The Science Museum, The Construction Industry and a Grubenmann Wooden Bridge Model

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The principal display area of the National Museum of Science and Industry is the Science Museum at South Kensington. The construction industry is one of the most significant applications for science and technology and the galleries at South Kensington contain a number of exhibits of direct relevance to building. 'Locks and Fastenings' is a small gallery that includes locks through history, together with models to show how they work. 'Roads, Bridges and Tunnels' contains many finely-detailed model bridges with other displays on road building and tunnelling. 'Gas' explains town and natural gases; how they are produced, distributed and used.

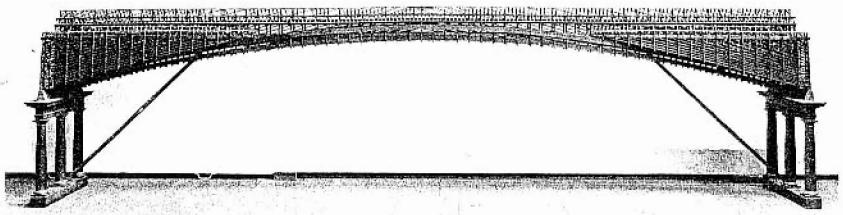
The Surveying Gallery contains instruments and equipment familiar to many in the construction industry. The Lighting Gallery has a comprehensive collection of lighting equipment of all types. A small display on heating and ventilation sponsored by the Chartered Institution of Building Services Engineers can be found in the Physics Gallery.

The Science Museum also mounts temporary exhibitions and hosts seminars. The 12th Annual Seminar of the Construction History Society, 'Science and Construction: Historic Relationships', was held in the main Lecture Theatre at South Kensington in August 1993. The theme had a wide range, reflecting the National Museum's own breadth of interest. Contributions were made on public building research, army engineering, construction industry research associations, traditional practice, building product development and building services.

The activities at South Kensington are only a part of the relationship between the National Museum of Science and Industry and the construction industry. The Museum has other sites and also a national advisory role. The Science Museum administers the grant fund for the Preservation of Industrial and Scientific Material (PRISM) on behalf of the Museums & Galleries Commission in England and Wales. Grants are made towards both acquisition and conservation. The material which can be considered must have a significant technological, scientific or industrial content. Eligible objects include a wide variety of industrial monuments as well as movable objects illustrating the history of technology. Books, archives and manuscript material in collections which are open to the public and not run for profit, are also considered for grant aid.

The National Museum manages the National Railway Museum at York which displays a range of railway construction objects. A significant number of objects from the Museum's collections are lent out to other museums in the United Kingdom and overseas. Despite such loans, less than 10% of the National Museum's collection are on public display at any time. This does not imply that they are inaccessible. The reserve collections can be visited by scholars and special interest groups. The material of interest to the construction industry is divided between two sites. Smaller items are stored on shelves at Blythe House, Olympia in London. Larger items are to be found in the blocks at Wroughton Airfield, Swindon, 125 kilometres further West. Some of these are quite large indeed. The heavier pieces of construction plant include a 1944 Priestman Tiger excavator and a Caterpillar D8 bulldozer.

Structural components from several demolished buildings of note are also kept at Wroughton. These include parts of the 1828 Quadrangle storehouse and Shed No. 10 at Sheerness; the 1845 roof of Block A, Albert Dock, Liverpool; Weaver's Mill, Swansea; and Ronan Pont. Bridges



Grubenmann wooden bridge model in the Science Museum (Inv. No. 1923–16).

have been of interest throughout the Museum's history since 1857. Superseded structural components are in store from Telford's Menai Bridge and Pont Cysyllte Aqueduct, Brunel's tubular suspension bridge over the Wye at Chepstow, Britannia Bridge, and the first aluminium bridge in the UK, an aluminium bascule bridge in Sunderland Docks, built in 1947 and demolished in 1977.

The collection of models of bridges is also noteworthy. Many of the more significant models, such as the 1786 model of the Iron Bridge at Coalbrookdale and the silver-plated parliamentary proposal model for the Forth Railway Bridge, are on display at South Kensington. The largest model however is in store and it may also be the oldest of the Museum's bridge models. Of wooden construction, it is 5.45 metres overall length and as presently displayed is just over 1 metre wide and 1½ metres high on its stand.

The other facts known about this model are limited and rather intriguing. It is in the style of the mid-eighteenth century bridges of the brothers Hans Ulrich and Johann Grubenmann. The model was handed over to the Museum in 1923 by King's College, London. There are no documents relating to the bridge other than the 1923 letter from the Secretary of King's College. The letter concluded that the bridge did not form part of the original King George III collection of scientific instruments but had, in fact, been made by a former student of the college. The model was accompanied by a copy of J G R Andreae's 'Description of the curious wooden bridge across the Rhine, at Schaffhausen, in Switzerland' (1799).

In 1982 the late J.G. James came across the following quotation in the *Illustrated London News*, Vol. 3, p.5 (1843). It described Prince Albert's visit to King's College, where.

> *"His Highness also noticed a large model some 15 feet in length of the magnificent wooden bridge, constructed across the Rhine at Schaffhausen in 1758, but burnt by the French in 1799. This model was made by two carpenters employed in building the bridge: it was brought by them to England for exhibition, actually drawn by them in a sort of truck from Dover to London, and subsequently purchased by George III".*

However, all the records of Schaffhausen show it as a two-span structure, as was a similar bridge proposed by Altheir over the Foyle at Londonderry, Ireland. At various times since 1923 there have been conjectures that the model was associated with one or other of these sites; the latter site especialy, as Shannahan's contemporary drawing of the Altheir proposal is titled 'The First Model of the Bridge of Derry'. This title has been the basis for assuming other models existed. The Altheir model reached Ireland and was subsequently destroyed in 'such a scandal that a veil was hastily drawn over it' in the early part of this century. Reference has also been made to another model made in Padua in the winter of 1771-72, but nothing appears to be known of its

appearance or fate. All in all, there are still many aspects of this Science Museum model which remain a mystery.

The importance of the Science Museum collection transcends its purely national context: it marks the emergence of the first industrial nation and the modern scientific and industrial world. In this context the construction industry is an important component. The task of building, researching and caring for the collections of objects associated with the increasingly complex range of technologies and underlying science is becoming more demanding. It is salutary to reflect that one of the oldest and most intriguing objects was the result of a monarch's impulse in the days when large-scale carpentry was a Wonder of the World.

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