



## Dr Miles Oglethorpe

*Head of Industrial Heritage, Historic Environment Scotland:  
President of TICCIH [International Committee on Industrial Heritage]*

**M**iles Oglethorpe was elected onto the Board of the International Committee on the Conservation of the Industrial Heritage (TICCIH) in 2003, and has been its President since 2018. He is also Head of Industrial Heritage at Historic Environment Scotland, the national body responsible for the built heritage in Scotland.

He recently led the team responsible for preparing the successful UNESCO World Heritage nomination for the Forth Bridge,

and continues to work on World Heritage issues, especially in collaboration with ICOMOS. He has edited, authored and co-authored a number of books and papers relating to industrial heritage, and energy in particular. Of these, his book, *Scottish Collieries: An Inventory of the Scottish Coal Industry in the Nationalised Era* is the most significant, containing the fruits of many years' work on Scotland's coal industry.

## 8. Union Bridge's future contribution to Society

*Miles Oglethorpe*

### **The Iconic Power of Bridges**

Across the world, Bridges are often iconic structures in their own right as well as being potent ambassadors for the engineering profession. The nature of the function they fulfil tends to elicit a sense of strategic and economic value, as well as frequently attracting political attention. Despite this, a quick glance at UNESCO's World Heritage List reveals that remarkably few bridges have been inscribed in their own right, most that are already on the list being part of much bigger World Heritage Sites, often in cities. Those that are on the list as single entities include Mostar in Bosnia Herzegovina, the wonderful Puente Vizcaya transporter bridge in Spain, the amazing Aqueduct of Padre Tembleque Hydraulic System in Mexico, and of course, our very own Forth Bridge. There is a possibility that these will soon be joined by the Brooklyn Bridge, now that it is on the USA's Tentative List of official candidates, but that will take a few years. Union Bridge, although not on UNESCO's list, is nevertheless an international historic engineering landmark in bridge development, sharing with the Forth and Brooklyn Bridges the distinction of having achieved the world's longest span carrying carriage traffic when opened.

### **The Forth Bridge Experience**

For Historic Environment Scotland, the successful nomination of the Forth Bridge was a hugely valuable experience, not least because UNESCO expects such inscriptions to include a commitment to ensure that the World Heritage listing contributes to society. Indeed, it is worth noting that in recent years, all nomination dossiers contain two components – one a 'Nomination Document' that demonstrates the 'Outstanding Universal Value' of the site (OUV) and the other a 'Management Plan' that defines the way in which that OUV is going to be managed and protected, and how it is going to bring benefits to local communities and wider audiences. As considered later, lessons learned from this experience have the potential to help with the future interpretation and promotion of the Union Chain Bridge.

In the case of the Forth Bridge, our dossier duly delivered the two documents which together were commended by the World Heritage Committee as an exemplar of good practice. A significant feature of the nomination was that it was delivered via a partnership, *The Forth Bridges Forum*, whose key players were Transport Scotland, Historic Scotland (who prepared the dossier), the three Local Authorities (Fife, City of Edinburgh and West Lothian), and Visit Scotland, our national tourism agency. These partners were all bound together by 'The Forth Bridges' as a collective entity, and the potential to promote engineering that spans three separate centuries.





*The Forth Bridge, following the completion of Network Rail's spectacular restoration project*



*Historic Scotland's Mark Watson, Mari McKee and Miles Oglethorpe taking delivery of the Forth Bridge nomination dossier just in time for the UNESCO deadline in January 2014*



### **Reaping the Benefits**

Against this background, the Forum has launched a Forth Bridges Area Tourism Strategy for 2019-29. This draws heavily on the work of economist, James Rebanks, whose expertise has focused on defining the benefits that can be gained by seeking World Heritage listing. Since then, UNESCO itself, and its advisers, ICOMOS, have produced guidance in the form of online toolkits explicitly promoting sustainable tourism.

In the case of the Forth Bridges, two of the three are road bridges, the older being the Forth Road Bridge, a structure that can trace its roots back to the Union Chain Bridge and which is also Category A-listed. At the time of its completion in 1964 it was the largest suspension bridge outside North America. It is special for many reasons, not least because one of the companies in the consortium that built it was Sir William Arrol,

the main contractor responsible for building The Forth Bridge. Coincidentally, Arrol was also building Jodrell Bank's Mark II Radio Telescope at the same time as the road bridge, and in 2019 the Observatory joined the Forth Bridge on UNESCO's World Heritage List as the UK's latest successful nomination.

The third of the Forth Bridges is the magnificent new cable-stay bridge, the Queensferry Crossing. This, and the other two bridges were digitally documented in 2017 by Historic Environment Scotland and the Glasgow School of Art and digital models of each bridge have been created from thousands of separate laser scans taken of each structure. These now form the heart of the *Go Forth* education packages that are designed to attract young people to STEM (Science, Technology, Engineering and Mathematics) subjects and are available to all schools via Education Scotland's Glow network.

## Learning from the Forth Bridges

Both the World Heritage inscription and the nomination process that preceded it delivered significant benefits at a local, regional and national level, as Rebanks predicted. Perhaps most important was the fact that the Forth Bridge was a catalyst that helped create a partnership, the Forth Bridges Forum, which itself has provided the platform from which collaboration and fundraising has been possible. Even if the nomination had been unsuccessful, the legacy of working together was hugely valuable in its own right.

Immediately after inscription in 2015, there was no immediate surge in visitor numbers, but there has been steady progress in achieving the actions outlined in the Management Plan. Apart from the launch of the new area tourism strategy, a co-ordinated signage strategy incorporating both sides of the river has been completed and recently refreshed, and on 4th March, the 130th anniversary of the Forth Bridge, a new 'Bridge Walk' visitor centre won planning permission from City of Edinburgh Council.



*3D models created from digital documentation surveys of the Forth Bridges have permitted the creation of immersive experiences for the Forth Bridge and Forth Road Bridge*

The hope is that the next phase will involve the development of a much bigger visitor centre at the north end of the Bridge, incorporating education facilities, including *Go Forth*.

## Realising the Potential of the Union Bridge

Many of the elements of the Forth Bridge experience could be applied to the Union Bridge. In effect, it was the extraordinary restoration project by Network Rail and its contractors, especially Balfour Beatty, that proved to be the catalyst for the World Heritage nomination and the subsequent partnership and its associated projects. There is no reason why the restoration of the Chain Bridge cannot deliver similar benefits.

Just as the Forth Bridges have recently spawned their own area tourism strategy aimed at developing a new tourism destination in Scotland, so the Union Bridge can provide a focus for the new proposed *Tweed Trail* and the associated *Borderlands Growth Deal for southern Scotland and northern England*. A quick glance at the documentation that has been released since the launch of the deal and the trail confirms that there is an ambition to attract more visitors to the region, to make the most of historic environment and cultural assets (including several other iconic bridges such as those at Berwick and Leaderfoot), and to develop a 'ground-breaking immersive interpretive experience'.

For this, our digital work at the Forth Bridges may well provide a useful exemplar. The digital models we have produced have many uses, ranging from immersive educational and visitor experiences to the development of maintenance and monitoring programmes, health and safety induction and even potential gaming applications. However, we have been most excited by its education potential, and judging by the enthusiastic reaction of the school children when *Go Forth* was launched by the Cabinet





*John Swinney, Cabinet Secretary for Education, launches Go Forth digital education packages*



Secretary for Education and Skills, John Swinney, we know engineering can still inspire young people.

Another hugely important benefit of the digital models is their capacity to promote virtual tourism. As has been clearly articulated in UNESCO's sustainable tourism toolkit, and by Historic Environment Scotland's recently launched Climate Change Action Plan, it is important to promote greener tourism. At the same time, creating attractive virtual alternatives to physical visits can also deliver more potent educational benefits, and has the potential to reach much bigger audiences on a global scale.

A major challenge facing the Forth Bridges remains the provision and integration of enhanced public transport. So far, a new bus corridor has evolved that is centred on the Forth Road Bridge, and there have been significant improvements to local bus services. At the same time, rail travel is being promoted, but there is still much work to be done. Indeed, there remain entrenched problems afflicting public transport, and buses in particular, across much of the UK, and these will need to be addressed around the Tweed if targets are to be met sustainably.

## Conclusion

All those who have worked together so hard to secure the Union Bridge restoration project deserve congratulations not only because it is such an important piece of historic engineering, but also because its enhanced recognition has the potential, not least in terms of education and tourism, to deliver significant benefits to adjacent neighbourhoods and communities and to the surrounding region on both sides of the Tweed. New digital technologies have the potential to amplify these benefits by delivering potent educational resources and by enhancing the *Destination Tweed* tourism offer sustainably, helping to share the wonders of the region with a global audience and working towards long-term regeneration. This could not come at a better time, now that the Bridge is about to enter its third century as a vital piece of operational, local infrastructure.

*Below: The Forth Road Bridge, main span 3300ft (1006m), the longest in Europe when erected in 1964. Note the substantial longitudinal under-deck counter oscillation steel stiffening and also, the Forth Bridge that features in the table with Union Bridge (page 15). © Chris Waite, via the good offices of John Andrew FICE, with the editor's grateful thanks.*



On the 26th July 2019, in a ceremony at Horncliffe House, Berwick-upon-Tweed, overlooking the Union Bridge, a Commemorative Stone was unveiled, marking a ceremony at Tweedhill, Berwickshire, exactly two hundred years previously when William Molle WS of Maines, Chirnside, the Chairman of the Berwick and North Durham Turnpike Trustees had laid the Foundation Stone of the Bridge “in the presence of the Trustees of the Berwick Roads, who are to erect the same under the authority of Parliament. May God prosper the undertaking”. It is intended that the Bicentenary Stone will be placed in the close vicinity of the Bridge on completion of the restoration works.



*Left to right: Alistair Birkhead, Friends of the Bridge who blessed the Bicentenary Stone; Brian Whittle, Friends of the Bridge who unveiled it; Robert Hunter, Friends of the Bridge and Marcus Paine of Hutton Stone Ltd who quarried, polished and inscribed it.  
Photograph © Jim Gibson*