

KEY INDUSTRIAL DESIGNATED HERITAGE SITES

This document provides an overview of what type of industrial site each area of England is most famous for and provides some examples of those that are best known, both by locals and in terms of their historical and national significance.

EAST MIDLANDS

The region has a wide variety of sites ranging from the lead mines of the Peak District and the collieries of the East Midland coalfield to the textile mills and workshops of the Derwent valley, Nottinghamshire and Leicestershire and the renowned boot and shoe factories of Northamptonshire.

Derwent Valley Mills World Heritage Site, Derbyshire

The first successful water powered mechanisation of the textile industry was achieved in 1721 at the Lombe Brothers silk mills at Derby and even more significantly by Richard Arkwright with the water powered mechanisation of the cotton industry at Cromford. The subsequent development of the factory system changed society and the role of the mills has been recognised by the creation of a World Heritage Site stretching from Matlock Bath to Derby. Many of the most significant sites survive including Arkwright's first mills at **Cromford Mill** and his associated village, his **Masson Mill**, the Strutt family mills and settlements at **Belper and Milford** and the Evans family mills and settlement at **Darley Abbey**.



Nottingham Lace Market

Nottingham was the centre of the East Midlands lace industry and a spectacular commercial precinct developed in the mid 19th century in the town.

Ruddington Framework Knitters Workshops, Nottinghamshire

Domestic based industry was a vital component of the textile industry and the workshops at Ruddington have been preserved as a museum to celebrate their significance.

Magpie Mine, Sheldon, Derbyshire

One of the best preserved sites of Peak District lead mining industry with remains dating from two centuries of mining.

Papplewick Pumping Station, Nottinghamshire

This fine ornate Victorian Engine house contains two beam engines of 1884 in a lavishly ornamented setting of stained glass windows and filigree decoration.



Snibston Colliery, Leicestershire

Now part of Snibston Discovery Centre, the colliery closed in 1983 and its buildings are a rare survival of the 20th century coal mining industry.

Bestwood Winding Engine, Nottinghamshire

Built in 1876 for the Bestwood Coal & Iron Company, the Winding House with its Headstocks is an unusually ornate building for a British colliery. Recently restored by volunteers, it contains the country's sole surviving example of a twin cylinder vertical steam winding engine.

Pleasley Winding Engines, Nottinghamshire

Two steam winding engines of 1904 and 1922 have been preserved with their headstocks but their future is still uncertain.



Middleton Top Engine, Wirksworth, Derbyshire

The Cromford and High Peak Railway opened in 1831 and had eight stationary winding engines to surmount inclines of which only this one, a Butterley Company beam engine of 1829, survives.

Derby Round House, Derby

Built in 1840 by the Midland railway, this 134ft diameter locomotive roundhouse is the earliest to survive. It and the adjoining railway workshops are incorporated into the new Derby College buildings.

Moira Iron Furnace, Leicestershire

Built c1804 alongside the Ashby Canal with a ramp across the canal to convey charging materials, the furnace had only a relatively short life and therefore is one of the best examples of an early 19th coke fired blast furnace.

Foxton Canal Incline and locks, Leicestershire

This flight of 10 narrow locks built in 1812 on the Grand Union Canal were supplemented in 1900 by a 307ft long, steam powered, inclined plane by which boats floating in tanks could surmount the 75ft difference in height. The plane only operated for a dozen years and was dismantled in 1926 but is now a tourist attraction.

All Saints Brewery, Stamford, Lincolnshire

The Melbourn Brothers Brewery was re-equipped in the late 19th century after a fire and retains its steam engine and early mash tun. Open to the public, it now produces fruit beers.

Sibsey Trader Windmill, Lincolnshire

Built in 1877, six storeys with complete gear, sails and fantail, this windmill still works today.

Sleaford Maltings, Lincolnshire

The largest range of maltings built by Bass c1900, these huge buildings have been disused for many years.



EAST OF ENGLAND

Though not noted as an industrial region, the East of England contains numerous significant industrial sites related to agriculture and the country's best array of windmills.

Royal Gunpowder Factory, Waltham Abbey, Essex

With a Government occupation from the late 18th to the late 20th centuries this factory witnessed military explosives production from waterwheel and steam driven powder mills through to nitro-glycerine works and rocket testing bunkers. It is now a magnificent site museum.



Garrets Long Shop, Leiston, Suffolk

Dating from c1853 this erecting shop is the main surviving building of the notable Garrett's agricultural engineering works.

Fakenham Gasworks, Norfolk

This is the sole surviving horizontal retort, hand fired gasworks in England. The site, preserved by a trust in the 1970s displays a range of gas installations dating from the mid 19th century to the 1950s.

Stretham Drainage Engine, Cambridgeshire

This large scoop wheel pump of 1896 is driven by an 1831 steam engine.

Bourn Post Mill, Cambridgeshire

This very early windmill possibly dating from the 17th century with 18th century alterations was restored in 1931 and is open to the public.

LONDON

As by far the largest city in the country, London had a huge industrial base ranging from shipbuilding and munitions factories to silk weaving and furniture

making at Spitalfields and Shoreditch, but now its most notable sites relate to transport, to public utilities and to the supply of food and drink.

London's Water Pumping Stations

London has one of the finest collections of steam powered water and sewage pumping stations in the world demonstrating the progression from beam engines of the early 19th century, as at **Kew Bridge**, through ornate mid 19th century beam engines at **Crossness Pumping Station** to triple expansion engines of the interwar period at **Kempton Park Pumping Station**.

Battersea Power Station

This famous landmark, designed by Sir Giles Gilbert Scott in the 1930s, was built in two stages either side of WW2. The 'A' Station was the first of a new generation of super generating stations and had only a single chimney at either end. The present appearance was achieved in 1953 with the completion of 'B' Station. The current mixed-use scheme for the site, which will entail the restoration and conversion of the grade II* listed station, is one English Heritage supports.



Three Mills, Bromley-by-Bow

The late 18th and early 19th century tide-mills at Bromley-by-bow are a reminder of the importance of flour milling in earlier times.

Ram Brewery, Wandsworth

London breweries in the 18th century were the most important in the country with massive porter tun rooms and the now converted Whitworth's Chiswell Street Brewery was the first to introduce steam power to brewing. Young's Ram Brewery, though recently closed, still retains its early steam engines and stable buildings.

London Railway Termini

Railways have contributed a magnificent collection of terminal buildings to the capital. Although London & Birmingham Railway's Euston, the earliest major station, was demolished in the 1960s, others are now enjoying a renaissance. Brunel's **GWR Paddington Station**, and Barlow's Midland Railway's **St Pancras Station** have been restored and revived. The extension and refurbishment of

Cubitts' **Kings Cross Station** is at the heart of the wider regeneration of the Kings Cross central lands.

Railway Round House, Camden

Designed by R Stephenson's drawing office, this magnificent 180ft diameter iron framed engine house of 1847 had a short railway life but has achieved a new lease of life as a multi-arts venue.

Tower Bridge

Possibly London's most famous industrial monument, built 1888-1894 to the architectural designs of Sir Horace Jones and the engineering designs of Sir John Wolfe Barry. The steel framed towers, disguised by masonry sheathing, contained steam driven hydraulic pumps, one set of which survives.



Thames Tunnel, Rotherhithe

Commenced in 1825 by Marc Brunel with his son Isambard Kingdom Brunel and finally opened in 1840, the pedestrian tunnel was never a success but it found a new life as a vital part of the London Underground system. A fine museum has opened in the engine house which celebrates the heroic Brunel undertaking.

Warehouses, West India Docks

These massive early 19th century warehouses now house the Museum of London Docklands.

NORTH EAST

The North East region is synonymous with the Great Northern Coalfield, steel making, shipbuilding and pioneer railways but these have only left slight footprints of once mighty industries. The Durham coalfield has more memorials to pit disasters than mining remains while the River Tyne is no

longer dominated by its shipyard cranes. There are, however, some very significant historic industrial sites including early railway remains of the Stockton and Darlington Railway, the Causey Arch and the Bowes Railway, colliery buildings at Woodhorn and Washington F Winder, the 18th century Derwentcote steel cementation furnace and the lead mines of the North Pennines. There is also the magnificent series of bridges over the Tyne, Tees, Tweed and Wear.

Kilhope Dressing Floors, Weardale, Durham

This crushing mill with its prominent waterwheel was built at the head of Weardale c1860 and its landscaping as a picnic site has revealed its extensive ore dressing floors with buddles.

Beadnell Limekiln, Northumberland

Limekilns were an essential adjunct to agricultural improvement and around the coast are notable examples where coal and limestone could easily be brought together. The group at the small harbour of Beadnell is owned by the National Trust.

Washington F Winder, Tyne and Wear

The pit at Washington was first sunk in 1770 and closed in 1968. Now these two centuries of operation are only commemorated by the 1888 winding engine and headstocks over its F shaft.

Woodhorn Colliery, Ashington, Northumberland

Now part of a country park, Woodhorn Colliery buildings with its two winding engine houses, headgears and workshops are the most extensive reminder of the Great northern Coalfield.



Ryhope Pumping Station, Sunderland

Constructed in 1868, the ornate Ryhope Pumping Station houses two magnificent 100 hp beam engines by R and W Hawthorn of Newcastle.

Derwentcote Steel Furnace, Hamsterley, Durham

A unique, stone built, 18th century steel cementation furnace which has been restored by English Heritage. There are extensive remains of associated furnaces and water driven forges in the valley bottom below and these have recently been investigated by Time Team.

Causey Arch and Bowes Railway, Springwell, Tyne and Wear

Built in 1727 by Ralph Wood to carry a colliery horse drawn waggonway over the Tanfield Beck, the Causey Arch is a spectacular monument to the prehistory of railways. It links to the system of early waggonways of which the later Bowes railway was part. Bowes Railway is the last railway line in the world to combine three methods of working – locomotives, stationary haulage engines and gravity incline. Designed by George Stephenson in 1826, it was eventually 15 miles long and a stretch over a mile long around the Springwell workshops and rope-hauled incline is preserved and operated by a trust.



Stockton and Darlington Railway, Shildon, Durham

The National Railway Museum outstation at **Shildon** is the gateway to several relics of the 1825 Stockton and Darlington Railway and its associated industry, including the **Brusselton Incline and Bridge, Timothy Hackworth's house** and engine works. Remains of the first iron railway bridge are to be found at **Gaunless** where the abutments survive (the bridge itself is at York NRM) and at Darlington where the elegant **Skerne Bridge** still carries trains and the **North Road Railway Station** of 1842 is converted to a museum.

Dunston Staiths, Gateshead, Tyne and Wear

Constructed in 1893 by the North Eastern Railway to load coal directly into vessels, these 1709ft long wooden staiths are the last great staiths on the Tyne. Restored as part of the National Garden Festival in 1990 they are once again disused and forlorn.



Tyne Bridges, Newcastle, Tyne and Wear

The short stretch of the River Tyne where Newcastle faces Gateshead is crossed by one of the finest collection of bridges in the country. Built at a height to allow river traffic and to enter Newcastle Central Station, Robert Stephenson's innovative two decked, iron **High Level Bridge** of 1848 towers above W and G Armstrong's **Swing Bridge** of 1876. Hydraulic powered, the 241ft long superstructure weighing 1450 tons is still swung on occasions. Downstream is the dramatic **Tyne Bridge** built by Dorman Long to designs by Mott Hay and Anderson and opened in 1928 and below that the beautiful tilting **Millennium footbridge** linking the Baltic Art Gallery and Sage to the Newcastle quays.



Union Suspension Bridge, Loan End, Northumberland

Designed by Captain Samuel Brown and built across the River Tweed in 1820 this was the first large suspension bridge in Britain.

Transporter bridge, Middlesbrough

This, the largest transporter bridge in the world, was built in 1911 over the River Tees by Sir William Arrol and Partners to replace a ferry between Middlesbrough and Port Clarence. 225ft high, it allows a river clear span 570ft broad. Its simulated dismantling in the television series *Auf Wiedersehen Pet* caused a temporary furore!

Royal Border Bridge, Berwick

Built by Robert Stephenson between 1847 and 1850, this 28 arched masonry faced railway viaduct over the River Tweed still carries the main railway line from London to Edinburgh.

NORTH WEST

Stretching from the plains of Cheshire to the Solway Firth the region encompasses a wide range of distinctive industrial landscapes. The south is dominated by the massive textile mills of East Cheshire, Greater Manchester and Lancashire and by its waterways, railways and docks focussed on Liverpool, the Mersey, the Ribble and the Lune. In the north, the metal mining of the Pennines and the Lake District and the associated furnaces and woodland industries have left an impressive legacy while the remains of coal mining are to be found across the region from the Cumbrian coast to Greater Manchester.

Stott Park Bobbin Mill, Finsthwaite, Cumbria

This bobbin mill, now owned and opened to the public by English Heritage, is the last of many hundred that thrived in Lakeland when the cotton industry was at its height. Built in 1835, it contains much of its 19th century machinery driven by line shafting and also its small horizontal steam engine.



Alderley Old Mill, Nether Alderley, Cheshire

An unusual early watermill belonging to the National Trust. Set into the mill dam it is a low stone built structure with two overshot waterwheels arranged in tandem.

Nenthead Mine, smelt mill and settlement, Cumbria

The extensive lead mining remains around Nenthead are witness to centuries of investment in what is otherwise an inhospitable landscape. On the hillside above the smelt mill there is a huge waterwheel pit which contained the wheel to drive the furnace bellows.

Duddon Furnace, Broughton-in-Furness, Cumbria

This, the most complete charcoal fired blast furnace in the country, was erected in 1736 and closed in 1867. Owned by the local authority it has been restored and is publicly accessible.

Lead Shot Tower, Broughton, Chester

The oldest of the three remaining lead shot towers in the country, the Chester shot tower built in 1799 stands 168ft tall. Molten lead poured through a sieve at the top of the tower solidified into spherical balls and was collected in a water tank at the bottom.

Astley Green Colliery Winder, Greater Manchester

All that remains of the huge Astley Green colliery are the entrance lodges, the headgear and most importantly the engine house containing a huge horizontal twin tandem compound winding engine built by Yates and Thom in 1912. An informal steam museum has developed around the headgear.



Haig Colliery and Saltom Pit, Whitehaven, Cumbria

Whitehaven was a major coal port from the 18th century onwards and has an exceptional array of coal mining remains dating from the 18th to the 20th centuries including Duke Pit Fan casing and Candlestick chimney on the hillside overlooking the harbour. The nearby Saltom Pit was the scene of undersea mining from 1731 while Haig Pit on the cliff top above it only closed in 1986 and retains its steam engine and headgear.

Ancoats Mills, Manchester

The Ancoats area of Manchester was very much the cradle of industrialisation from the late 18th century to the mid 19th century. The most noted of its huge steam driven cotton mills lining the Rochdale Canal have survived but the notorious neighbouring housing and associated engineering works have gone.



Queen Street Mill, Harle Syke, Burnley

Queen Street Mill, built in the late 19th century and partially rebuilt in 1918 following a fire, is the last surviving operating steam driven weaving mill in the world. Powered by a Lancashire boiler, a horizontal compound steam engine drives Lancashire looms in the large weaving shed.

Quarry Bank Mill, Styal, Cheshire

Built by Samuel Greg from 1784 onwards, the textile mill complex at Styal is one of the finest in the country. Now owned by the National Trust, this model industrial development with an Apprentice House and workers' housing has been restored as a working museum to the textile industry.

Higher Mill, Helmshore, Lancashire

Now maintained as a museum to the textile industry, the 1789 Higher Mill has water driven fulling stocks and tells the woollen industry story, while Whitakers' Mill houses a spinning floor and houses a nationally important collection of textile machinery.

Silk Museum, Paradise Mill, Macclesfield

One of three museums in Macclesfield dedicated to the silk industry, Paradise Mill was built c1860 and houses a unique collection of restored Jacquard hand looms.

Lion Saltworks, Marston, Northwich, Cheshire

Started in 1894, by the 1960s the Red Lion Salt works were the last open pan saltworks in the country but closed in 1986. They are currently being restored by a preservation trust.

Anderton Lift, Northwich, Cheshire

Transferring canal boats between the Trent and Mersey Canal and the River weaver 50ft below, this lift was completed in 1875 to the designs of Edwin Clark and E Leader Williams. Originally hydraulically operated, it was converted to electric power counter-balanced operation in 1908 and then following a period of disuse in the 1980s and 1990s was converted back to hydraulic power operation by British Waterways.



St George's Quay and Lune Aqueduct, Lancaster

The 18th century **Custom House** and the **warehouses** lining the River Lune at St George's Quay bear witness to the former importance of Lancaster as a port and give a glimpse of what other ports such as Liverpool must have been like in appearance before the development of wet docks. The nearby **Lune Aqueduct** was completed by John Rennie in 1797 and is one of the finest masonry aqueducts in the country.

Bridgewater Canal and Barton Aqueduct, Greater Manchester

The Bridgewater Canal completed in 1764 from the Duke of Bridgewater's **collieries at Worsley** to the **Castlefield Basin** in Manchester was the most influential early canal in the country and the basin was lined by warehouses. The canal crossed the River Irwell by the Barton Aqueduct and when the Manchester Ship Canal was built in 1894 this was replaced by hydraulically operated **Barton Swing aqueduct** with its 235ft long steel trough.

Liverpool and Manchester Railway

Built by George and Robert Stephenson and opened in 1830, the Liverpool and Manchester Railway ushered in the railway age. It connected Liverpool, the country's second port, with the country's fastest growing industrial city and pioneered many railway structures many of which have survived including **Liverpool Road Station and Warehouse** Manchester, the **Sankey Viaduct**, and **Edge Hill Station, Liverpool**.

Liverpool World Heritage Site

Liverpool was inscribed as a World Heritage Site as the supreme example of a maritime city and its docks are testimony to that claim. Jesse Hartley's Albert Dock, opened in 1845, is the finest example of a 19th century wet dock in the world while the nearby **Canning Graving Docks** and **Waterloo and Wapping Warehouses** are also of note. North of **Pier Head** with its magnificent 'Three Graces', Stanley Dock, Victoria Clock Tower and Salisbury Dock lie derelict, awaiting re-use.



SOUTH EAST

Surrounding the country's capital, the region supplied London with both food and military supplies and protection. The hop farms of Kent supplied London's brewing industry while the military role has left very significant industrial remains, such as the gunpowder works at Faversham in Kent and Chilworth in Surrey, and at Waltham Abbey (Essex) while the ring of Royal Dockyards from the Thames to the Solent contains some of the most important industrial sites in the country.

The Royal Dockyards

The Royal Dockyards were the largest industrial concerns in the 18th century and throughout the 19th century expanded to immense sites containing some of the most significant industrial buildings in the country. At **Portsmouth**, in addition to the huge warehouses and boatstores now housing museums, there are the **Block Mills** where Marc Brunel pioneered mass production. In Kent, at **Chatham Historic Dockyard** there are Marc Brunel's sawmills and foundries, lead mills and the magnificent **Ropery** which still produces ropes in the traditional way. At **Sheerness** the revolutionary iron framed **Boatstore of 1858-60** heralded in a new building form more fully developed in the 20th century.

Faversham Gunpowder Works, Kent

For four centuries, Faversham was a major centre of gunpowder manufacture and the **Oare Gunpowder Works** are the best preserved in the country after the Royal Gunpowder Works at Waltham Abbey. The nearby restored 18th century water powered **Chart Gunpowder Mills** were part of the earlier Royal Gunpowder works.

Farnborough aviation wind tunnels, Surrey

The advent of aerial warfare in the 20th century required entirely novel buildings to develop aircraft such as the wind tunnels at Farnborough.

Hook Norton Brewery, Oxfordshire

Built circa 1890 this is one of the finest examples of a traditional steam tower brewery still operating.



Bursledon Brickworks, Hampshire

Now functioning as a museum, this is the only preserved steam driven Victorian brickworks in the country.

Whitchurch Silk Mill, Hampshire

This handsome early 19th century brick built mill was originally driven by the waterwheel but silk is still woven by electric power.

The Net Shops, Hastings, Sussex

These tall clinker built net sheds show Scandinavian influence in their construction and are unique to Hastings.

Scotney Castle Hop Farm, Tunbridge Wells, Kent

In the estate of the National Trust's Scotney Castle is one of the few remaining operating traditional hop farms whose oast kilns produce hops for locally produced ale.

SOUTH WEST

The South West Region stretching from Lands End to Gloucester and Swindon contains a staggering wealth and diversity of historic industrial sites. These range from the metal mines of Cornwall and Devon and the mills of the West Country textile industry to the magnificent structures and buildings on the region's canals, railways and docks.

The Cornish Mining World Heritage Site

This encompasses nine mining districts including the spectacularly sited **Levant and Bottalack Engine Houses**, the steam engines at East Pool, the **Geevor Mine and Dressing Mill**, and the **Tolgus Tin streaming works**



China Clay Works around St Austell, Cornwall

The lunar landscapes created by the china clay industry are familiar from the Eden project and the **Wheal Martyn Museum**, Carthew preserves a typical 19th century water wheel powered china clay dry.

Stanley Mill, Kings Stanley, Gloucestershire

Rebuilt as a fireproof mill in 1813, the grade I Stanley Mill has the finest internal cast iron framing in the country.

Coldharbour Mill, Uffculme, Devon

Restored as a working museum to the textile industry, the former Fox Bros mill has a waterwheel at one end and a steam engine at the other.



Tuckers Maltings, Newton Abbott

One of only two operating traditional floor maltings in the country, Tuckers is also a working exhibit open to the public.

Palmers Brewery, Bridport

Bridport, well known for its legacy of buildings relating to the flax and hemp and rope making industries, also has a brewery of great interest with a waterwheel and a steam engine and part of the brewery is thatched.

Finch Foundry, Sticklepath, Devon

A unique water-powered forge which produced sickles, scythes and spades. Open to the public through the National Trust.

Kennet and Avon Canal

Completed in 1810 to connect the rivers Kennet in Berkshire and the Avon in Somerset and provide a waterways link from Bristol to London, the Kennet and Avon Canal contains some of the most important canal structures in the country. These include the beam engines at **Crofton Pumping Station**, the water driven **Claverton Pumping Station** designed by John Rennie, the impressive **Dundas and Avoncliffe Aqueducts** and the cutting through **Sydney Gardens** in Bath with its cast iron bridges dating from 1800.

Great Western Railway

Built by Isambard Kingdom Brunel to connect London to Bristol and opened in 1841, the GWR has some of the finest railway structures in the world. These include the **Box, Middle Hill and Twerton Tunnels** with their magnificent portals, the **Sydney Gardens Cutting** (possibly the most attractive urban railway landscape in the country), the old **Temple Meads Station** with its magnificent roof and the **Swindon Railway Works and Railway Village** the finest surviving railway engineering works and settlement. The line from Paddington to Bristol may be electrified in the near future. Brunel's lines extended to Cornwall with the dramatic **Royal Albert Bridge**, Saltash, crossing the Tamar.



Great Western Dock with ss *Great Britain*, Bristol

Built by Brunel to construct his revolutionary screw driven iron hulled vessel which has been magnificently restored, this dock is also now home to the Brunel Institute.

Clifton Suspension Bridge, Bristol

Brunel started construction of this bridge over the Avon Gorge in 1836 but funds ran out in 1840 and the bridge was only completed as a memorial to Brunel in 1864.

Gloucester Docks

The Gloucester and Sharpness Canal was completed in 1827 to link Gloucester to the Severn Estuary and allow vessels of 750 tons to avoid the treacherous stretch of the Severn below Gloucester. As a basin where cargoes needed to be trans-shipped it is surrounded by multi-storey

warehouses which were once threatened with demolition but have now been restored to other uses.

WEST MIDLANDS

From the 18th century, the West Midlands century was truly the workshop of the world. The iron and steel works of the Black Country and the Ironbridge Gorge supplied the materials for a vast range of engineering industries while the workshops of Birmingham, Wolverhampton, Walsall, Coventry and the surrounding areas produced a bewildering range of smaller goods – guns, locks, brassware, textile and leather goods and jewellery. Carried by pioneering canals and then railways, these, and the products of the region's potteries, glass and ceramic works, supplied a global market. A rich legacy of these industries and their transport infrastructure has survived in Birmingham, in the Potteries and at the Ironbridge Gorge World Heritage Site.

The Ironbridge Gorge World Heritage Site, Telford

Incorporating 35 historic industrial sites, the World Heritage Site status recognises the pioneering role this area played in the development of industrialisation and the 10 museums run by the Ironbridge Gorge Museum Trust attract over half a million visitors a year. Amongst the key sites are the **Iron Bridge** itself, **Coalbrookdale Furnace**, **Blists Hill** with its furnaces, mines and re-erected buildings, the **Hay Incline** and **Coalport China Works**.



Chatterley Whitfield Colliery, Stoke on Trent

Developed from the mid 19th century, this extensive collection of pithead buildings achieved fame in the 20th century as the first pit to produce a million tons of coal. Though the coal mining museum established in the 1970s is closed, the colliery buildings are still being gradually restored and converted to other uses.

Ditherington Flax Mill, Shrewsbury

Built in 1797 as a flax mill, this was the first textile mill in the world to have an internal fireproof iron frame. Latterly used as a maltings, it was acquired by English Heritage who is working on a long-term plan to find a new use for the building and restore it.

The Potteries, Stoke-on-Trent

The home of the English china industry, Stoke once had over a thousand bottle kilns but only a few remain as at the **Gladstone Pottery Museum** in Longton. Other sites include Middleport Pottery a complete working traditional pottery firm and the steam powered Bone and Flint mills at Etruria Industrial Museum.

Birmingham Jewellery Quarter

The best preserved industrial craft centre in the country the Jewellery Quarter stretches northwards from St Paul's Square. **The Museum of the Jewellery Quarter, Vyse Street**, is housed in a former jewellery workshop while **J W Evans Silver Works in Albion Street**, a superb survival of the silver and plate works industries, is owned by English Heritage who has restored it.



Stuart Crystal Glass Cone, Stourbridge

The preserved, 87ft high, late 18th century glass cone is one of the few remaining glass cones in the country.

Stourport Canal Basins, Stourport-on-Severn

Developed from 1768 onwards, as the river port of Brindley's Staffordshire and Worcester Canal, the basins still present a thriving canal scene.

Black Country Museum, Dudley

The re-erected buildings representative of the industries of the Black Country are clustered around an original canal basin which gave access to the Dudley canal tunnel and its limestone quarried caverns and lime kilns.

Longdon on Tern Aqueduct, Shropshire

Completed in 1796, this was Telford's first experiment in the use of cast iron for a canal aqueduct.

Engine Arm Aqueduct and Galton Bridge, Smethwick

Telford's mastery of the use of cast iron as a structural and decorative material is demonstrated by these Birmingham Canal structures.

Chirk Aqueduct

This is Telford's cast iron lined aqueduct over the Cheriog Valley and part of the Pontcysyllte World Heritage Site.

Curzon Street Station

The 1838 northern terminus of the London and Birmingham Railway - Birmingham's counterpart to the Euston arch. Though restored some years ago it now stands empty.

YORKSHIRE AND THE HUMBER

The region was one of the Industrial Revolution's hubs of industry and contains a great variety of historic sites – lead, iron ore and coal mining, textile mills, metal working and engineering, canals railways and docks. The Pennine lead mines have left an extensive legacy of engine houses, smelt mills and dressing floors while Elsecar Engine and Caphouse Colliery are two of the most important monuments to the coal industry in the country. The heritage of the textile industry dominates West Yorkshire with a World Heritage Site at Saltaire, the massive Manningham Mill, Armley and Marshall's Mills in Leeds, the warehouses of Little Germany in Bradford and the Halifax Piece Hall. The iron and steel industry brackets the region with Teeside in the north to Sheffield, Rotherham and Doncaster in the south where there are also notable metal working and engineering sites. The canals and docks that greatly facilitated the growth of these industries have left an equally impressive legacy.

Grassington Moor lead mining landscape, North Yorkshire

The extent and impact of lead mining in the Pennines can be gauged in the Grassington Moor landscape with its smelt mills, slaghearth, elaborate flue systems and chimney.

Elsecar Engine, Engineering works and Village, South Yorkshire

The Newcomen Steam Engine is the only such engine in the world to survive on its original site. Dating from 1795 it worked until 1923 and was last steamed in the 1950s. The engine pumped from a coalmine owned by the Earl Fitzwilliam who had an associated workshop complex and settlement built in the 19th century.

Caphouse Colliery, Wakefield

Now home to the National Coal Mining Museum for England, Caphouse Colliery and its adjoining Hope Pit constitute one of the most important industrial heritage sites in the country. Based around a typical steam driven 19th century coal mine, the museum offers unique underground tours to galleries 140 metres below.



Abbeydale Forge and Industrial Hamlet, Sheffield

A unique industrial complex based round a steel and scythe works dating from the late 18th century. It comprises a crucible steel furnace and pot shop, water driven tilt forge, grinding and boring shops, hand forges and offices, warehousing and housing.



Wortley Forges, South Yorkshire

The river valleys around Sheffield contained numerous water driven forges such as Wortley Top Forge which though much earlier in foundation specialised in forging railway axles in the 19th century with a helve hammer worked by a waterwheel.

Darnall Steelworks, Sheffield

Sheffield's pre-eminence in the cutlery industry was based on its crucible steel production and Darnall is now the only surviving example of a large crucible works.

Marshall's and Armley Mills, Leeds

Leeds, as the regional capital of Yorkshire, had a wider range of industry than many of its neighbouring towns which were predominantly textile towns, but it still had very significant textile mills itself. Though many have gone, Armley Mill which houses the industrial museum preserves some of Benjamin Gott's early fireproof mill buildings while several of Marshall's noted flax mills survive south of the city centre

Manningham Mills, Bradford

Built by Samuel Lister from the 1870s, these architecturally impressive silk mills in their heyday were the largest in the world. Dominating a ridge above Bradford with a beautiful park and museum gallery below, they are now being converted for housing.

Saltire, Shipley, West Yorkshire

Built by Titus Salt from 1851 onwards, and intended to be a model of better working conditions, Saltire Mill and its associated settlement are one of the jewels of Victorian England and well worthy of their World Heritage status. The Mill was designed by Fairbairn with ornamental detail by Lockwood and Mawson whose influence was extended to the various institutional and domestic buildings in the settlement including terraces of houses, a magnificent church, a school, an Institute, almshouses and a hospital.



Piece Hall, Halifax

One of the very first industrial sites to be recognised as an ancient monument, this magnificent three-tiered court yard building dates from 1779 and provided a market for textile products of the surrounding area.

Leeds and Liverpool Canal

The Leeds and Liverpool Canal which provides a cross Pennine waterways link between the North and Irish Seas was finally opened in 1816 but was built in stages many of which are much earlier. Thus the **Bingley Five Rise Locks**, visually the most impressive staircase flight of locks in the country were completed in 1774 and many of the impressive **Warehouses** in Leeds around the junction basin between the canal and the Aire and Calder Navigation are also earlier.

Stanley Ferry Aqueduct, Wakefield

A virtuoso engineering achievement of the late canal age, this 155ft span aqueduct carrying the Aire and Calder Canal over the River Calder dates from 1839 and has its trough hung from a cast iron arch.

Goole Docks, East Riding of Yorkshire

Built from 1826 onwards as the port outlet of the Aire and Calder Navigation, Goole Docks developed into the largest inland canal port in the country. To facilitate its huge coal export trade, hoists were built to directly load the contents of 'Tom Pudding' coal barges into ships. A new town grew up around the docks and a waterways museum has recently opened.

Magna, Templeborough Steel Works, Rotherham

Housed in a former late 20th century arc furnace steelworks a Science Adventure Centre was developed at the millennium. The huge shed-like building is one of the few such structures to be publicly accessible and the simulated operation of the one remaining arc furnace is truly impressive.

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