

The Great Western World Heritage Site



Nomination for Inscription 2010

‘Brunel, the greatest pioneering engineer of his age, had helped to
forge the modern world’

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Introduction

‘The wisest and safest plan in striking out a new path is to go straight in the direction we believe to be right, disregarding the small impedimenta which may appear to be in our way to design everything in the first instance for the best possible results..... and without yielding in the least to any prejudices now existing..... or any fear of the consequences’. (Brunel)

It is said that the sign of greatness is the ability to inspire greatness in others. Isambard Kingdom Brunel’s most important legacy is the inspiration that he gives to future generations through his vision and sense of self belief.

During his life, Brunel created the first inter-city mainline railway, transformed ocean going travel and built some of the most magnificent man-made structures in Britain, most of which still exist today. They were ground-breaking and innovative for their age and being, in the main, accessible to the public, are still to marvel at today.

1. The Great Western World Heritage Site: The genesis of modern transport 2006 (English Heritage)

This report clearly made a very strong case for the inscription and should be given the due weight it deserves and not forgotten. English Heritage are advisors to the Government on the significance of heritage assets and their importance.

‘The Great Western Railway is regarded as the most complete early main line railway in the world. That it was one of the major achievements of the great engineer Isambard Kingdom Brunel is an important consideration’.

‘The proposed Great Western World Heritage Site is truly a remarkable monument to virtuosity in 19th century transport engineering in Britain and to Isambard Kingdom Brunel’s genius, and, as such, it is of outstanding universal significance’.

‘His leading role in the transport revolution of the 19th century, on land and sea, left an indelible mark on the British landscape and in the preserved SS Great Britain a supreme legacy of British maritime engineering prowess. Constantly questioning received wisdom, his colossal energy, bravery and determination to carry out projects on the largest scale to an extremely high standard set him apart from his rivals. Brunel was outstandingly a man of his times – the epitome of the heroic Victorian engineer and a true creative genius’.

A copy is enclosed for convenience.

2. 'Railways as World Heritage Sites'

'Railways as World Heritage Sites' by Anthony Coulls examined the inscription of railways as World Heritage Sites. The Great Western Railway was included as one of the cases.

'Above all the GWR is as an excellent demonstration of how the criterion of works illustrative of genius may be applied in many ways. The railway was dominated more than any other in Britain, by the vision of just one man, Isambard Kingdom Brunel'.

'Economic considerations were very much part of the planning of the GWR. These, too, were developed in the grand style. Brunel intended that the railway would not only join London and Bristol but would also form part of a link between London and New York, employing iron steamships from Bristol. Transatlantic trade would be encouraged by the new link. This was socio-technical system building of the highest order, and Brunel's vision goes part way to explain the willingness of the GWR's backers to put forward the very large financial sums needed for the line's construction: their livelihood would benefit from the new railway'.

'...the Great Western is likely in the future to produce many dilemmas as modern requirements come to be reconciled with the desire to produce many dilemmas as modern requirements come to be reconciled with the desire to ensure the survival of original features. These challenges are made less pressing than usual by the very fact that Brunel constructed an extremely well (perhaps over-) engineered railway with such a thorough attention to detail that much of it remains suitable for high-speed use today. As a complete and still operating entity, 'Brunel's Billiard Table' with gentle curves and lack of sharp gradients is a fine tribute to the man who designed and the men who built it'.

Conclusion

'Railways are among the most important of industrial locations worthy of designation as World Heritage Sites. The designation of a carefully selected number of outstanding sites would bring to greater prominence the many ways in which railways have contributed – and in many ways continue to contribute – to the social, economic, political, cultural, and technical evolution of almost every country around the globe'.

3. Comparison Railways

There are several distinctions between the GWR and other contemporary railways from the 'heroic age' of transport which make it the choice for inscription.

- The structures the length and breadth of the line remain virtually intact and still bear the hallmarks of Brunel's distinctive architectural design. In addition there are original Brunel structures along the length of the line which are still being statutorily designated and therefore the integrity of the line is considered to be higher now.
- The choice of a larger gauge led to greater clearance of all its over structures and thus during the evolution of modernisation, did not suffer radical alterations which affected the other lines.
- The GWR was and still is one railway company and this above all else has enabled it to maintain its distinctive identity.

- The GWR is the longest of the early inter-city main lines, is the most complete, and is still in use for its entire length. The completeness contrasts with the other early mainlines, such as the Liverpool & Manchester where only isolated elements survive and the London & Birmingham Railway which has lost its London terminus, has been greatly altered and has abandoned its original Birmingham terminus.
- The termini Paddington and Temple Meads are still in existence, albeit that the original Temple Meads no longer houses active platforms. It is, however, still part of the Bristol Temple Meads complex and is therefore still in context.
- Unlike the comparable railways, the GWR is ultimately the work and genius of one man throughout, Isambard Kingdom Brunel. He was personally involved and responsible for all aspects of the enterprise and insisted on the highest standards of workmanship throughout. He negotiated with the clients, designed the track layout and rolling stock, devised radical solutions to civil engineering problems, secured finance, and recruited, motivated and managed staff.
- Until the Great Western Railway, Bristol and London had their own times. The reduction in the travelling time between the two cities meant this became an issue and standard (GW) time was introduced.
- After Brunel travelled on the Liverpool & Manchester Railway he resolved that the ride on his railway should be smooth and comfortable. To this end the broad gauge was created. *'A railway designed by gentlemen for gentlemen'*.

Stockton & Darlington Railway

The Stockton & Darlington Railway opened in 1825 and ran between Darlington and Stockton on Tees and from Darlington to several collieries near Shildon. The line was initially built to connect inland coal mines to Stockton, where coal was to be loaded onto boats. It was also the longest railway at the time.

Conceived by wealthy local wool merchant Edward Pease the S&DR was authorised by Parliament in 1821 and was initially intended to be an ordinary horse-drawn plateway, which were then commonplace in the UK. However, George Stephenson persuaded Edward Pease, on the day that the Act received Royal Assent, to allow him to resurvey the route and work it, at least partly, by steam.

A new Act of Parliament was obtained approving Stephenson's changes to the route, and a clause added to permit the use of 'locomotive or moveable engines'. The Bill also included provisions for transporting passengers though, at the time, they were regarded as little more than a sideline.

The line was 26 miles in total, with two cable-worked inclines at the western end, joined by a short horse-worked section. From Shildon the line was relatively level through Darlington to Stockton. The line's structures included one of the first railway bridges. Designed by architect Ignatious Bonomi, the so called 'first railway architect', the Skerne Bridge in Darlington is the oldest railway bridge still in use today.

The S&DRs track gauge was required to accommodate the horse-drawn wagons used in the older wagonways serving coal mines. This influence appears to be the main reason that 4ft 8 ½ was subsequently adopted as standard gauge.

Steam locomotives were then a new and unproven technology, and were slow, expensive and unreliable. Many people weren't convinced that steam engines were a viable alternative to the horse. So at first, horse traction predominated on the S&DR, until steam could prove its worth. The first locomotive to run on the railway was Locomotion No 1 built at the Stephenson works.

The first steam-hauled passenger train ran in September 1825 and carried up to 600 passengers. The first passenger train was not fast, taking two hours to complete the first 12 miles of the journey. Most of the passengers sat in open coal wagons, but one experimental passenger coach, resembling a wooden shed on wheels and called 'The Experiment', carried various dignitaries. An experimental regular passenger service was soon established, initially a horse-drawn coach with horse provided by the driver.

Steam traction was expensive in comparison to horse drawn traffic, but it soon proved that it was viable and economic. Steam locomotives could haul more wagons, and haul them faster, so in a typical working day the expensive steam engine could haul more coal than the cheaper horse. It soon became apparent that mixing faster steam-hauled and slower horse-drawn traffic was slowing the operation down, and so as steam technology became more reliable, horse-drawn traffic was gradually abandoned.

By 1833, the S&DR had become entirely steam-operated, and it gradually began to resemble a modern railway. The S&DR company became the sole train operator on the line, parallel double tracks were built for trains travelling in opposite directions, timetables were established and a crude signalling system was established to prevent collisions. These methods of operation became standard on railways across the world.

The railway itself consisted of few engineering structures of note and very little remains of the overall railway. A cast iron bridge over the River Gaunless (now in the National Railway Museum in York), a stone bridge over the River Skene and the first railway operated engineering workshops in the world at Shildon, now part of the National Railway Museum. Only a few miles remain in use with most being dismantled in the 20th century. Remaining features include stone sleeper blocks and the Brusselton Incline and its engine house.

Liverpool & Manchester Railway

Opened in September 1830, the L&MR was the first main line railway to carry both passengers and goods, though it was primarily built to provide faster transport of raw materials and finished goods between the Port of Liverpool and mills in Manchester and surrounding towns. Huge tonnages of textile raw material were imported through Liverpool and carried to the textile mills near the Pennines where water and then steam power enabled the production of the finished cloth. The existing means of water transport, the Mersey and Irwell Navigation and the Bridgewater Canal, dated from the previous century, and were felt to be making excessive profits from the existing trade and throttling the growth of Manchester and other towns. There was support for the railway from the cities at either end, but opposition from the landowners over whose land the railway was proposed to pass.

In 1822 a committee was set up to promote the construction of a railway between the two towns. The first step was to survey the route. William James, one of the initiators of the Railway, took on this task, but initial progress was slow. In 1824, George Stephenson was appointed as Engineer and took over the surveying. As the engineer of the nearly complete Stockton & Darlington Railway and an experienced locomotive builder, Stephenson was an obvious choice. In February 1825, the Committee successfully petitioned Parliament for the introduction of a private bill. Unfortunately, close examination by the parliamentary committee revealed serious flaws in Stephenson's survey and the Bill was withdrawn. Stephenson was replaced by George and John Rennie. The second Bill was introduced in February 1826, approved by Parliament and given Royal Assent in May.

In spite of the failure of his survey, George Stephenson was appointed as Chief Engineer to the L&MR Company. Construction work began in the summer of 1826.

Although the land between Manchester and Liverpool is fairly flat, the 35 mile line was an engineering achievement for its time. The route involved about nine miles of embankment, 13 miles of cutting and the construction of 63 bridges, all of which were built of brick or masonry, with one exception: the Water Street Bridge at the Manchester terminus. A cast iron beam girder was used here to save headway in the street below the line. The most dramatic feature of the railway was the 60ft high nine arch Sankey Viaduct, designed by Jesse Hartley. However the biggest challenge was the 4 mile crossing of Chat Moss, a 5000 acre stretch of peat marsh. The construction of this stretch of track took three and a half years.

At first, the directors of the Liverpool & Manchester Railway Company were in a quandary about hauling trains either using stationary engines, located at intervals along the line, or locomotives. To assist them in reaching a decision about this dilemma, they decided to hold a competition where the designers of the winning locomotive would be awarded the sum of £500. The idea behind this was that if one of the locomotives was good enough, then it would be the one used on the new railway. The competition, which became known as the Rainhill Trials, was held in October 1829. The winner was the infamous Rocket by Robert Stephenson.

Initially trains travelled at 17 miles per hour, due to the limitations of the track. Drivers could, and did, travel more quickly, but they would be reprimanded. It was found that excessive speeds could force apart the light rails, which were set onto individual stone blocks without cross ties.

The original L&MR line still operates as a secondary line between the two cities. Although a lot of the original railway still exists in use, the original termini were soon bypassed. The Manchester Museum of Science and Industry now occupies much of the former Liverpool Road Station site, which was built as the Manchester terminus of the L&MR and Liverpool Crown Street, the original Liverpool terminus was closed in 1836 and has since been demolished and is now a landscaped park. Most of the original structures that remain are bridges and the Sankey Viaduct, but there are few early buildings still in existence. The skew bridge over the Irwell in Manchester remains on a disused section of line and the 1836 station at Edgehill has been restored.

The London & Birmingham Railway

The London & Birmingham Railway was an early railway company from 1833 to 1846 when it became part of the London & North Western Railway.

The 112 mile railway line which the company opened in 1838 between London and Birmingham was the first intercity line to be built into Lond. It is now the southern section of the West Coast Main Line.

The line was engineered by Robert Stephenson. It started at Euston Station in London and on to Birmingham where it terminated at Curzon Street Station which it shared with the Grand Junction Railway, whose adjacent platforms gave a link to the Liverpool & Manchester Railway and allowed through rail travel from London to those cities.

The company's first application for an Act of Parliament to construct the line was rejected in 1832, due to pressure from landowners and road and canal interest. However in May 1833 a second act was approved and the line received the royal assent. Construction began in November of that year.

The line had been planned to open at the same time as the Grand Junction Railway which entered Birmingham from the north. However great difficulty in constructing the Kilsby Tunnel in Northamptonshire delayed the opening.

The first part of the line between Euston Station and Boxmoor (Hemel Hempstead) opened on 20 July 1837. The line was not finished in time for the coronation of Queen Victoria on 28 June 1838, but aware of the lucrative traffic the event would generate, the company opened the north end of the line, between Birmingham and Rugby, and the south end from London to Bletchley with a stagecoach shuttle service linking the two parks to allow through journeys to London. The line was officially fully opened on 17 September 1838.

The locomotive workshops were established in 1838 at Wolverton, roughly halfway between the two termini at London and Birmingham. These workshops remained in use as a manufacturing facility up until the 1980s; today just a few parts of the original Wolverton railway works are used solely for rolling stock maintenance and repair.

In 1948 it became part of the West Coast Main Line as it is know today. The major change to the line during this period was electrification, which was carried out during the mid 1960s as part of BR's Modernisation Plan.

Neither of the L&BR's original termini, both designed by Philip Hardwick, has survived in its original form. Curzon Street in Birmingham closed to passenger traffic in 1854 (the original entrance building remains) when it was replace by New Street Station and the original Euston Station in London was demolished in 1962 to make way for the present structure which opened in 1968.

Some features remain such as the Kilsby, Stowe Hill and Linslade Tunnels, Weedon and Brandon Viaducts, the Blisworth Arch and the Adderly Park Bridge but it has suffered rather more in adaptation to modern traffic and urban redevelopment. Electrification has affected many of the structures on the line, its terminus at Euston with its Doric Arch was demolished in 1962 and its smaller northern counterpart the entrance building at Curzon Street, Birmingham survives in isolation, long since severed from the railway.

4. Public Opinion and Celebrations

Brunel is held in tremendous affection by the general public. In 2002, the BBC held a public competition to determine who, in the eyes of the general public, is the Greatest Briton. Brunel was the only engineer to appear in the top ten and was only just beaten into second place by Sir Winston Churchill. He was the only engineer in the top ten and therefore it would not be unreasonable to consider him as 'the Greatest Engineer'.

2006 was the bi-centenary of Brunel's birth. Brunel 200 provided an exciting and wide-ranging programme of exhibitions, publications, walks, competitions and talks to commemorate the life, times & legacy of Brunel. This culminated in a spectacular firework display at the Clifton Suspension Bridge.

2010 is the 175th anniversary of the granting of the Royal Assent to the GWR Bill. Throughout the country events, exhibitions, many steam specials and celebrations are being held. This demonstrates the popularity that the GWR still has within the wider public. To place the GWR on the new Tentative List would be an appropriate recognition of its significance at this important anniversary.

Recently Dan Cruickshank presented a television programme entitled 'Brilliant Brunel' as part of his Great Train Journeys series, which illustrates the enthusiasm and affection for Brunel. A DVD copy is enclosed.

5. Tourism

Although it is not the role of World Heritage to promote tourism it is clearly a recognisable benefit.

In the case of the Great Western Railway tourism has always played a part in the line; at one time it was advertised as 'The Holiday Line'. Over the years a myriad of advertising posters extolling the virtues of places to visit along the GWR line have been created. STEAM in Swindon have an excellent selection of these posters.

In 2008 a successful exhibition was held at the Victoria Art Gallery featuring some of these posters in respect of Bath.

The GWR would also be a sustainable WHS with visitors being able to visit all the various structures and associated 'pearls' and 'beads' by a sustainable method of transport, indeed, the transport that Brunel intended.

6. Network Rail - Ownership of the Proposed Site

We have not been in direct contact with Network Rail to ascertain their views on a Great Western World Heritage Site. The document *'World Heritage for the Nation: Identifying, Protecting and Promoting our World Heritage – Analysis of Responses to the Policy Review'* (December 2009) makes it clear that Network Rail would not support the inscription:-

'Network Rail has declared that it would not support the nomination of the Great Western Railway and the Forth Bridge'.

Other points are made which we address in turn (63 is the reference given to Network Rail within the documentation):-

'Would in fact prefer all operations railway assets to be removed from the TL permanently. There are already strong protection controls in place through listing'.

This is clearly unreasonable as the World Heritage Site as proposed must be based on sections of the existing working network. However, the proposed site comprises seven outstanding individual elements and is restricted to the line of the original GWR railway and the structures associated with Isambard Kingdom Brunel. It does not include the present day track and operational infrastructure.

It is agreed that listing provides certain protection for the structures. However listed structures tend to be regarded in isolation and group listing over the entire GWR is impractical. World Heritage status recognises the importance of the major contribution the GWR made to industrialisation world-wide, the impact it had on society and the development in transport and civil engineering.

It is agreed that listing provides certain protection for the structures however this fails to grasp the whole importance of World Heritage status. In particular:-

- That industrialisation is one of the major contributions to the world and that the formerly proposed WHS based on Great Western Site was chosen by English Heritage because it represented development in transport and civil engineering that facilitated and spearheaded that contribution.
- The choice of the former GWR Railway by English Heritage was because the line represented Britain's first generation of main lines, it was '... the finest and best preserved example...'
- The report prepared for ICOMOS by Coulls et al in 1999, by a panel of international experts, notes that 'Railways are among the most important of industrial locations worthy of designation as World Heritage Sites....'
- Fails to recognise the individual creative genius of Isambard Kingdom Brunel and his contribution.

'WH status is not needed to protect railway assets. 63 has a good record in terms of looking after railway heritage, working closely with a number of heritage organisations'.

'Already work towards civic pride through commitment to preserve all sites and surrounding areas'.

Claiming to have a good heritage conservation record is not sufficient reason for not designating a site as a World Heritage Site. If Network Rail has such a good record on heritage conservation they will be aware of the importance of the line and the genius who created it, Isambard Kingdom Brunel. English Heritage have stated its importance and supported its nomination previously, the report on which is the mainstay of this nomination. Network Rail should be proud that the line is being considered for World Heritage status.

'Management of railway sites must not impede maintenance and further development of the railway. Permitted Development Rights must be retained in all cases'.

'Decisions with regard to performance and safety must remain with 63'.

The designation of a World Heritage Site does not mean that decisions with regard to performance and safety will be removed or that safety will be compromised. Nor does it prevent renewal or enhancements. There are existing World Heritage Sites in this country where new development is being allowed. Designation of a WHS does not necessarily prevent new development.

What it does mean is that the significance of the heritage asset has been clearly identified so that any decision to be taken can be informed by the international importance of that asset.

'Already carry out educational activities, including safety awareness, educational visits have significant safety risks'.

It is recognised that Network Rail carries out educational activities, however it is not accepted that educational visits will have safety risks. A large number of the proposed structures are visible from the public highway and all are visible from inside scheduled trains. Therefore there is no implication that designation will increase safety issues.

'63 should be part of the Steering/Advisory Group'.

There is no disagreement in this, however, the views of the owner, although important, are only one factor to be borne in mind and should not be the prime factor when determining WHS designation.

'Cost of inscription would outweigh benefit'.

The need to consider the economic benefits of a proposal is acknowledged but this has to be balanced against any harm caused to the significance of the heritage asset, and then an informed decision made. Many of the GWR 'pearls' are part of the operational railway and as such, maintenance of them is already funded, and public access to a number of them is already provided as passenger facilities.

General Point

There are a number of World Heritage Sites where local authorities, residents, businesses and commercial concerns are proud and actively celebrate being in a World Heritage Site. There may, likewise, be those who live and work in such areas that would rather they were not in a World Heritage Site and disagree with such designations. However, their views did not prevent the sites being designated. It is considered that Network Rail should not be treated any differently from the other designated sites. Just because it is a private, not for dividend, company does not mean it should be given any special treatment.

For Network Rail to be able to veto a nomination appears extremely unjust. No one private organisation should have the power to veto something as important as the designation of a heritage asset of worldwide significance. It opens up the whole question of the right of the individual organisation, or indeed individual, opposing heritage designations when the site otherwise meets all the other criteria for nomination. Bearing in mind that the listing process does not require the consent of the owner, there should be a similar approach to other heritage designations such as World Heritage Site status. It is of concern if the wishes of one organisation take precedence over a wider and more important community interest.

In addition the fact that there is only one owner should make management of the site simpler. To take a similar site as an example, Hadrian's Wall has a myriad of owners, yet through some co-ordination and co-operation works spectacularly well as a World Heritage Site.

7. Electrification

Clearly one of the biggest issues surrounding the GWR is the proposed electrification of the route. Though it is not yet clear whether this will now continue due to the proposed budget cuts, nonetheless the issue has to be considered.

There are many ways to electrify lines, some more intrusive than others, and clearly the impact upon the structures will have to be taken into consideration. However, designating the line as a World Heritage Site would not prevent this from happening. World Heritage Site status does not prevent development or progress. Most structures are already listed and therefore the impact of electrification will have to be taken into account during requests for consent for works. It may be that imaginative solutions have to be considered, but that should always be the case.

8. Local Authority Support

In the short time of the nomination process and given our local amenity group status, we have not been able to ascertain support of the various local authorities. However, as this nomination is the same as that in 1998 we have no reason to believe that the situation would be any different in 2010.

In the case of Bath & North East Somerset Council when the GWR was proposed for the 1999 Tentative List a motion was passed as follows:-

'The Council gives DCMS (Department for Culture, Media and Sport) its full support for the inclusion of the Paddington to Bristol Railway on the Tentative List of World Heritage Sites'. (copy attached)

We do, however, enclose a letter of support from Cllr Bryan Chalker, Member Champion for Heritage at Bath & North East Somerset Council.

9. Site Management, Site Funding and Management Funding

The subject of funding is something that we are unable to answer fully given our status as a local amenity group. Nevertheless, many of the GWR 'pearls' are part of the operational railway and as such, maintenance of them is already funded. In addition, to not take the nomination forward this time would not take into account the amounts of money which have already been committed to preparing the nomination.

Again as the nomination is the same as that in 1998 and subject to the English Heritage 2006 report we have no reason to believe that the situation regarding funding would be any different in 2010. However, it is recognised that the current economic climate is making local authority funding difficult. It is considered that an organisation such as English Heritage, as those charged with the recognition and protection of our heritage, should assist in this respect. It is noted that for the previous nomination a GWR World Heritage Site Steering Committee was created and it is considered that this should be reconvened.

Conclusion

We believe that the case for the Great Western World Heritage Site has been made by English Heritage and others. We commend Brunel's Great Western to be added to the new Tentative List and put forward for inscription in due course. There can be no greater way of honouring this truly heroic Victorian engineer.

'By his death the greatest of England's engineers was lost, the man with the greatest originality of thought and power of execution, bold in his plans but right. The commercial world thought him extravagant; but although he was so, great things are not done by those who sit down and count the cost of every thought and act'. (Sir Daniel Gooch)