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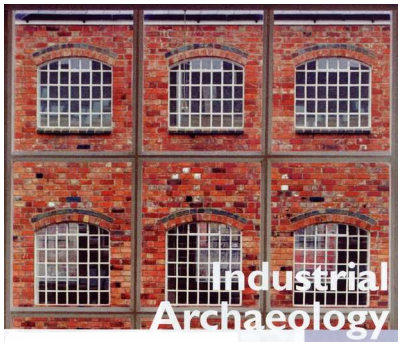


Industrial Archaeology

Sir Neil Cossons On industry and society

Sir Neil Cossons, Chairman of English Heritage, reviews former industrial sites in relation to regeneration and public understanding

The Iron Bridge over the River Severn in Shropshire was made in 1779 at the Coalbrookdale Ironworks where Abraham Darby had earlier introduced the technology of coke-fired ironmaking. Symbolising the importance of the Ironbridge Gorge World Heritage Site, this famous bridge (detail) has been repainted this year, having undergone major repairs in the 1970s

The Boots Factory established on a new site near Nottingham in 1928 contains two remarkable industrial buildings by the civil engineer Sir Owen Williams. The later of the two seen here was built in 1937-38 for dry processes. Both buildings have been adapted successfully to the needs of modern pharmaceutical research and production

The International Congress on Conservation of the Industrial Heritage (TICCIH), held every three years in different locations around the world, is marking the millennium by returning to Britain after 27 years since the first meeting held at Ironbridge in 1973. Delegates will see great changes since those pioneering days of conservation in the early

1970s. Industrial archaeology has added an important dimension to the character of English landscapes, especially in the built fabric of towns and cities which owed their wealth to industry and commerce in the nineteenth century. Britain's legacy of industrialisation is a valuable asset which now lies at the heart of strategies for conservation-led regeneration and sustainable development.

Understanding the development of industry and technology underpins the world of work today but there will always be a need to preserve important historic survivals for their own sake. Only three industrial monuments (the world-famous Iron Bridge, Stott Park Bobbin Mill, and Derwentcote Steelworks) and four windmills and watermills feature in the portfolio of English Heritage properties but very much more has been achieved in the field of industrial archaeology through influence and funding. English Heritage policy has always been to encourage and support others engaged with the preservation and public appreciation of important aspects of England's industrial heritage. Delegates at TICCIH 2000 will see some of these achievements in London and elsewhere around the country, as well as in Scotland and Wales.

The current review of policy for the historic environment emphasises the social agenda for conservation. Admiration for early innovations in technology and manufacturing must be accompanied by responsiveness to contemporary values. The Heritage Economic Regeneration Scheme (HERS), building upon the success of Conservation Area Partnerships, has unlocked the potential of former industrial areas, while the steady pace of investment through modest grants for private owners has reversed the erosion of character among some fine examples of early industrial housing in places such as Saltaire near Bradford and in the textile settlements of the Derwent Valley in Derbyshire. 'Regeneration Through Heritage' – an initiative of 'Business in the Community', launched by HRH the Prince of Wales in 1996 – provides particular expertise in brokering solutions for the re-use of redundant industrial buildings. English Heritage's regional staff are also engaged increasingly in securing the re-use of buildings at risk, especially where vacant industrial premises have potential for new uses as working space for offices, light industry, or community services. The work of the Arkwright Society at Sir Richard Arkwright's famous textile mill in Cromford is an exemplary model of incremental conservation linked with strong emphasis on employment and social regeneration – a fitting tribute to what is acknowledged as the birthplace of the factory system.

Celebrating the world significance of technological innovations and Britain's global influence in industry and commerce during the nineteenth century goes hand in hand with appreciation of modern manufacturing industry. Projects such as 'Made in Lincoln' and the work of the Industrial Trust to raise awareness and understanding of contemporary industries have much to offer in encouraging the careers of future generations. Education is also the cornerstone of English Heritage policy for engaging public opinion in recognising the value of the historic environment.

The National Waterways Museum in the former Llanthony Warehouse at Gloucester Docks is the centrepiece of this Victorian inland port that survives much as it was built at the head of the Gloucester and Sharpness Canal. The fine brick-built warehouses maintain the character of this conservation area and provide context for new development in keeping with the waterside setting

The contracting scale of heavy industry in response to global markets and evolving technologies has released brownfield sites for sustainable redevelopment. Once the heritage value of these sites has been assessed and safeguarded, the challenge is to make best use of the building stock which can be re-cycled and to bring new development

capable of sustaining the nation's productive capacity. English Heritage is therefore in the vanguard of the government agenda for sustainability and regional development while championing the preservation and public enjoyment of the industrial heritage, internationally, nationally, and among local communities.

The former offices of the Great Western Railway are now occupied by the National Monuments Record Centre of English Heritage

Delegates from around the world attending TICCIH 2000 will explore a wide variety of issues reflecting the expanding horizons of industrial heritage conservation. Themes range from innovations of the eighteenth century to the archaeology of mass production and consumerism in the nineteenth and twentieth centuries. Methods of recording, training, and electronic media of communication are especially important for the new generation of industrial archaeologists to whom will be entrusted the continued care of historic sites, machinery, museum collections, and archives. At present, however, international cooperation will be essential for determining priorities in the preservation and recording of large-scale industry – oil refineries, major steelworks, motor car factories, and chemical plants – which present particular challenges for the agencies engaged with conservation and recording. Conclusions of the congress will be disseminated through the publication of selected papers in a special issue of the Industrial Archaeology Review.

The Great Western Railway Works at Swindon developed in the 1840s as the centre for manufacturing, maintenance, and administration covering the entire GWR network The works doubled in size between 1864 and 1876; engineering continued on site until 1986. Equipment in the locomotive works of the 1870s was powered by hydraulic accumulators and steam engines of the Hooter House seen in this photograph taken after the buildings had been adapted for use as the Great Western Designer Outlet Village

Sir Neil Cossons

Chairman

Industry's Legacy 40 years of conservation

Anthony Streeten, Secretary of English Heritage's Industrial Archaeology Panel, reviews the development of conservation policy – understanding, protection, and presentation – from 1962

Lambley Viaduct in Northumberland was built in 1852 to carry the now disused Alston Branch of the Newcastle and Carlisle Railway across the South Tyne Valley. Listed grade II, this viaduct was repaired with funding from the British Rail Property Board, English Heritage, and the Railway Heritage Trust before ownership was transferred to the North Pennines Heritage Trust for management as an amenity for pedestrians*

The roots of official policy for industrial archaeology go back to the early 1960s when the then Ministry of Public Buildings and Works took an adventurous lead in establishing the framework for protecting and conserving industrial monuments. Commissioners of the newly established English Heritage also recognised the importance of an integrated policy on industrial archaeology when, in 1985, they established what is now known as the Industrial Archaeology Advisory Panel – formerly a Sub-Committee of the Advisory Committees on Ancient Monuments and Historic Buildings. Perhaps uniquely, the subject of industrial archaeology has always transcended the legislative codes for buildings, monuments, and historic areas, so it is fitting at a time of policy review for the historic environment generally to reflect upon the evolution of policy and practice for conservation of the industrial heritage.

The principal strands of conservation policy – understanding, protection, and preservation – were established from the outset of early government commitment to industrial archaeology. The first task in 1962 was to commission a survey of industrial monuments in order to accumulate sufficient information and experience to judge priorities for protection and preservation. Grants for the conservation of industrial monuments commenced on a modest scale in 1966–67 when £3250 was allocated to England, £1000 to Scotland, and £750 to Wales. By 1970, however, 82 monuments had been scheduled as worthy of preservation, four mills had been taken into guardianship, and grants had been made towards the preservation of some 19 outstanding industrial monuments in England, Scotland, and Wales.

Importance of industry and technology

Shortly afterwards, the Historic Buildings Council issued guidelines for progressive review of the statutory lists, acknowledging specifically the importance of industrial buildings and innovative technologies. In another important statement of policy in 1974, the Ancient Monuments Board for England established the objective to identify for preservation a selection of sites associated with ‘historical firsts’ and those that illustrate more generally the technology of industrialisation, especially where Britain was in the vanguard of invention and development. The legislation and political context of statutory protection has always been at odds with the need to evaluate industrial complexes as historic entities in their landscape setting, but opportunities were grasped during the 1970s for the systematic assessment of some industries such as iron and steel. Circumstances of rapid change, however, conspired against the comprehensive evaluation of other industries such as town gas production which disappeared with insufficient opportunity for the rational selection of representative sites for preservation.

Demolition of the former Firestone Factory in West London over a Bank Holiday weekend in 1980 to avoid intended listing had far-reaching consequences. Government responded by announcing an accelerated programme to achieve consistent coverage of the statutory lists. The ensuing listing resurvey and subsequent list review programmes have drawn upon the results of accumulated research into particular building types such as textile mills, extending ultimately to the architecture of post-war industry and transport. The Monuments Protection Programme has also broken new ground for the systematic evaluation of industrial sites and landscapes, leading to a range of management recommendations for the recording, protection, and conservation of nationally important monuments.

The Industrial Archaeology Advisory Panel

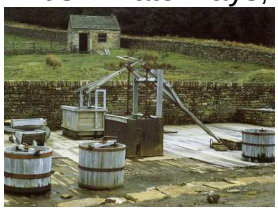
For the last 15 years, the Industrial Archaeology Advisory Panel – under its successive chairmen, Sir Arthur Drew, Lord Montagu, and Sir Neil Cossons – has championed English Heritage’s commitment to industrial archaeology. The Panel’s advice on policy development has ranged from scheduling and listing to issues of authenticity and

restoration. The reconstruction or replication of historic equipment, for example, is justified in some cases to encourage visitor appreciation of manufacturing processes in conjunction with interpretation of the physical remains of important former industries. Principles have been debated for particular schemes such as restoration of the lead-washing floors at Park Level Mill in County Durham. Restoration of the Anderton Boat Lift for safe operation has also raised significant issues of conservation principles regarding the treatment of successive modifications to the original structure.

The Anderton Boatlift in Cheshire, linking the Trent and Mersey Canal with the River Weaver Navigation, was the first hydraulic lift and the first in a series of lifts throughout Europe designed by the engineer Edwin Clark and his associates. Built in 1872–75, the hydraulically-operated caissons were originally counter-balanced by transfer of water but the lift was modified for electric operation in 1908 using counter-balance weights. The structure is being restored for use with partnership funding from a variety of sources

Restoration philosophy and the potentially damaging effects of using fragile and unique surviving equipment for visitor demonstrations have been reviewed carefully when establishing principles for conservation and management of the Newcomen Engine at Elsecar in South Yorkshire. The Panel has also developed policy on the treatment of historic entities, including both the small workshops of Southorn's clay pipe manufactory at Broseley in Shropshire with its abandoned equipment and contents, and the large weaving sheds with their looms at Queen Street Mill, Burnley. As a counterpoint to these successes, however, it has not been possible to preserve important sites such as the Grangetown No 4 blast furnace in Cleveland, the retention of which was not viable owing to the sheer scale and complexity of this heavy industry.

Sustaining the historic character of inland waterways has benefited from the joint British Waterways/English Heritage 'Architectural Heritage Survey' of the canal network. Commissioned in the mid-1980s on the advice of the then Industrial Archaeology Sub-Committee, this initiative was extended subsequently through technical training in relevant craft skills for the repair of historic waterway structures. Maintaining the inventory and managing the training programmes have since been absorbed as core activities within British Waterways, thereby reinforcing the added value of partnership with other agencies.

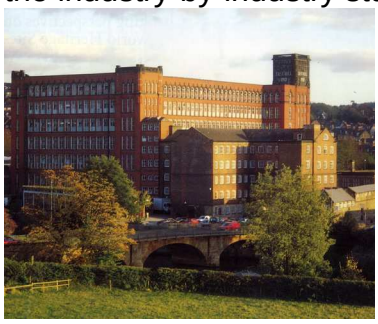


Remains of the lead-washing floor at Park Level Mill, Killhope, in County Durham were excavated in the 1980s. The equipment that would have been used in the nineteenth century has been re-created for the appreciation of visitors using details derived from archaeological investigation and from contemporary technical literature

Policy statement

The English Heritage policy statement on industrial archaeology published in 1995 marked the first formal declaration of policy for this aspect of the historic environment since the initiative of the Ancient Monuments Board some twenty years earlier. Drawing together

diverse fields of activity including conservation, archaeological research, recording, and education, this policy statement reaffirmed operational links with the Royal Commission on the Historical Monuments of England. Following the operational merger of English Heritage and the RCHME in April 1999, the integration of projects and survey programmes is now being developed further within English Heritage's Archaeology and Survey Division.
During the decade after the formation of English Heritage in 1984, grants totalling £12.4m were offered for the conservation of industrial buildings and monuments. Among the most substantial commitments at this time was the grant of £1.0m for repairing the Ribblehead Viaduct which became the springboard for further investment in conservation-led regeneration in the towns and villages along the Settle-Carlisle railway line. Although English Heritage grants are now far exceeded in monetary terms by the 'industrial, transport, and maritime' programme of the Heritage Lottery Fund, the level of English Heritage investment in industrial sites and structures has remained at more that £1.0m annually. The total now stands at more than £20m since 1984, excluding separate resources for the rehabilitation of historic industrial areas and townscapes.
Most recently, the Industrial Archaeology Advisory Panel has been instrumental in a study of Public Access to England's Industrial Heritage and advising on pre-eminently important sites for the new UK Tentative List of intended World Heritage nominations, both of which are described elsewhere in this issue of Conservation Bulletin. In future, the Panel will be reviewing priorities for recording, especially in response to recommendations arising from the industry-by-industry studies carried out under the Monuments Protection Programme.



Built by William Strutt in 1804, the North Mill at Belper in Derbyshire – seen here in the foreground of the later East Mill of 1912 – is the internationally renowned model of early-nineteenth-century fire proof construction. The cotton spinning machinery on five floors was driven by a massive waterwheel supplied from the magnificent adjoining weir on the River Derwent

Anthony D F Streeten

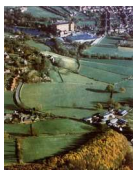
Secretary, Industrial Archaeology Advisory Panel, East Midlands Regional Assistant Director

A fuller account of policy and practice for conservation of the industrial heritage appears in *Perspectives on Industrial Archaeology* edited by Sir Neil Cossons and published by the Science Museum to coincide with the Millennium Congress on Conservation of the Industrial Heritage (TICCIH 2000)

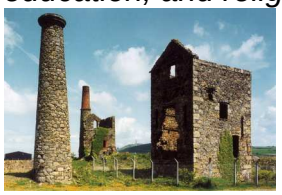
From Icons to Landscapes

Changing perspectives on World Heritage Sites

Christopher Young reviewed recent developments regarding World Heritage Sites in the March issue of Conservation Bulletin and noted the under-representation of cultural landscapes and industrial archaeology. Keith Falconer, Head of Industrial & Military Programmes, examines the sea change in thinking behind these issues



Belper, A Strutt Landscape (1996). Three families shaped the rise of the textile industry in the Derwent Valley – the Arkwrights, the Strutts, and the Evanses. The Strutts developed the factory system to include fresh food from their model farms as well as housing, education, and religious instruction



Old Cooks Kitchen Mine in the Red River Valley. Derelict since 1895, it was the second deepest copper mine before 1740 and the last tin mine in Europe. The two engine houses contained a pumping beam engine (50in diameter) and a winding beam engine (30in diameter)

The World Heritage Committee, the governing body of the World Heritage Convention, has expressed its concern for many years over the lack of industrial sites on the World Heritage List. Ironbridge Gorge, inscribed in 1986, was a rare example, with Wieliczka Salt Mine in Poland and the Royal Salt Works of Arcet Senan in France. In recent years, they have been joined by sites as diverse as paper mills, iron works, and railways spread across several continents. Nonetheless, industrialisation is still under-represented on the World Heritage List.

The need to encompass industrial sites in the World Heritage List was therefore very much in the minds of those working on the new UK Tentative List of World Heritage Sites. Published last year, the List contained proposals for 21 sites on mainland Britain, more than half of which were industrial and maritime sites (only one of the present 13 mainland sites, Ironbridge Gorge, is industrial). According to the Secretary of State for Culture Media and Sport, Chris Smith, the List reflected a concern ‘to advance the concept of World Heritage beyond the monumental and architectural into areas of relevance to all humanity’. He added that ‘the inception and process of industrialisation...has changed and moulded the way in which all the peoples of the world now live. That process began here in Britain and it is right that it should be marked more prominently in the World Heritage List’.

Selection of themes and sites

English Heritage’s Industrial Archaeology Advisory Panel played an important role in the selection of industrial candidates for the Tentative List. The Panel recommended the innovative approach of identifying themes illustrated by landscape designations rather than focusing on single pre-eminent sites.

The case for the selection of themes and sites needed to be rigorous to withstand ensuing examination and counterclaim. It was appreciated that themed landscapes were open to debate, as a landscape bears the mark of many endeavours, but nevertheless it was felt that discrete landscapes could be meaningfully characterised by dominant activities. The themes were:

Developments in eighteenth- and nineteenth-century mining that created distinctive landscapes in Britain and, through the export of the technology, similar landscapes across the world. In England hard rock deep mining techniques are represented by seven Cornish landscapes while coal-mining and iron-making are represented by landscape around Blaenavon in Wales

The industrialisation of processing and manufacture exemplified by the textile industry in the Derwent Valley, Ancoats, and Saltaire (and New Lanark in Scotland), as well as by the country's first industrial suburb based on steam power in Manchester
Pioneering developments in inland transport illustrated by the Great Western Railway and, in the Manchester region, by the structures of the earliest industrial canals and passenger railways
Virtuosity in civil engineering demonstrated by the Great Western Railway from London to Bristol (and the Pont-cysyllte Aqueduct in Wales and the Forth Rail Bridge in Scotland)

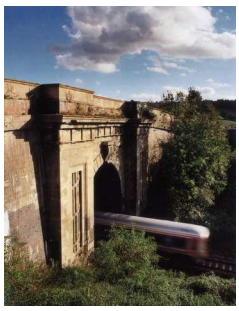
The Cornish Mining Industry

The proposed World Heritage Site is a cluster of seven areas that collectively represent facets of metal mining in the south-western peninsula of England and have a significance far beyond Britain itself. During the eighteenth and nineteenth centuries this area was the world's greatest producer of tin and copper but recently all mining ceased, bringing to a close an activity stretching back some 4000 years. The areas are:
Camborne/Redruth, the archetypal Cornish landscape of engine houses and mine complexes served by urban settlements of terraced houses with chapels, mining exchanges, and engineering works
Caradon, the most impressive upland mining landscape in the region
Godolphin/Tregonning, the earliest phase of the Cornish mining technological spectrum
St Agnes, with dramatic headlands and steep-sided valleys, each with different mining remains
St Day/Gwennap, with dispersed settlements and magnificent minehead complexes
St Just coast, where undersea mining was pioneered at mines such as Bottallack, Levant, and Geevor, presents some of the most dramatic mining landscapes in the world
Tamar Valley tin and copper mines, with their associated smelt works, arsenic calciners, and some of the best examples of mineral ports in the country.

Castle field Manchester, a landscape of canals and railways created in the 18th and 19th centuries, given a modern guise

An 'atmospheric' view of Saltaire: a street scene with all the elements of a mill town landscape: cobbles, gritstone houses, gaslight, mill, and chimney

Chatham Naval Dockyard: Covered slips



Eastern Portal of Middle Hill Tunnel, Box (1998).1 K Brunel's engineering feats of the late 1830s still dwarf modern trains

Derwent Valley Mills

The proposed World Heritage Site for the pioneering development of the textile factory system is a narrow 15 mile (24km) stretch of the lower Derwent Valley embracing the historic textile areas of Cromford, Belper, Milford, Darley Abbey, and Derby. These areas witnessed innovations in the harnessing of power, the marshalling and housing of the labour force, and the scale and structure of manufacturing buildings that, throughout the following century, transformed economies and landscapes far beyond the Derwent Valley itself.

Manchester & Salford (Ancoats, Castlefield, and Worsley)

Manchester is the archetypal city of the Industrial Revolution and includes Britain's first industrial canal, mainline inter-city passenger railway, and industrial suburb based on steam power. The three areas proposed for inclusion – Worsley with the Basin at Worsley Delph giving access to the underground canal system serving the Duke of Bridgewater's coal mines, Castlefield with the first commercial canal basin and Liverpool Road Station, and Ancoats with its early steam driven mills (exemplify those themes and are by the Bridgewater and Rochdale Canals.

The Great Western Railway: Paddington to Bristol

Opened in 1841, the original mainline of the Great Western Railway was built to I K Brunel's seven-foot broad gauge and its engineering works achieved a grandeur unmatched elsewhere in the country. The proposed GWR Site is represented by its magnificent termini at Paddington and Bristol Temple Meads, the portals of Box and Middle Hill Tunnels, the river bridges over the Avon at its western end and over the Thames at Maidenhead at its eastern end, the Swindon Railway Works and Village, the cutting at Sydney Gardens Bath, and the viaduct at Hanwell.

Saltaire

Saltaire from the north. The huge range of Titus Salt's Alpaca Mill of 1853 and the magnificent Congregational Chapel dominate the settlement of hierarchically graded houses, hospitals, almshouses, and Institute

Developed from 1850, Saltaire is England's finest example of an integrated textile mill with associated housing and public buildings. At Saltaire the Factory System, based on mechanised textile production, reached its apogee in the integration of processes and

transport, the utilisation of steam power, and the provision of housing and social amenities, all unified through architectural design.
Allied with the industrial theme is that of Britain's global influence which depended so much on the country's industrial power. Two sites representing the physical aspects of this influence have been included in the Tentative List. Both have strong links with the industrialisation of Britain.

Chatham Naval Dockyard

Chatham is the supreme example of a Royal dockyard largely unaltered from the age of sail when the Royal Navy ruled the waves. The dockyards were the largest industrial complexes of their time and contained all the facilities necessary to build, repair, maintain, and equip ships of the fleet. The proposed World Heritage Site includes the eighteenth- and early-nineteenth-century dockyard, the associated Ordnance Board wharf, defences such as Upnor Castle, Fort Amherst, the Great Lines, and the Brompton Barracks.

Liverpool Commercial Centre and Waterfront

Pier Head, Liverpool and the warehouse stacks and hydraulic pumphouse of Jesse Hartley 's Albert Dock seen from Canning Dock (1998)
Liverpool is the supreme example of a commercial port developed at the time of Britain's greatest global influence – from the late eighteenth century to World War I. The proposed World Heritage Site includes the earlier surviving docks with the magnificent Albert Dock and Pier Head at their centre and the immediate commercial hinterland of commercial offices, exchanges, and town warehouses.

Keith Falconer

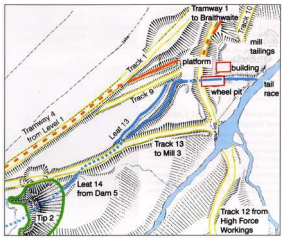
Head of Industrial and Military Programmes

Nominations for the three textile sites of Denvent Valley Mills, New Lanark, and Saltaire, along with the natural site of the Dorset and East Devon Coast, were submitted by the UK government to UNESCO's World Heritage Centre at the end of June. A decision on the nominations by the World Heritage Committee is not expected until December 2001.

Force Crag Mine

Understanding underpins management

Management and conservation of complex industrial landscapes can be problematical. Alastair Oswald describes a recent survey by English Heritage's archaeological investigation team working in partnership with National Park Authorities and the National Trust

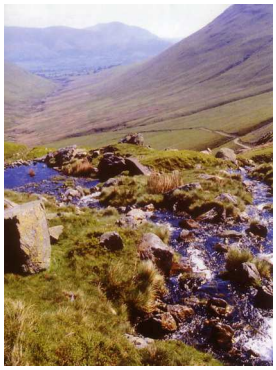


Documentary research undertaken before the English Heritage field investigation had confused the sites of two 19th-century crushing mills, concluding that the remains of the more long-lived had been buried under later spoil heaps. In fact, the surface traces of the wheel-pit, water channels, and settling tanks indicate that the site is both exposed and exceptionally well preserved

In the fast-moving business of heritage management, conservation can sometimes be a matter of protecting the resource first and only later of trying to understand what has been preserved. For organisations like English Heritage, the National Trust, and the National Parks, the increasing emphasis on education through the informative presentation of buildings, monuments, and landscapes means that understanding must be treated as an essential foundation of good conservation and management.

The work currently in progress at Force Crag Mine in the Lake District National Park shows how analysis of surface remains at an early stage can rapidly transform the understanding even of a modern industrial site. In June 1999, in response to a request from the National Trust, English Heritage carried out a detailed analytical field survey of the extant processing building and 42ha of the surrounding fells. Much of the area, including the site of the building, was threatened by unstable scree on the valley sides: major engineering works were necessary. The survey not only provided the first accurate plan of what survives and where, but revealed why it has survived and what its significance is.

Mining at Force Crag took off after 1867, exploiting rich deposits of zinc and barytes, primarily to supply the armaments industry. Until 1991, when production finally ceased, the mine was worked by a string of different companies, each in succession applying innovative techniques and more advanced machinery to extract and refine the minerals. In a pattern of change and continuity familiar to any ‘landscape archaeologist’, the fells are now littered with the traces of all these different episodes of activity.



Throughout the life of the mine, water was used to wash the ore and power machinery. From this dam, built in 1912, water was piped down the valley side to a water wheel that generated power for the whole complex

At the more obvious end of the scale, there are the stark and massive remnants of the pylons ambitiously built in 1939 to carry an aerial ropeway from the High Workings. No less important are the rotting wooden posts and rusting iron pins that represent the last vestiges of a timber shute constructed in the 1870s to ‘slush’ the material down the same precipice. The extant processing building was known to have been built in 1908–09 and redesigned in 1939–40, but it evidently underwent numerous undocumented changes. The building has previously been treated as a monument in isolation; the English Heritage analysis of the wider landscape revealed why the building is sited where it is, and how it functioned at the heart of a web of water channels, tracks, and tramways.

On the basis of the English Heritage field survey, the National Trust is making well-informed judgements about what to conserve and present to the many thousand members of the public who pass by Force Crag each year.

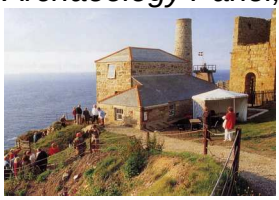
Alastair Oswald

The results of this fieldwork are deposited in the National Monuments Record at Swindon and available to the public through:
Public Services, NMR,
Kemble Drive, Swindon,
Wiltshire, SN2 2GZ. Tel 01793 414600; www.english-heritage.org.uk

HISTORIC WORKS & EQUIPMENT

Appreciating the industrial heritage

Historic industrial sites are supported by a committed group of volunteers and attract increasing numbers of visitors. Anthony Streeten, Secretary of English Heritage's Industrial Archaeology Panel, reports on current trends

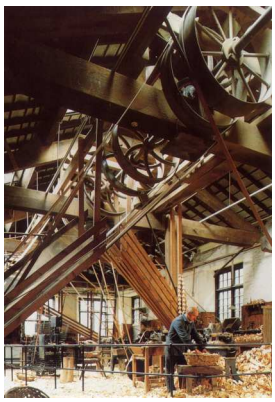


The Levant Beam Engine situated on the cliffs near Land's End is the oldest beam engine in Cornwall now steaming again after sixty years. The property is managed on behalf of the National Trust by the TrevithickTrust which shares curatorial and management services with several sites in the region

There is nothing quite like the sight, sound, and smell of working machines. The preservation and public appreciation of historic industrial sites, equipment, and processes in Britain owes much to the strong tradition of voluntary commitment that is admired internationally. Yet the day-to-day business of preserving and managing the industrial heritage can be vulnerable to changing patterns of local authority funding, and in many cases the work relies upon an ageing cohort of volunteers who alone have the necessary specialist skills to conserve and demonstrate historic machinery.

At a time when government policy seeks to maximise the public benefit from investment in conservation of the historic environment, English Heritage has begun to review the implications for continued and enhanced public access to the nation's important industrial legacy. A strategic study commissioned from PLB Consulting Ltd has therefore examined the current circumstances and management of sites that have been singled out to promote understanding of technological, industrial, and social history among present and future generations. Information has been collected for the first time about more than 600 preserved industrial sites throughout England where public access is provided and where appreciation, education, and enjoyment are encouraged through displays and interpretation.

The illuminating results of a questionnaire survey carried out in 1998 confirm the significant role of small independent groups of volunteer enthusiasts in conserving industrial buildings and monuments for the benefit of visitors. Extrapolating the data from the sample survey, the immense value of volunteer time devoted to this aspect of the industrial heritage is estimated in monetary terms at £5.8m annually (using an indicative hourly rate of just over £5). While the retention of these volunteers is relatively stable, there appear to be few new entrants and there is a decline in the number of people serving apprenticeships in relevant industries. At 40% of the sites the volunteers are of retirement age and older.

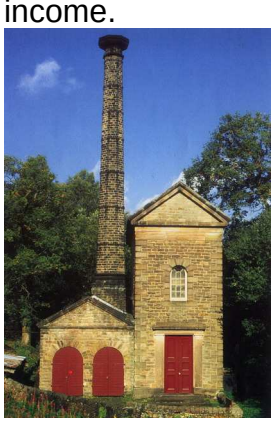


Stott Park Bobbin Mill in Cumbria is an English Heritage property under local management. This working mill dating from 1835 ceased manufacturing wooden bobbins for the Lancashire textile industry in 1971 but the process is still demonstrated for visitors

Technical and craft skills

Historic machinery is operated at just under a third of the industrial heritage sites that attract visitors. Safeguarding the continuity of technical and craft skills is therefore a significant issue. Some organisations provide training but at more than 10% of the sites there is no formal provision for passing on the skills necessary for sustained conservation and operation of the equipment and machinery. Instead there is general reliance upon informal means of transferring specialist skills. Similarly, the survey has shown that quinquennial surveys of structural condition are carried out at less than 10% of the sites. This shortage of documentation therefore underlines the need for further work to develop policies and operational plans that promote sensitive and sustainable management principles for industrial heritage sites.

Site managers who participated in the questionnaire survey were generally optimistic about the continuing level of public interest in the industrial heritage. The overall number of visitors has increased by more than 20% since 1990 but this is mainly because more sites are opening to visitors rather than because of increased attendance at individual sites. A few ‘flagship’ attractions have relatively high visitor figures but the study has demonstrated that the majority of preserved industrial buildings and monuments attract no more than a few thousand visitors each year. At least some revenue is available from visitors at just over half of the sites where an admission charge is levied but only one in six sites have takings of more than £2 per head from ticket sales. Only those sites that have invested to enhance the quality of their facilities expect to see any significant increase in visitor income.



The Leawood Pumphouse beside the Cromford Canal in Derbyshire contains a beam-pumping engine dating from 1849. The engine has been restored to working order and there are open days for visitors from time to time

What then are the implications? The encouraging level of commitment from the voluntary sector is a source of vital technical expertise. The need remains, however, for increased

professionalism in the management and presentation of many industrial heritage sites in order to sustain the interest of visitors at a time when there are many competing opportunities for the use of leisure time. Faced with increasing competition for scarce public funding, it is also inevitable that the choice of historic industrial sites for preservation and public access will remain highly selective. Attention must be given to filling the gaps – both regional and among particular industries – in the national portfolio of accessible sites, avoiding duplication of effort and resources. A crucial challenge is to develop the expertise of site managers and volunteers in business planning and conservation management while sustaining enthusiasm and commitment at the local level.

Sustainable tourism

There are opportunities in terms of sustainable tourism for using selected sites as 'gateways' to the interpretation and enjoyment of wider landscapes. The model developed by the Trevithick Trust in Cornwall also signals benefits that can be derived from collaboration within a particular area or region in order to achieve economies of scale for promoting and managing industrial heritage sites. The justification for preserving large and often complex sites and structures for their own sake rightly depends upon demonstrating and quantifying the public benefits. Matching volunteer resources with appropriate sources of public funding is thus an effective means of fulfilling social objectives as well as meeting the needs of conservation. Encouraging awareness of Britain's industrial legacy, coupled with appreciation for modern manufacturing industry, deserves a prominent place in strategies for regional development.

Anthony D F Streeten

Secretary, Industrial Archaeology Advisory Panel, East Midlands Regional Assistant Director

Further information on the study of public access to England's industrial heritage is available from: Dr Anthony Streeten, East Midlands Regional Office, 44 Derngate, Northampton NN1 1UH; anthony.streeten@english-heritage.org.uk

Industrial heritage sites accessible for visitors

Extractive industries	11%
Inorganic manufacturing	7%
Organic processing	49%
Power and utilities	8%
Transport	24%
Other services	1%

Ownership of industrial heritage sites

Private	22%
Preservation Trust or Society	31%
Local Authority	20%
Commercial Company	7%
Other	9%
Not known	11%

Human resources dedicated to industrial heritage sites

Workforce of 4800 employed in managing the sites
Volunteer time valued at £5.8m annually

Visits to industrial heritage sites

1990	3.7 million
1997	4.4 million

21% increase in visits to industrial heritage sites, 1990 to 1997
Few sites attract more than 50,000 visitors annually
More than half the sites are visited by fewer than 5000 people each year

The Bowes Railway near Sunderland was the last mineral line in Britain to have combined three methods of working: locomotives, stationary haulage engines, and gravity inclines. A section of the line was preserved on closure in 1974 and is now operated by the Bowes Railway Company, a registered charity run by volunteers who manage the site on behalf of the City of Sunderland Council

BIRMINGHAM'S JEWELLERY QUARTER

200 years of development

John Cattell, project leader of the survey of Birmingham's Jewellery Quarter, discusses that initiative and the resulting urban regeneration of a unique area of modern jewellery production

Mr Oliver Richards repairing a long-case clock movement in his workshop in the Jewellery Quarter

The exceptionally well-preserved press and stamp shop at the late 19th-century coffin furniture works of Newman Brothers' Ltd, an important factory recently listed Grade 11*

A recent survey by English Heritage of Birmingham's historic Jewellery Quarter, part-funded by Birmingham City Council and Advantage West Midlands, has revealed that the area is unique in a European and, quite possibly, in a world context. Its importance stems both from its dense concentration of former houses converted to workshop use, custom-built factories, and other specialist buildings associated with the jewellery and metal trades and dating from the late eighteenth century, as well as the extent of their survival and the variety of processes carried on there. Considerable emphasis has been placed on recording these processes, many of which have been largely unchanged for nearly two hundred years and often involve the use of historic machinery. The survey has culminated in a detailed report, to be published in Spring 2001 (details on back cover).

Individual site surveys carried out within the Quarter from the 1980s by the Emergency Recording section of the former Royal Commission on the Historical Monuments of England revealed a threat to the special character of the area through the demolition of significant buildings and their adjoining rear workshops, often to create car parks. These incremental changes and a predicted increase in investment in the Quarter, associated

with its designation as an ‘urban village’, highlighted the urgent requirement for a survey of the buildings in order to underpin and inform its regeneration. Consequently, beginning in October 1998, a comprehensive survey was undertaken by building investigators and photographers of the Swindon-based Architectural Survey team.

Gold jewellery production

The Quarter is still the national centre of gold jewellery production, with up to 6000 people employed in the area. While sorne branches of the trade are thriving, others are undergoing a degree of contraction resulting in under-used and derelict buildings. There is scope for new sustainable mixed-use development, but it is important that these changes do not have an adverse affect on the survival of existing jewellery and metal working businesses, which, with the buildings, give the area its special significance.

Exhibition and booklet

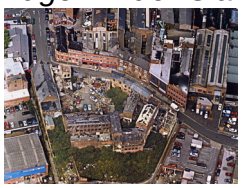
English Heritage’s contribution to the debate on the future of the Quarter has been to explain why it is important both as a working entity and an historic area of international significance. This message was the theme of a highly successful exhibition held at the School of Jewellery in the Quarter in May 2000 and the accompanying popular booklet. Both the exhibition and booklet have emphasised the importance of conservation-led regeneration of the Quarter, including sensitive refurbishment of significant buildings and, where appropriate, the construction of high-quality new architecture.

Conservation plan

With Birmingham City Council, English Heritage is co-funding a conservation plan for the management of the Quarter. English Heritage will contribute to the development of the area through representation on the urban village project board, while Birmingham City Council is extending conservation area boundaries to encompass the whole of the Quarter. These initiatives flow from an enhanced understanding of the special character of the area provided by a concerted programme of survey and research.

Detail of New Gate, commissioned as part of the Quarter’s regenaration with plant and mineral images used in jewellery design

The Key Hill elevation of Gem Buildings, a diamond cutting and polishing factory of 1913. This building is an important early example of a modem jewellery factory characterised by huge windows and an almost complete absence of decoration.



Derelict and fire-damaged buildings of the former brass works of Walker and Woodward on the south side of Legge Lane in the Quarter

The fine free Jacobean-style Vaughton Gothic Works on Livery Street. Built in 1902, this factory specialised in the production of medals, badges and civic jewellery

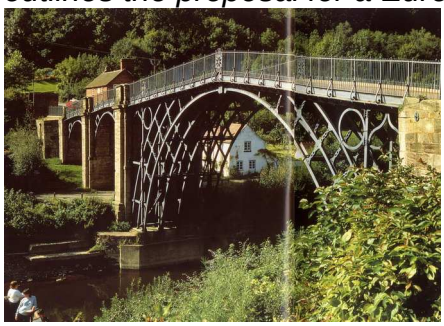
John Cattell

Project Leader, Architectural Survey

COMMISSIONER PHILIP DAVIS

On Europe's industrial heritage

European industrial development is increasingly important for public understanding, regional identity, and cultural tourism. English Heritage Commissioner, Philip Davis, outlines the proposal for a European Route of Industrial Heritage



Ironbridge – starting point of the European Route of Industrial Heritage

To mark the fiftieth anniversary of the Council of Europe and the twenty-fifth anniversary of the European Year of Architectural Conservation, European heads of state and government decided at their summit meeting in October 1997 to launch a campaign called 'Europe – Our Shared Heritage' in 1999/2000. This campaign aims to advance the integration of Europe, to enhance public appreciation of the man-made environment (both the cultivated landscape and the architectural heritage), to highlight economic resources needed for sustainable development, and to encourage honorary workers to protect and preserve that heritage. In addition to cultural events during the year, it is hoped to develop more long-term initiatives for cultural tourism.

One of these initiatives is the European Route of Industrial Heritage, based on the concept of the 'Route of Industrial Heritage' opened in the Ruhr Basin in 1999 and championed by the state government of North Rhine-Westphalia in Germany with funding from the European Union's INTERREG IIC programme. This new route is being developed by a consortium of regional and local governments, led by North Rhine-Westphalia. In Britain, the partners involved so far are Essex County Council, Telford and Wrekin Council, Torfaen County Borough in south Wales, and the Greater Manchester Archaeological Unit. It is hoped to complete a master plan for the first phase of the route in 2001 in order to implement part of the project in Great Britain, Belgium, the Netherlands, and North Rhine-Westphalia and the Saarland in Germany. Later the project will spread to other parts of Europe.

The starting point of the complete route is Ironbridge, Great Britain, the birthplace of industrialisation. Touching other regions in Great Britain (Manchester, Liverpool, Glasgow, the Black Country, Wales), it will ultimately cross to the Continent through the Netherlands, Belgium, and Luxembourg. Further on, the route will pass through France (Pas de Calais, Lorraine, Burgundy), Spain (Catalonia), Switzerland, and northern Italy. From there, it will

continue through Austria to Czechia (Ostrava), Poland (Upper Silesia and the Kamienna Valley), and the Baltic states, with a detour to Russia (Urals). Finally, the route will cross Sweden (Bergslagen), Denmark (the Copenhagen area), as well as several regions of Germany, finally arriving in the Ruhr Basin.
If you have any questions or comments, please contact the Project Secretariat. There is also an Internet website www.erih.de offering information and facilities for you to offer ideas and suggestions for the project.

Councillor Philip Davis

Leader, Telford and Wrekin Council, Commissioner, English Heritage

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Notes

Curtilage and listed buildings

The question of whether a building is a curtilage building is rarely straightforward and was further complicated for a time by the High Court decision in the case of Skerrits of Nottingham last year. It is a question of particular significance to listed buildings because, by virtue of section 1(5) of the P(LBCA)A 1990, any object or structure within the curtilage of the building is to be treated as being part of it provided that object or structure forms part of the land and has done so since before 1 July 1948.

The courts have in a number of cases considered the question of curtilage; most notably in the context of listed buildings being AG v Calderdale BC [1982] 46 P&CR. This established three general principles to be taken into account:

1. the physical layout of the listed building and the structure
2. their ownership, past and present
3. their use or function past and present

In the Skerrits case, the local authority had served a listed building enforcement notice in respect of the Stable Block in the grounds of the Grade II* listed Grimsdyke Hotel requiring the removal of white plastic double-glazed windows that had been installed without the benefit of listed building consent. The Stable Block (that was not listed in its own right) was about 200m from the Hotel and was thought to have been built contemporaneously. On appeal the Inspector had applied the tests laid down in the PPG and had concluded that 'based on the physical, historical, ownership, and functional facts before me, the structure known as the Stable Block lies within the curtilage of Grimsdyke...'.

However, in accepting the appellant's argument that the Inspector had erred in law in that he had failed to have regard to the principle that curtilage of a listed building was confined to a small area around the building (that they claimed had been established by case law), Mr George Bartlett (sitting as Deputy Judge in the Queen's Bench Division) concluded that 'considerations of function, history and ownership, and physical layout are all material and may in most cases be determinative of the question, but, unless the decision-maker also bears in mind the essential concept of size, in cases of substantial physical separation he may come to a wrong conclusion'.

In coming to this conclusion, he relied principally on the decision of Dyer v Dorset County Council [1989]l QB 346; a case not concerned with listed buildings and not citing either the Calderdale or Debenham cases.

The Court of Appeal, however, whilst accepting that Dyer was an important case and right on its facts, has recently held that the deputy judge was mistaken in treating Dyer as having such clear force as he thought it had.

In the nature of things the curtilage within which a mansion's satellite buildings are found is bound to be relatively limited. But the concept of smallness is in this context so completely relative as to be almost meaningless, and unhelpful as a criterion.

Accordingly, the appeal was allowed and the position is as it was.

Elizabeth Collins

Legal Team, Corporate Services

Launch of the 2001 Civic Trust Awards

The Civic Trust has launched the 41st round of Civic Trust Awards for architecture and environmental design, with a particular focus on rural design. New buildings, restorations, landscapes, and public art are eligible to be entered for these highly respected awards. The 2001 Awards are open to projects im the countryside and country towns of the UK. In addition to the general awards, the Civic Trust will also be giving a number of Special Awards, including three for rural design, sponsored by the Countryside Agency, and one for access to a historic site or building, sponsored by English Heritage. A full list of the areas of the UK that are eligible for the 2001 Civic Trust Awards is available on www.civictrust.org.uk

For entry forms and further information about the Civic Trust Awards, please contact: Kate Ferris, Awards Office, Civic Trust, 17 Carlton House Terrace, London SW1Y 5AW. Tel 020 7930 0914; awards@civictrust.org.uk,
www.civictrust.org.uk

Heritage Open Days 2000

A national annual celebration of architecture and culture in its seventh year, Heritage Open Days will be held on the weekend of 16–17 September. Coordinated by The Civic Trust on behalf of The Department for Culture, Media and Sport, and supported by English Heritage the event harnesses voluntary effort and enthusiasm to open up to 2000 buildings and sites throughout England free of charge. From museums to cathedrals, private houses to industrial sites, all types of buildings are welcome to open their doors to those interested in architecture and culture.
For further information, please contact: The Civic Trust, Heritage Open Days,
17 Carlton House Terrace, London SW1Y 5AW. Tel 020 7930 0914; Fax 020 7321 0180;
www.civictrust.org.uk

2001: A Pest Odyssey

No collection is safe from pests! 1–3 October 2001 British Library, London

English Heritage, the Science Museum, and the National Preservation Office (British Library) have joined forces to expose the silent creatures that thrive on materials found in museums, libraries, archives, and historic houses. Proven solutions and strategies for keeping collections safe will be presented by speakers from Europe, North America, Asia, and Australia. (The papers will be published as pre-prints).
The conference will include a reception in the Science Museum on Monday evening, 1 October, and a dinner/dance in the Great Hall at Eltham Palace, 2 October.
For further information, please contact: Belinda Sanderson, Information Officer, National Preservation Office, The British Library, 96 Euston Road, London, NW1 2DB.
elinda.sanderson@bl.uk

Timber Circle Conference

In the March issue, David Miles, Chief Archaeologist, reported on the excavation, removal, and analysis of the timber circle at Holme Next the Sea, Norfolk, radiocarbon-dated to Spring 2049 BC. A conference on the timber circle will be held in King's Lynn on Saturday, 11 November 2000. Free tickets are available by pre-order. For details, please contact The Tourist Information Centre, Tel: 01553 763044, Fax: 01553 777281.

Gilding

Approaches to treatment 27–28 September 2000

English Heritage and the UKIC Gilding Section are holding a conference on approaches to the conservation, restoration, and collection care of gilded materials, including furniture, frames, interior decorative schemes, paintings, metals, sculpture, and archaeological objects. The forum will lead to further understanding of variations in gilding treatments. The events include an evening reception and private view at Chiswick House on Wednesday, 27 September, to see the Chiswick tables recently conserved by English Heritage. The conference will take place at the Scientific Societies Lecture Theatre, London on Thursday, 28 September 2000.

For further details, please contact the UKIC office: Tel 020 7721 8721, Fax 020 7721 8722, www.ukic.org.uk

WEST DEAN COLLEGE

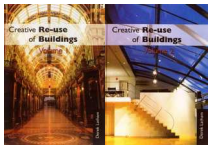
Near Chichester,West Sussex
Building conservation masterclasses

A collaboration in specialist training between West Dean College, English Heritage, and the Weald & Downland Open Air Museum, sponsored by the Radcliffe Trust
Courses for Autumn/Winter 2000
Conservation and repairs of stone masonry
BC3DI9, 5–8 September • Residential cost £545
Conservation plans and recording for repair
BC3D20, 26–29 September • Residential cost £545
Mortars for repair and conservation
BC2D6, 10–12 October • Residential cost £395
Cleaning masonry buildings
BC3 D21, 31 October–3 November
Residential cost £545
Advanced masonry repairs techniques
BC3D22, 14–17 November
Residential cost £545
Conservation engineering
BC2D7, 5–7 December • Residential cost £395
For further information, including non-residential costs, please contact the Building Conservation Masterclasses Coordinator:
Tel: 01243 818294/81 1301, Fax: 01243 811343,
e-mail: westdean@pavilion.co.uk

Book Reviews

Creative writing

Creative re-use of buildings Vols 1 and 2
by Derek Latham, 2000
Donhead Publishing £45 each or £80 set [1 873394 36 5;1 873394 37 3]



With the midsummer launch of English Heritage's latest schedule of Buildings at Risk, there could not have been a better time for Derek Latham to demonstrate in an inspiring, informative, and well-produced two volume set just how many exciting ways there are to put redundant properties back into beneficial use.
The format of before-and-after plans and photographs has been standard for a quarter of a century since the series of New life for old buildings/churches (DOE, 1977) and Sherban Cantacuzino's four volumes. I count at least twenty books on my shelf in this vein. But it is clear that many texts are out of print or long forgotten, and that well-illustrated expert guidance is still much needed at a time when, according to English Heritage, so many public grade I and II* listed buildings are at risk, their potential unrealised.
Latham is clearly a talented architect and these two volumes emphasise the essentially creative aspects of his profession's ability to find new uses for redundant shells – whether

stone tents for Girl Guides converted from Pennine hill farm shelter sheds or more ambitious commercial or municipal offices from empty textile mills. Many examples, including Latham's own studio offices in St. Michael's Church Derby, will be familiar from previous publications. But more topical examples are also included that show the effect of UK business reorientation through the conversion of high street banking halls into pubs and restaurants.

With twenty-one case studies, nearly four hundred black and white photographs, and eight colour plates in over four hundred pages, the two volumes present a detailed analysis of the process of achieving a successful project, with an inspirational wealth of ideas. Volume I deals with identifying appropriate uses, choosing forms of intervention (new design, traditional repair, replication), designing with clarity and sensitivity, and encouraging planners and developers. Volume II includes more case studies, with an index of building types.

Few overseas case studies feature in this essentially English survey (there is no mention of Cadw or Historic Scotland) though the title pays lip service to the North American market where the term 'adaptive reuse' has very precise meaning. One or two chapters read like space fillers, and I agree with other reviewers that Chapter 10 on materials and craftsmanship looks 'short and selective'. But these are the textbooks for the current decade and should be mandatory reading for all local authority, bank, and hospital trust chief executives, planners, developers, building preservation trusts, and the growing number of students interested in the field.

John Fidler

RIBA Head of Building Conservation & Research

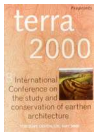
From 1984–86 John Fidler was English Heritage's first Conservation Officer for Buildings at Risk, a post created as a recommendation of the Montagu Report, 'Britain's Historic Buildings: a policy for their future use', British Tourist Authority 1981

Terra 2000:

Preprints of the 8th international conference on the study and conservation of earthen architecture, Torquay, Devon, UK, May 2000

edited by Nicola Sterry, 2000

James & James, £45 [1 902916 05 0]



In 1972, the first international symposium on the conservation of earthen architecture was held in Yazd and organised by the Iranian National Committee of ICOMOS. Subsequent symposia have been organised by others under the aegis of ICOMOS and have become a valued meeting place for specialists lo review the state of the discipline.

Following the reorganisation of the ICOMOS International Committee for the study and conservation of earthen architecture, begun during the fifth meeting in Rome (1987), and the creation of Project GAIA, the scope of the conferences has widened considerably: the sixth conference (Adobe 90, Las Cruces, USA) generated 77 papers; the seventh conference (Terra 93, Silves, Portugal) had 120 papers. Terra 2000, organised by English Heritage with the help of ICOMOS and the University of Plymouth, is the most recent conference, the 79 papers of which are included in this volume.

A recent review of the literature on scientific aspects of the conservation of earthen architecture has shown that 70% of it has been published within the framework of this series of conferences. *Terra 2000* is the latest contribution to the discipline.

The papers are organised according to five themes, each introduced by a keynote speaker:
Archaeological monuments and sites (16 papers)
Materials and craftsmanship (15 papers)
Conservation, repair, and maintenance (15 papers)
Continuity of tradition (17 papers)
Political, legal, and economic context (16 papers)
For the first time archaeology, including earthworks, has been given a prominent place, and this section is particularly useful for the light it sheds on methodological approaches to the conservation of archaeological sites: conservation management plans, backfilling practice, and documenting and monitoring earthen surface finishes (with glossaries for documentation and condition assessment). Other topics include the social impact of reconstruction actions, the history of treatment in relation to new conservation techniques, and the determination of rates of deterioration.
The materials composition papers cover analysis methods, such as X-ray diffraction, gas chromatography, mass spectrometry, particles size analysis, observation by electron microscope, Atterberg limits, linear shrinkage, loss on ignition. Papers on the characterisation of earthen building materials include energy consumption for the production of walls and thermal characteristics, thermal conductivity, diffusivity, specific heat, U value, and lag time. Behavioural characteristics are reported for walls submitted to compressive forces. The new field of testing the testing methods themselves is illustrated by a critical evaluation and comparison of erosion testing methods. Craftsmanship is viewed as being part of sustainable development, with case studies from Brazil, China, Cuba, Yemen, England, Germany, Italy, and Switzerland.
The section on conservation, repair, and maintenance includes the use of earthen construction in Barcelona by Antonio Gaudí, the Spanish architect, and reviews conservation activities in the city of JennÈ, Mali, architecture of the Dogon in Mali, friezes in Cardal, Peru, and individual structures in Brazil, Chile, Italy, Morocco, Portugal, and Zimbabwe. Also detailed studies are presented on seismic retrofitting systems, and the analysis of mechanical behaviour of cob structures.
The continuity of tradition has been given a section of its own and covers projects inspired by tradition or based on a technology transferred from one part of the world to another. Contemporary architectural projects are presented with a variety of newly developed building techniques. There are also directions suggested for future technological developments.
The importance of political, legal, and economic contexts received special attention during the conference and subjects included regional approaches, contributing to decision making, social endeavours, using building cultures, the role of the discipline, problems of social and cultural continuity, integration of traditional and contemporary applications, standardisation, networking, inventories, and education.
Terra 2000 gives a picture of the state of the discipline in 2000. This document should be read and used by anyone involved in the conservation of earthen architecture.

Mike Taylor

ICOMOS International Earth Committee, Sante Fe, New Mexico, USA

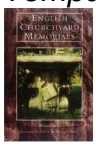
A companion volume by John Hurd and Ben Gourley, **Terra britannica: a celebration of earthen structures in Great Britain and Ireland***, was produced for Terra 2000 by ICOMOS UK with English Heritage. Covering a wide range of types of earthen structures from the monumental to the humble, this volume considers the historical and social aspects of earth construction in the main areas of distribution. Regional distinctiveness is examined and traditional building techniques explored, including the use of earth for building in the new millennium.*

Available from English Heritage and James & James, £14.99 [1 902916 13 1]

Pioneering survey

English churchyard memorials

by Hilary Lees with foreword by HRH the Prince of Wales, 2000
Tempus Publishing, £19.99 [0 7524 1441 0]



Graveyards have long been something that the British do particularly well. Their qualities have been regarded by foreigners as the perfect expression of our supposed northern melancholy. These days, however, the feeling tends to be one of depression: about the disintegration of monuments, the feeble quality of most modern memorials, and the breakdown of a tradition of care.

Hilary Lees, the author of earlier studies on churchyards in Gloucestershire, Wiltshire and Cornwall, has become something of a patron saint of churchyards. There is not a page here that doesn't have something of interest, and the colour and black and white photographs are excellent. But it is a long way from being the final word on this huge subject, and in no way supplants Fred Burgess's English Churchyard Memorials of 1962. Compared with the level of research devoted to the subject of Scottish, and, above all, New England tombstones, England has a long way to go.

It is a huge challenge to make sense of the many thousands of churchyard monuments that remain. Antiquarians tend to make a beeline for the church and ignore the multitude of stones that stand sentinel, hoping that a passer-by may read the inscriptions. The basic groundwork of studying, recording, and researching outdoor tombs is yet to be done, and in some ways a work of synthesis such as this is premature. Too often it lapses into a staccato survey, allowing no time for discussion or reflection. Architectural history used to consist far too often of descriptions of the formal components of buildings, without considering what made a building special, or gave it life; this pitfall applies here. Categorising tombs is difficult, given the range: but what is one to make of naming the genre of elaborate memorials 'monuments'? One would expect a longer book at this price, and on such a subject.

There is a useful appendix of all Grade I and II* listed crosses, hogbacks, mausolea and tombs. Of the latter, Gloucestershire possesses the overwhelming majority; Somerset, then Oxfordshire, Dorset, and Wiltshire follow well behind. Hilary Lees has visited all 254 highly graded monuments, and concludes that only two are in critical condition. So pioneering a survey, and so surprising a verdict, demands much more discussion that the two pages afforded it here. Churchyards require more investigation, more thought, and a lot more conservation work. This book, welcome as it is, is but a start.

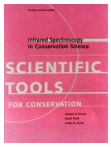
Roger Bowdler

Historical Analysis and Research Team

Full Spectrum

Infrared spectroscopy in conservation science

by Michele R Derrick, Dusan Stulik, James M Landry, 1999
Getty Conservation Institute (an imprint of Getty Trust Publications), £57.50 [0 89236 469 6]
Distribution (UK & Europe):Windsor Books International Tel 01865 361122



The Getty Conservation Institute is under new management with strong interests in developing a range of publications for the international conservation community to raise technical and scientific standards. This recent volume complements its older sister, *Thin-layer chromatography for binding media analysis* (Striegel and Hill, 1996) and should prove to be an enduring reference work for years to come.
According to the authors, the text deals with 'practical scientific procedures and methodologies for the practice of conservation' involving analytical techniques employing infrared spectroscopy (IRS). The information is directed towards new conservation scientists, conservators, and technical experts in associated fields.
Those in 'associated fields' perhaps make up the majority of the English Heritage Conservation Bulletin's readership, so I should explain that the IRS technique is used to determine the chemical structure of materials by measuring their absorption of infrared radiation. The spectrometer produces an IR beam that is split into two parts; one is directed at the sample, the other remains as a reference, and the intensities of the two are compared at each wavelength. This gives a spectrum depicting the material's unique absorption peaks plotted against wavelength or wavenumber. In this way historic protein-based paint binders such as gelatin, casein, and egg yolk can be identified or modern consolidant/adhesives such as Paraloid B-72 and polyvinylacetate (PVA) characterised.
This is a highly informative book describing the history of IRS; the theory of electro-magnetic radiation; advice on sample collection, preparation, and storage (tools, techniques, and the avoidance of contamination etc); infrared (IR) transmission and reflection measurements; the use of microspectraphotometers; advice and guidance on the interpretation of results; the use of signature libraries; hints on the identification of materials used in art and art conservation; case studies (identifying pigments, resins, and varnishes); lists of selected IR spectra reference collections and digitised libraries; and an extremely helpful list for the novice of basic reference spectra signatures for binders, waxes, and pigments. The 250-page book is well illustrated with black and white photographs, line drawings, graphs, and tables, also contains a glossary, a 22-page bibliography of 350 entries, and a list of suppliers of equipment and materials.
Alas, the supplier list is for the USA only. Perhaps the GCI could be persuaded to publish an addendum of other international sources which would make the volume that much more useful.

John Fidler

RIBA Head of Building Conservation and Research

Facts, trends, and statistics

The Heritage Monitor

edited by Max Hanna, 2000

English Tourism Council £23 [0 86143 229 0]
Also available from English Heritage

The Heritage Monitor – a yearly analysis of trends affecting England's architectural heritage – is a vitally important publication for all concerned with England's historic environment, from conservation specialists to those involved with the marketing and development of heritage tourism. Over the years it has earned a reputation as an invaluable source of information on conservation, tourism, and trends: the 24th edition – *The Heritage Monitor 2000*, based on information available by the end of May 2000 – is no exception.

The information is well-presented and includes a diversity of statistics not found elsewhere in a single volume. The breadth and geographic breakdown of the data for 1998–99 is to be commended, enabling close regional analysis of everything from the number of classified architectural resources and English Heritage grants, to visitor trends, scheduled monuments, and hotels in historic buildings by county.

The range of the main findings is impressive. Conservation topics, for example, include details of buildings at risk and historic gardens as well as the number of listed buildings where consent has been given for their demolition. Interestingly, the most vulnerable types of building in this respect are barns, chapels and non-Anglican churches, farms and farm buildings, and industrial buildings. The scheduling of ancient monuments has been greatly speeded up in the past five years, with at least six district councils having over 400 scheduled monuments each. The sensitivity and fragility of the historic landscape is discussed, as well as the number and diversity of awards available for conservation projects from bodies such as Europa Nostra, the Civic Trust, and the Royal Institution of Chartered Surveyors. There are statistics not only on the value of the grants allocated by English heritage, the Heritage Lottery Fund, and local authorities among others, but also on the way they are spent, allowing comparison with previous years. Another important issue discussed in this edition is the effect of development, such as significant growth in road traffic, on the historic environment.

The presentation of England's heritage tourism product is examined though analyses of historic properties and gardens open to the public, their facilities and special events, and heritage centres and trails. Lastly, trends such as visitor numbers, income generation, and admissions data are discussed. It is interesting, for example, to note that revenue from visitors to all historic properties in England rose by 4% in 1999, while revenue at English Heritage properties rose by 9%. Those involved in the presentation and operation of heritage attractions are thus given a solid base for understanding underlying trends in the marketplace. There are also quotations from over 80 heritage attractions whose performance has improved in the last year.

The Heritage Monitor 2000 is essential reading for everyone concerned with conservation, as well as the marketing and development of tourism. Its diversity of topics, from scheduled ancient monuments and conservation expenditure to interpretation and visitor trends, provides invaluable information about England's heritage – a vital national asset.

Sue Demetriadi

Central Planning

New from old

Industrial buildings: conservation and regeneration
edited by Michael Stratton, with introduction by HRH The Prince o f Wales, 2000
E&FN Spon, £45 [0 419 23630 9]

The timing of this book could not be better. Regeneration is now high on the conservation – and indeed political – agenda as we recognise the potential of conservation to address fundamental social issues by improving the quality of life in run-down areas. Industrial buildings often lie at the heart of such areas, empty and derelict in the midst of a changing economy. Such buildings are now prime candidates for conversion and re-use, whether as offices, commercial spaces, workshops, galleries, 'loft style living', or a mixture of any of these. It is the re-use of such buildings that is often the first 'act of faith' needed to act as a catalyst for regeneration.

Entrepreneurs, academics, architects, and regeneration organisations tell us what has been done and how it was done. Michael Stratton places adaptive re-use in a broader context, reminding us that 'make do and mend' has long been part of industrialisation. He reviews conservation philosophy and ethics, public policy and funding regimes, and changing approaches to buildings. Fred Taggart distils the experience of Regeneration Through Heritage while Nicholas Falk draws on the lessons of URBED. Bennie Gray provides a blunt, no-holds-barred account of making things happen, mixing his delight in old buildings with some trenchant remarks. Stratton reviews the role of museums, while Bo Ohrström and Philip Todd provide lessons from Sweden and Germany. Finally, John Worthington considers whether future regeneration can be part of a bigger canvas.

The papers are full of practical wisdom. We are taken step by step through the process of making things happen, from that gut-wrenching first moment through the basic stages of understanding the building, bringing people together, raising money, and actually making things happen on the ground. There are tips on everything from feasibility studies to running an action plan meeting.

But the real value of the book is that it shows what can be done. The conservation of an industrial building is a major project. The sites are large and require commitment, vision, resources, and a special kind of entrepreneur. By presenting case after case in the papers and the database, this book shows that such projects have been tackled many times over. Anyone working with a cautious local authority, who would rather flatten a problem than address an opportunity, should bring this book along.

There are also lessons for the professionals. Learn from experience abroad and make better use of tax regimes, pleads Nicholas Falk. Help reduce risks for developers by providing greater certainty about buildings through feasibility studies and planning briefs. Think strategically: sometimes the key to successful regeneration of an area may lie in infrastructure provision rather than individual buildings. Rick Ball uses data on empty properties and what keeps them empty to remind us to look at the bigger picture. It is salutary that several of the entrepreneurs cite patience as vital to successful regeneration! Oh, and we need to communicate better. 'Not many of these specialists speak the same language', says Bennie Gray, tartly.

Michael Stratton died as he was completing this project. His warmth, energy, curiosity, and driving enthusiasm permeate much of a book that above all shows what can be achieved with faith and passion. 'Yeah, go for it!', he might have said.

Kate Clark

Head of Historic Environment Management

New Publications from English Heritage

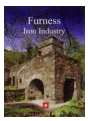
Dangerous Energy

The archaeology of gunpowder and military explosives manufacture
Wayne D Cocroft

This fascinating book provides a framework for identification, interpretation, and conservation of the remains of the military explosives industry. Key state or private sites, often cloaked in secrecy are here described and placed in their historical contexts and chronological framework, based on the former Royal Commission on the Historical Monuments of England's survey of the internationally important Royal Gunpowder Factory at Waltham Abbey, Essex.
The development of gunpowder manufacture from the Middle Ages to its effective demise after the First World War is examined in detail.
DATE OF PUBLICATION **September 2000** PRICE **£45** ISBN **1 85074 718 0** PRODUCT CODE **XC10854**

Furness Iron

The physical remains of the iron industry and related woodland industries of Furness and Southern Lakeland
Edited by Mark Bowden



Furness and the neighbouring parts of southern and western Cumbria had a lively and significant iron industry in the 18th and 19th centuries, growing out of a tradition of ironworking stretching back to the medieval period and probably earlier. Unlike the similar iron-rich regions of the Weald and the Forest of Dean, Furness has not received the attention it deserves as a cradle of this vital industry. The Royal Commission on the Historical Monuments of England – now merged with English Heritage – has compiled a record of the best preserved and most representative of these buildings, sites, and landscapes, using aerial photography, ground photography, and detailed analytical survey. This study will be of particular value to those interested in the history of the Lake District, industrial archaeology, and the preservation of the industrial heritage and its landscape context.
DATE OF PUBLICATION **September 2000** PRICE **£9.95** ISBN **1 873592 47 7** PRODUCT CODE **XC20045**
Orders may be placed through our website, **www.english-heritage.org.uk**, or by contacting English Heritage Postal Sales, Knights of Old Ltd, Kettering Parkway, Kettering, Northampton NN15 6XU, Tel 01536 533500 (24-hour service), Fax 01536 533501

The Birmingham Jewellery Quarter

An architectural survey
John Cattell, Sheila Ely, and Barry Jones

The Birmingham Jewellery Quarter is remarkable for its dense concentration of converted houses, factories, and specialist buildings – a particular combination of structures

associated with jewellery and metalworking apparently unmatched anywhere else in the world. This survey describes the development of the Quarter and the various building types it contains. It demonstrates the unique nature of the area, emphasising the value of the buildings that survive, as well as discussing the fascinating variety of industrial processes carried out there.
DATE OF PUBLICATION **Spring 2001** PRICE approximately **£40** ISBN **1 873592 48 5**, PRODUCT CODE, **XC20043**

Understanding England’s Industrial Heritage

A list of publications

English Heritage has long fostered research on industrial archaeology and the form Royal Commission on the Historical Monuments of England (RCHME), which merged with English Heritage in 1999, has an impressive track-record of industrial publications over more than two decades. This new list is both a bibliography of past publications and catalogue of current and forthcoming publications, including guidance booklets, policy statements, monographs, and a range of works for specialists as well as general readers.
DATE OF PUBLICATION **September 2000 FREE PUBLICATION** PRODUCT CODE **XH20160**