feb 1972	17.7	-
M57. Liverpool Outer Ring Road. Phase 1 (A59 to A580)	Apr 1972	5.8	-
M73. Maryville - West of Mollinsburn	Apr 1972	9.2	-
A38(M). Aston Expressway	May 1972	3.7	-
M6. Gravelly Hill to Great Bar (J6 to J7)	May 1972	6.8	-
M90. Kinross and Milnathort Bypass (J5 to J8)	May 1972	10.5	-
M18. Hatfield to Thorne (Thorne By-pass) (J5 to J6)	Jun 1972	3.4	-
M606. A6177 to Cleckheaton Road	Sep 1972	3.2	-
M62I. Leeds South Eastern Urban Motorway (J3 to J7)	Dec 1972	3.2	-
M9. Newbridge-Lathallan (M8(J2) to J4)	Dec 1972	20.3	-
M4. Morryston by-pass (J44 to J46)	? 1972	6.1	-
M62. Ainley Top to Chain Bar (J24 to J26)	? 1972	11.3	-
M62. Outlane to Ainley Top (J23 to J24)	? 1972	1.6	-
M8. Glasgow IRR West and North Flanks - Charing Cross (J18 - J19)	? 1972	1.0	-
M8. Glasgow IRR Woodside - Charing Cross (J17 - J18)	? 1972	0.3	-
M22(NI). Ballygrooby to Artresnahan (J2 to end)	Jan 1973	3.7	-
M5. Clevedon and Mendip Hills Sections (J20 to J22)	Jan 1973	24.5	-
A329(M). Reading - Wokingham link	Feb 1973	6.9	-
A1(M). Stanborough to Welwyn (J4 to J6)	May 1973	5.1	-
M2(NI). Belfast to Greencastle	May 1973	4.0	-
M606. Cleckheaton Road to Chain Bar (J26)	May 1973	0.5	-
M62. Chain Bar to Gildersome (J26 to J27)	May 1973	6.8	-
M40. Denham to Wycombe End (J1 to West of J2)	Aug 1973	12.9	-
M5. Highbridge By-Pass (J22 to J23)	Aug 1973	8.0	-
M62. Tarbock to Croft (J6 to J10)	Nov 1973	16.6	-
M62I. Gildersome Street to Beeston (J27(M62)) to J1	Nov 1973	5.5	-
M5. Bridgwater By-pass (J23 to J24)	Dec 1973	7.9	-
A102(M). Hackney Link	? 1973	2.6	-
M40. Stokenchurch to Waterstock (J5 to J8a)	Mar 1974	16.4	-
M57. Liverpool Outer Ring Road. Phase 2 (A580 to M62)	Mar 1974	9.2	-
M62. Hopetown to Ferrybridge (J31 to J33)	Mar 1974	9.2	-
M5. Taunton By-Pass (J25 to J26)	Apr 1974	11.1	-
M62. Rislely to Worsley (J10 to J12)	Apr 1974	15.3	-
M5. Avonmouth Bridge (J18 to J19)	May 1974	6.4	-
M80. Haggs-Pirnhall	May 1974	10.3	-
M9. Stirling Bypass Stage II (J9 to J10)	May 1974	7.7	-
M3. Sunbury to Lightwater (J1 to J3)	Jul 1974	20.6	-
M62. Lofthouse to Hopetown (J29 to J31)	Aug 1974	9.2	-
M63. Sale Eastern and Northenden By-pass (M60 J4 to J7)	Sep 1974	7.2	-
M62. Ferrybridge to Pollington (J33 to East of J34)	Oct 1974	13.5	-
M23. Hooley to Mertsam (J7 to J8)	Dec 1974	1.6	-

Scheme	Date	Length (km)	Spur (km)
M56. Bowdon to M6 (J7 to J9)	Dec 1974	8.5	-
M62. Rawcliffe to Goole (J35 to J36)	Mar 1975	5.3	-
M32. Eastville to Ashley Street (J2 to J3)	May 1975	1.3	-
M63. Sharston By-pass (M60 J2 to J4)	May 1975	2.1	-
M8. Monkland Motorway Stage I (J12 - J15)	May 1975	3.2	-
M11. S Harlow to A120 (J7 to J8)	Jun 1975	15.3	-
M18. Thorne to East Cowick (J6 to J7)	Jun 1975	7.2	-
M53. (M531) Hooton to A5117 (J5 to J10)	Jun 1975	8.4	-
M62. Pollington to Rawcliffe (East of J34 to J35)	Jun 1975	6.1	-
M55 The Preston Northern By-pass	Jul 1975	19.2	-
M56. M6 to Preston Brook (J9 to J11)	Jul 1975	10.1	-
M27. Cadnam to Ower (J1 to J2)	Aug 1975	4.3	-
M66. Bury Easterly By-pass - Southern section (J3 to J19(M60))	Aug 1975	5.0	-
M2(NI). Sandyknowes to Templepatrick	Sep 1975	9.5	-
M25. South Mimms to Potters Bar (J23 to J24)	Sep 1975	4.3	-
M5. Killerton and Sowton Sections (J27 to J30)	Oct 1975	25.1	-
M23. Bletchingley to Pease Pottage (J8 to J11)	Nov 1975	24.0	-
M23. Gatwick Link (J9 to J9A)	Nov 1975	1.3	-
M5. North Petherton By-Pass (J24 to J25)	Nov 1975	10.6	-
M8. Bishopton Bypass Stage II (J30 to J31)	Nov 1975	5.6	-
M27. Ower to Chilworth (J2 to 4)	Dec 1975	8.4	-
M271. Nursling Link	Dec 1975	3.7	-
M54. Forge to Cluddley (J5 to J7)	Dec 1975	6.1	-
A167(M). Newcastle Central Motorway East	? 1975	1.8	-
A58(M)/A64(M). Leeds Inner Ring Motorway	? 1975	3.2	-
M621. Leeds South Western Urban Motorway (J1 to J3)	? 1975	2.9	-
M25. Godstone to Reigate (J6 to J8)	Feb 1976	7.7	-
M25. Maple Cross to Hunton Bridge (J17 to J19)	Feb 1976	6.8	-
M27. Windover to Portbridge (J8 to J12)	Mar 1976	14.8	-
M275. Portsmouth Link	Mar 1976	3.4	-
M62.Goole to North Cave (inc Ouse Bridge) (J36 to J38)	May 1976	17.5	-
M5. Chelston to Willand (J26 to J27)	Oct 1976	13.2	-
M42. Solihull Section (J4 to J8)	Nov 1976	17.4	-
M62. Queens Drive to Tarbock (J4 to J6)	Nov 1976	5.6	-
M69. Leicester section (J2 to M1)	Nov 1976	10.5	-
M25. Thorpe to Egham (J12 to J13)	Dec 1976	5.1	-
M90. Arlary (J8) to Arngask	Mar 1977	6.0	-
M11. Redbridge to S Harlow (J4 to J7)	Apr 1977	18.5	-
M25. Dartford to Swanley (J2 to J3)	Apr 1977	5.1	-
M4. Pontardulais by-pass (J46 to J49)	Apr 1977	13.7	-
M20. Swanley to West Kingsdown (J1 to J2)	May 1977	11.9	-
M5. Exminster Section (J30 to J31)	May 1977	5.8	-
M1. N Circular Road to Page Street (J1 to J2)	Jul 1977	3.9	-

Scheme	Date	Length (km)	Spur (km)
M18. Armthorpe to Hatfield (J4 to J5)	Jul 1977	6.3	-
M69. Coventry section (M6 to J2)	Jul 1977	15.8	-
M180. Brigg By-pass (J4 to J5)	Sep 1977	10.6	-
M4. Tredegar Park-St Mellons (J28 to J29A(A48(M)))	Oct 1977	3.4	-
M77. M8 to Dumbreck Road (M8 to J1)	Oct 1977	1.3	-
M8. Renfrew Motorway (J20 - J26)	Oct 1977	6.8	-
M4. Pyle by-pass (E of J37(A48) to J39)	Nov 1977	8.9	-
M4. Coryton-Pencoed (J32 to J35)	Dec 1977	19.5	-
M90. Muirmont to Craigend (J9 to J10)	Dec 1977	3.5	-
M58. Regional Road upgraded to Motorway (J4 to M6)	? 1977	6.4	-
M27. Hedge End to Windover (J7 to J8)	Feb 1978	7.6	-
M67. Hyde By-pass (J2 to J4)	Mar 1978	5.0	-
M180. Thorne to Sandtoft (J1 to J2)	May 1978	11.4	-
M66. Bury Easterly By-pass - Northern section (A676 to J3)	May 1978	10.3	-
M90. Craigend to A90 (J10 to J11)	May 1978	3.1	-
M90. Craigend to Broxden (J10 to A9)	May 1978	5.0	-
M180. Sandtoft (J2) to Trent	Oct 1978	5.6	-
M180. The Scunthorpe Southern By-pass (J3 to J4)	Nov 1978	10.9	-
M180. Trent to Scunthorpe (J3) including M181	Dec 1978	1.6	4.2
M18. Wadworth to Armthorpe (J2 to J4)	Feb 1979	11.9	-
A(1)M. South Mimms to Roestock (J1 to J2)	May 1979	5.5	-
M8. Monkland Motorway Stage 2A (J11 - J12)	Jun 1979	1.9	-
A3(M). Horndean to Bedhampton	Nov 1979	9.0	-
M11. A120 to Stump Cross (J8 to J9)	Nov 1979	24.5	-
M25. Sundridge Road to Godstone (J5 to J6)	Nov 1979	14.5	-
M11. Cambridge Western By-pass (J9 to J14)	Feb 1980	22.9	-
M20. West Kingsdown to Wrotham (J2 to J4)	Feb 1980	9.7	-
M876. Dennyloanhead to Bowtrees	Feb 1980	11.6	-
M9. Longdyke - Pirnhall	Feb 1980	12.6	-
M8. Baillieston Interchange - Glasgow City Boundary (J8)	Apr 1980	0.3	-
M8. Monkland Motorway Stage 2B (J8 - J11)	Apr 1980	5.3	-
M25. Dunton Green to Sundridge Road (J5)	Jul 1980	1.4	-
M4. Castleton-Coryton (J29 to J32)	Jul 1980	12.1	-
M26. Sevenoaks to Wrotham	Sep 1980	14.3	-
M5(NI). Greencastle to Rush Park	Sep 1980	2.6	-
M58. Aintree to Skelmersdale (to J4)	Sep 1980	11.9	-
M25. Chertsey to Thorpe (J11 to J12)	Oct 1980	3.2	-
M90. Arngask to Muirmont (J9)	Oct 1980	7.6	-
M53. A5117 to Stoak (J10 to J11)	Mar 1981	1.4	-
M56. Hapsford to A5117 (J14 to J16)	Mar 1981	10.0	-
M25. Potters Bar to Waltham Cross (J24 to J25)	Jun 1981	8.5	-
M4. Bridgend Northern by-pass (J35 to E of J37(A48))	Sep 1981	14.3	-
M67. Denton Relief Road (J1 to J2)	Sep 1981	2.7	-

Scheme	Date	Length (km)	Spur (km)
M20. Sellindge to Folkestone (J11 to J13)	Oct 1981	8.4	-
M25. Egham to Yeoveney (J13)	Oct 1981	0.8	-
M65. Burnley to Brierfield (J10 to J12)	Oct 1981	5.8	-
M20. Ashford to Sellindge (J9 to J11)	Dec 1981	15.1	-
M53. Stoak to Chester (J11 to J12)	Jul 1982	5.5	-
M63. Stockport East-West By-pass (M60 J27 to J2)	Jul 1982	4.5	-
M25. Yeoveney to Airport spur (A3113) (J13 to J14)	Aug 1982	3.2	-
M25. North Ockendon to Mar Dyke (J29 to J31)	Dec 1982	7.7	-
M602. Extension to Salford (J2 to J3)	Dec 1982	2.7	-
M25. Theydon Garnon to North Ockendon (J27 to J29)	Apr 1983	17.1	-
M54. Hilton Park to Forge (M6 to J5)	Nov 1983	28.5	-
M25. Wisley to Chertsey (J10 to J11)	Dec 1983	7.9	-
M65. Brierfield to Nelson (J12 to J13)	Dec 1983	1.8	-
M65. Hyndburn to Burnley (J7 to J10)	Dec 1983	8.5	-
M27. Chilworth to Hedge End (J4 to J7)	? 1983	3.5	-
M25. Waltham Cross to Theydon Garnon (J25 to J27)	Jan 1984	12.6	-
M65. Whitebirk to Hyndburn (J6 to J7)	Dec 1984	3.5	-
M25. M40 to Maple Cross (J16 to J17)	Jan 1985	9.2	-
M3. Popham to Bar End (J8 to J10)	Aug 1985	20.6	-
M25. M4 to Iwer Heath (J15 to J16)	Sep 1985	8.4	-
M42. Umberslade Section (J3 to J4)	Sep 1985	9.2	-
M25. Reigate to Wisley (J8 to J10)	Oct 1985	23.0	-
M25. Airport spur to M4 (J14 to J15)	Dec 1985	3.1	-
M42. Tamworth (Water Orton & Kingsbury) Sections (J8 to J10)	Dec 1985	12.2	-
M25. Swanley to Dunton Green (J3 to J5)	Feb 1986	12.4	-
M42. Lickey End to Alvechurch (J1 to J3)	Jun 1986	11.4	-
M42. Tamworth (Polesworth) Section (J10 to J11)	Aug 1986	11.7	-
M25. Dartford Tunnel Southern Approach	Sep 1986	2.4	-
M25. Micklefield to South Mimms (J19 to J23)	Oct 1986	19.8	-
M74. Larkhall - Poniel (J8 to J11)	Oct 1986	16.1	-
A1(M). Roestock to Stanborough (J2 to J4)	Dec 1986	5.1	-
M42. Southern Links (M5 to J1)	Mar 1987	1.4	-
A6144(M). Carrington Spur	Oct 1987	1.9	-
M74. Poneil - Millbank (J11 to J12)	Nov 1987	2.1	-
A601(M). Carnforth quarry link road (J35 to B6254)	? 1987	1.4	-
M65. Nelson to Colne (J13 to J14)	Sep 1988	2.7	-
M66. Portwood to Denton (M60 J24 to J27)	Apr 1989	5.1	-
M40. Longbridge to Umberslade (J15 to M42)	Dec 1989	16.9	-
M42. Northern Turn (M5 to J1)	Dec 1989	2.6	-
M40. Waterstock - Longbridge (J8A to J15)	Jan 1991	73.7	-
M20. Maidstone to Ashford (J8 to J9)	May 1991	21.7	-
M74. Millbank - Nether Abington (J12 to J13)	Nov 1991	11.9	-
M3. Pitmore to Chilworth (J12 to M27(J4))	Dec 1991	6.4	-

Scheme	Date	Length (km)	Spur (km)
M12(NI). NW Link to Craigavon	? 1991	1.4	-
M80. Stepps By-pass	Jun 1992	4.8	-
A74(M). Elvanfoot (J14) - Paddy's Rickle	Aug 1992	3.9	-
A635(M) Extension to Mancunian Way	Sep 1992	0.3	-
A74(M). Kirkpatrick Fleming - Gretna (J21 to J22)	Dec 1992	7.2	-
M2(NI). Crosskennan junction	Oct 1993	1.4	-
M74. Nether Abington - Elvanfoot (J13 to J14)	Nov 1993	8.0	-
M74. West of Fullarton Road - Maryville (J1 to J4)	Apr 1994	4.0	-
A74(M). Dinwoodie Green to Ecclefechan (J16 to J19)	Sep 1994	16.3	-
M4. Baglan-Lon Las (N of J41 to J44)	Dec 1994	9.0	-
A74(M). St Ann's (J16) to Dinwoodie Green	Jan 1995	4.5	-
M3(NI). Dock Street to Middlepath Street	Jan 1995	0.6	-
M3. Bar End to Compton (J10 to J11) & Compton to Pitmore upgrade (J11 to J12)	Jun 1995	7.9	-
A1(M). Walshford to Dishforth	Nov 1995	21.1	-
A74(M). Ecclefechan to Kirkpatrick Fleming (J19 to J21)	Nov 1995	10.1	-
M8. Newbridge (J2) to Edinburgh City Bypass	Dec 1995	5.1	-
M77. Dumbreck - City of Glasgow Boundary (J1 to J3)	Apr 1996	5.0	-
M4. Second Severn crossing	Jun 1996	17.2	-
M49. Severn crossing Link road	Jun 1996	8.9	-
M77. City of Glasgow Boundary - Malletsheugh (J3 to J5)	Dec 1996	5.5	-
M65. M6 to Whitebirk. (J1a to J6)	Dec 1997	19.0	-
A823(M). Halbeath Interchange (J2)	Mar 1998	1.8	-
M3(NI). Middlepath Street to Sydenham By-pass	May 1998	0.8	-
A1(M). Alconbury to Peterborough (J13 to J17)	Oct 1998	20.6	1.3
M1. Extension to A1(M) (J43 to J48)	Feb 1999	18.2	-
A74(M). Paddy's Rickle - to St Ann's (J16)	Apr 1999	31.9	-
M60. Denton to Middleton (J19 to J24)	Oct 2000	15.1	-
M6 Toll. Birmingham Northern Relief Road	Dec 2003	43.5	-
A1(M). Wetherby to Walshford	Apr 2005	7.4	-
M77. Malletsheugh to Fenwick	Apr 2005	24.5	-
A1(M). Hook Moor to Ferrybridge	Jan 2006	12.2	-
M6. Carlisle to Guards Mill	Dec 12008	9.7	-
A1(M). Bramham to Wetherby	Dec 2009	9.7	-
M74. Completion from Fullarton Road junction to M8 Motorway	Jun 2011	8.0	-
A1(M) Dishforth to Leeming	u/c	20.9	-
M80. Stepps to Mollinsburn	u/c	8.0	-
M80. Mollinsburn to Auchenkilns	u/c	2.7	-
M80. Auchenkilns to Haggs	u/c	7.4	-

u/c = under construction, August 2011.

Appendix 4 - Professional Archaeologists working in the UK

Data supplied by Kenneth Aitchison of Landward Research Ltd.

Table vii - Professional archaeologists

Year	Number	Source
1883	1	Thompson, M W 1977 <i>General Pitt-Rivers: evolution and archaeology in the nineteenth century</i> . Bradford-on-Avon: Moonraker Press
1922	24	Wheeler, R E M 1955 'Anniversary address', <i>Antiquaries Journal</i> 37 , 121-130
1925	30	Myres, J N L 1975 'Anniversary address', <i>Antiquaries Journal</i> 55 , 1-9
1930	40	Jones, B 1984 <i>Past Imperfect: the story of rescue archaeology</i> . London: Heinemann
1952	115	Kenyon, K M 1952 <i>Beginning in Archaeology</i> , London: Phoenix House
1957	168	Wheeler, R E M 1957 'Anniversary address', <i>The Antiquaries Journal</i> 37 , 121-130
1973	200	Thomas, C 1973 'Archaeology in 1973', Rahtz (ed) <i>Rescue Archaeology</i> . Harmondsworth: Penguin, 3-15
1975	632	Bishop, J 1975 <i>Opportunities for Archaeologists</i> , Hertford: RESCUE
1977	1221	Dennis, G 1979 'Rescue funding – a national survey', <i>RN</i> , 17, 1-2
1978	1594	Dennis 1979
1979	1614	Dennis 1979
1987	2900	Plouviez, J 1988 'Current funding and structure in British archaeology: a preliminary report', <i>RN</i> 44, 1, 8.
1991	2200	Spoerry, P 1992 <i>The Structure and Funding of British Archaeology: the RESCUE questionnaire 1990-91</i> , Hertford: RESCUE.
1996	2100	Spoerry, P 1997 'The Rescue Survey 1996: some preliminary results', <i>RN</i> 72, 6-7
1998	4425	Aitchison, K 1999 'Profiling the Profession: a survey of archaeological jobs in the UK'. York, London & Reading: Council for British Archaeology, EH & Institute of Field Archaeologists
2002	5712	Aitchison, K and Edwards, R 2003 'Archaeology Labour Market Intelligence: Profiling the Profession 2002/03'. Bradford: CHNTO http://www.discovering-archaeologists.eu/national_reports/Profiling_the_Profession_2002-3.pdf [21 December 2009].
2007	6690	Aitchison, K and Edwards, R 2008 'Archaeology Labour Market Intelligence: Profiling the Profession 2007-08'. Reading: Institute for Archaeologists http://www.discovering-archaeologists.eu/national_reports/Profiling_the_Profession_2007-8.pdf [21 December 2009].
2008	6560	Aitchison, K 2009 'Job Losses in Archaeology'. http://www.archaeologists.net/sites/default/files/node-files/ifa_joblosses_jan09.pdf
2009	6220	Aitchison, K 2009 'Job Losses in Archaeology - October 2009'. http://www.archaeologists.net/sites/default/files/node-files/ifa_joblosses_oct09.pdf
2010	6065	Aitchison, K 2011 'Job Losses in Archaeology - October 2010, January 2011'. http://www.archaeologists.net/sites/default/files/node-files/joblossesjan2011.pdf



ENGLISH HERITAGE RESEARCH AND THE HISTORIC ENVIRONMENT

English Heritage undertakes and commissions research into the historic environment, and the issues that affect its condition and survival, in order to provide the understanding necessary for informed policy and decision making, for the protection and sustainable management of the resource, and to promote the widest access, appreciation and enjoyment of our heritage. Much of this work is conceived and implemented in the context of the National Heritage Protection Plan. For more information on the NHPP please go to <http://www.english-heritage.org.uk/professional/protection/national-heritage-protection-plan/>.

The Heritage Protection Department provides English Heritage with this capacity in the fields of building history, archaeology, archaeological science, imaging and visualisation, landscape history, and remote sensing. It brings together four teams with complementary investigative, analytical and technical skills to provide integrated applied research expertise across the range of the historic environment. These are:

- * Intervention and Analysis (including Archaeology Projects, Archives, Environmental Studies, Archaeological Conservation and Technology, and Scientific Dating)
- * Assessment (including Archaeological and Architectural Investigation, the Blue Plaques Team and the Survey of London)
- * Imaging and Visualisation (including Technical Survey, Graphics and Photography)
- * Remote Sensing (including Mapping, Photogrammetry and Geophysics)

The Heritage Protection Department undertakes a wide range of investigative and analytical projects, and provides quality assurance and management support for externally-commissioned research. We aim for innovative work of the highest quality which will set agendas and standards for the historic environment sector. In support of this, and to build capacity and promote best practice in the sector, we also publish guidance and provide advice and training. We support community engagement and build this in to our projects and programmes wherever possible.

We make the results of our work available through the Research Report Series, and through journal publications and monographs. Our newsletter *Research News*, which appears twice a year, aims to keep our partners within and outside English Heritage up-to-date with our projects and activities.

A full list of Research Reports, with abstracts and information on how to obtain copies, may be found on www.english-heritage.org.uk/researchreports

For further information visit www.english-heritage.org.uk

