

Idealists, colonialists and engineers

Underlining the importance of industrial heritage and technology depends on new ways of telling the story, perhaps through a new statutory designation of national heritage areas.



The south end of The Forth Bridge, viewed from the Hawes Pier in Queensferry, a few months before its inscription in 2015 (Photo: Miles Oglethorpe, Historic Environment Scotland)

Danny Boyle's unforgettably spectacular opening ceremony for the 2012 London Olympics paid homage to all the usual symbols of Britain's cultural and creative achievement. The examples ran from the boat race, punk rock, Sergeant Pepper uniforms and maypoles, through to Elgar, medieval village greens, cricket, Shakespeare, the suffragettes and the National Health Service. But pride of place was given to one great phenomenon, with the village green transformed into industrial Britain, maypoles replaced by towering, smoking chimneys and villagers replaced by the toiling urban masses, all supervised by top-hatted Victorian entrepreneurs and starring Kenneth Branagh as the engineer Isambard Kingdom Brunel.

It was a shrewd choice (if we can overlook the fact that Brunel was half French), as the industrial revolution is by common consent the long event that transformed Britain. Stonehenge

may be an intriguing relic, but it is ultimately no more than that. Britain's industrial society changed the world and, especially in the fast-growing nations of the far east, it does so today. It was forged in large part not by elites and experts, but by ordinary people in ordinary provincial places. Boyle had understood the common power of industry and its place in the national psyche.

Consciously or not, the process of identifying and inscribing UK-based world heritage sites has reflected the central importance of industrial heritage and technology. No less than a third of the inscribed sites (10 out of 27 sites on the UK mainland) have this theme. They are Blaenavon Industrial Landscape, Wales; the Slate Landscapes, Wales; Mining Landscapes of Cornwall and West Devon, England; Derwent Valley Mills, England; Forth Bridge, Scotland; Ironbridge Gorge, England; New Lanark,

Scotland; Pontcysyllte Aqueduct, Wales; Saltaire, England; and Jodrell Bank, England.

While the Lake District also contains some industrial heritage, it was inscribed as a world heritage site as a cultural landscape for its harmonious mountain landscape, shaped by a particular land use and farming system.

There are very many other places in the UK with strong claims to connections with industry and technology, including Liverpool (sadly deleted as a world heritage site by Unesco¹), the Stockton and Darlington Railway (the world's first), and the Liverpool and Manchester Railway (the first modern intercity railway). Other sites with a strong industrial revolution component are waiting to be considered for the UK's tentative list of world heritage sites, including Birkenhead Park (a critical early example of a public park) and Port Sunlight (a model village). Both these places are examples of pioneering developments designed to mitigate and compensate for the worst excesses of industrialism, by injecting new green space and designing new suburban garden city developments. Both have had a huge impact on the development of town planning throughout the world.

The only comprehensive review of UK sites was carried out by World Heritage UK in 2019. It briefly noted the importance of industrial heritage: 'A large part of the world heritage site collection relates to sites that reflect preindustrial town and landscape planning, the impact of the industrial revolution and the environmental mitigation of its worst effects, often through town planning and the creation of model communities. Many of these sites resonate with Britain's global role as a great power and shaper of world events, especially through the British Empire, the industrial revolution and the export of ideas for town planning and environmental management... They are of central importance in understanding Britain's island story.'² However, the review did not specifically carry the issue forward into its recommendations.

By common consent Britain was the first industrial nation. The industrial revolution was the most fundamental transformation of human life in history, arguably the greatest sea-change in history since the advent of agriculture. Technology became the main agent of economic and social change, and for a brief period all this coincided with the history of Britain. First into the experience, there was no external guidance, and the British had to evolve new mechanisms (social, technical and legislative) to support the growth of industry, while managing the worst excesses of headlong growth and industrial society.

In Eric Hobsbawm's words: 'An entire world economy was built on or rather around Britain,

and the country therefore temporarily rose to an unparalleled position of global influence and power... There was a moment in the history of the world where Britain can be described, if we are not pedantic, as its only workshop, its only massive importer and exporter, its only carrier, its only imperialist, almost its only foreign investor, and for that reason its only naval power and the only one which had a genuine world policy.'³

Following Britain's example, many countries not yet industrialised set about creating industrialisation by decree. Britain, by contrast, had seen an industrial revolution by general agreement. In the words of Peter Mathias: 'Britain saw an industrial revolution by consent. It owed nothing to planners and nothing to policemen.'⁴ In Britain, the state did not aim to drive change or shape development, or to act as counter to the social and environmental problems unleashed by industrialisation, although later it simply had to assume these roles. In many senses all nations seeking economic growth in the 20th and 21st centuries are following the path Britain pioneered in the 18th century. It follows that the sites most closely associated with this process assume national and international status, whether or not they are world heritage sites.

It is sometimes thought that the industrial revolution proceeded purely on the basis of craft skills among uneducated workers. There is doubtless some truth in this. Yet, as Joel Mokyr argues, the relative importance of science to the productive economy kept growing through the late-18th and 19th centuries.⁵ After 1870, science and technology became indispensable, as evidenced in partnerships between scientists and industrialists, and most dramatically in the growth and development of scientific institutions: the religious dissenters' academies, which provided the skills needed for the first phase

¹ See Dave Chetwyn and Ian Wray (2021) 'What was Unesco up to in Liverpool?' *Context* 170, December

² World Heritage UK (2019) *UK World Heritage: an asset for the future*

³ Eric Hobsbawm (1969) *Industry and Empire*, Pelican Books

⁴ Peter Mathias (1983) *The First Industrial Nation: an economic history of Britain, 1700–1914*, Routledge

⁵ Joel Mokyr (2009) *The Enlightened Economy: Britain and the Industrial Revolution, 1700–1850*, Yale University Press

Penrhyn Slate Quarry in the Slate Landscape of North West Wales World Heritage Site (Photo: Crown copyright, RCAHMW)



⁶ See Ian Wray (2016) *Great British Plans*, Routledge and Jenny Uglow (2002) *The Lunar Men*, Faber

⁷ See David Edgerton (2011) *Britain's War Machine: weapons, resources and experts in the second world war*, Harmondsworth

⁸ University of Liverpool Alumni Profile <https://www.liverpool.ac.uk/architecture/our-people/alumni/chenzhanxiang/>

⁹ Joel Mokyr, op. cit

¹⁰ Stephan Hebllich, Stephen Redding and Hans Joachim Voth (September 2022) *Slavery and the British Industrial Revolution*, National Bureau of Economic Research Working Paper 30451

of industrialisation, and later the 'redbrick' universities in northern cities.⁶

The story of industrialisation feeds naturally into the story of science and technology. In many areas of knowledge Britain still retains a world leading role, not least in fields stimulated by wartime priorities, including aviation, radar (thus radio astronomy), computing (thus robotics, autonomy and artificial intelligence) and nuclear physics.⁷ Similarly, Britain retains a world-leading role in addressing the adverse impact of economic growth, in town planning and the management of environmental change. British planners are respected throughout the world (arguably not so much at home these days). Old connections remain valid. Wei Yang, the Chinese/British town planner consultant, was recently president of the Royal Town Planning Institute. She and her colleagues have practised extensively in China.

Thousands of Chinese students have come to Britain to be educated as planners, returning to the challenge of China's fast-growing cities. They follow in the footsteps of Chen Zhanxiang, also known as Charles Chen. An architect planner, Chen studied at Liverpool University's school of architecture and its department of civic design (the world's first planning school) between 1938 and 1944. He was invited by architect and historian Liang Sicheng to return to China and contribute to the planning of Beijing. They proposed a new administrative zone for the western edge of the city and championed the protection of the historic core and architectural heritage of the ancient capital.⁸

Any narrative for industrial and scientific world heritage would intersect with a number of agendas that are of particular interest to government and the wider community. They include:

Scientific education Government and industry in Britain and throughout the world are concerned to secure high standards of educational attainment in science, technology, engineering and mathematics (STEM). These subjects are vital to economic growth and the growth of innovation and productivity, but they are not always popular and standards of attainment can be lacking. One key issue is encouraging brighter students to pursue studies in these subjects. Building knowledge of Britain's history of success as a scientific and industrial powerhouse could help to inspire future students and build a sense of national pride. As the birthplace of industrial society, Britain is at the centre of debates on economic growth and climate change.

Soft power The government is committed to developing a new global and international role for Britain after Brexit, and as part of this sees a role for soft power and influence. World heritage

sites themselves can be seen as a component of national soft power, status and global influence, especially when the sites reflect a history of technological and scientific achievement of global significance.

Regeneration 'Levelling up' is the present government's term for regenerating old industrial communities and tackling regional inequalities. Industrial heritage, concentrated in the north of Britain and in old industrial communities, could be a source of local pride and achievement in left-behind places, and a useful tool for supporting tourist development.

National purpose There is a case for building a sense of national pride and purpose. As with soft power, technological achievements are a legitimate element in national pride, so long as the narrative is honest about the less-than-benign elements of economic history, including exploitation, slavery and the negative environmental impact of industrial growth built on fossil fuels.

The connections between Britain's imperial past, slavery and industrial wealth are controversial, and even academics are divided. Joel Mokyr, author of recent seminal study of Britain's industrial revolution, argues that research has not substantiated the thesis that profits from the slave trade provided mainstream funding for the industrial revolution. He allows one exception: Britain's cotton industries, clustered around Manchester, became dependent on raw material produced by slave labour in the American southern states.⁹

Recent research by American academics takes a different view, arguing that by the 1830s slavery wealth was strongly correlated geographically with Britain's economic development.¹⁰ Yet their evidence appears to be circumstantial, if not counter-intuitive: the cities with the biggest concentrations of slave-holding wealth – London, Bristol/Bath and Liverpool – were not the great centres of industry and innovation, or of manufacturing employment. London and Liverpool had no cotton mills, and Bristol only one. Innovation occurred in other places, such as the north east of England, West Yorkshire, Manchester and the Midlands, which had little or no slave-holding wealth.

A new positive narrative for international industrial and world heritage could be developed and communicated in several ways. The first, and in some ways the most obvious, would be through the media, including books, podcasts, social media, documentaries, videos, museums, theatre and the visual arts. Taking this strand forward would call for professional marketing and PR advice on narrative, branding, audiences and preferred media.

The second and perhaps more interesting approach would be to replicate the industrial



Cromford Mill in the early morning mist. The world's first successful water-powered cotton spinning mill, Cromford Mill is the centrepiece of the Derwent Valley Mills World Heritage Site. (Photo: Derwent Valley Mills World Heritage Site)

festivals. The inspiration for the idea comes from extraordinary and successful events in Germany and Poland: the ExtraSchicht, which celebrates the industrial culture of the Ruhrgebiet, and the Industriada project in Silesia. An attempt in 2017 to investigate replicating these events in Britain foundered through lack of resources. Event management teams in Germany and Poland were keen to provide mentoring roles for the project. Individual sites might be linked together to form industrial trails.

A particularly simple and effective device might be the celebration of key anniversaries, such as the opening of the Liverpool and Manchester Railway in 1830. A project to mark this particular bicentenary is already under way, with support from the respective cities, museums and Network Rail.¹¹

Raising the profile of issues like biodiversity and climate change has been hugely influenced by a small number of thought leaders such as Greta Thunberg and David Attenborough. Could similarly influential individuals take forward the narrative for industrial heritage?

The final and perhaps most interesting possibility is the establishment of a new statutory designation of national heritage areas, similar to those designated in the USA. The American national heritage areas are places where historic, cultural and natural resources combine to form cohesive, nationally important landscapes. Unlike national parks, national heritage areas are large lived-in landscapes, collaborating with communities to determine how to make heritage

relevant to local interests and needs. By 2022, 55 national heritage areas had been designated in the USA¹², marrying heritage conservation, recreation and economic development.

As with national parks, areas of outstanding national beauty and national nature reserves, UK national heritage areas could enjoy national specific national planning policy and, like our rural environmental designations, a specific management budget from central government for enhancement, management and interpretation. While there are several national designations for sites of environmental and landscape significance (with attached central government funding and support), there is no equivalent for historic urban sites, other than conservation areas, which are essentially a local designation, with many thousands now identified. National heritage areas could embrace, but need not be confined to, existing world heritage sites. There are many other extremely important locations for the industrial and scientific narrative which are not, and may never become, world heritage sites.

Britain's industrial and scientific heritage is closely woven with the best and the worst of its global role, as an engineering innovator, as a scientific and technological giant, and as colonial power, part of whose elite wealth was generated by the cruel trade of slavery. Arguably 21st-century Britain needs to know much more about these subjects. We cannot build a new future for ourselves unless we understand where we have come from, both good and bad.

¹¹ David Thrower and Ian Wray (2022) 'Rocket 200', *Town and Country Planning*, March–April
¹² www.nps.gov/subjects/heritageareas/visit_nhas_online.htm

Ian Wray is a past vice chair of World Heritage UK and an honorary professor at Liverpool University's Heseltine Institute for Public Policy, Practice and Place.