

## Scott Wilson Scotland: A History

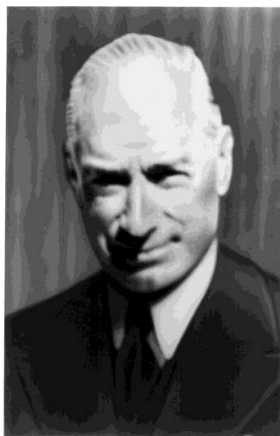
### Volume 1

### Before the Beginning [1960] - The Founding Fathers and Scotland

JP McCafferty



Sir Cyril Kirkpatrick



William Leslie Scott



THE KELVIN HALL OF INDUSTRIES  
GLASGOW 1926



Henry Grace

GLASGOW INNER RING ROAD



Significant or notable projects, people and events are highlighted as follows for ease of reference:-

Projects/Disciplines People Issue/Date Actions

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## Scott Wilson Scotland: A History

### Before the Beginning [1960] – The Founding Fathers and Scotland

#### JP McCafferty

The history Scott Wilson Scotland begins, of course, in 1960 when The Corporation of the City of Glasgow commissioned Scott Wilson Kirkpatrick & Partners (SWK) to carry out a limited traffic study to provide sufficient data for the design of an Inner Ring Road for the city. That story, and the subsequent development of Scott Wilson Scotland, will be recounted later but no history of Scott Wilson in Scotland would be complete without recognising and recording the much earlier involvement of two of the 'Founding Fathers' in civil engineering consultancy in Scotland and the 'Founding Father' of the Glasgow Office.

#### 1. Sir Cyril Kirkpatrick and the Rosyth Dockyard Arbitration

[King Edward VII Bridge, Newcastle; City Engineer Newcastle; Port of London Chief Engineer; Knighted 1922; President ICE 1931; Chairman ACE 1935; HM Naval Base Rosyth; Williams; McGowan; McCafferty]

Sir Cyril Reginald Sutton Kirkpatrick was born in 1872 and died aged 84 in 1957. Educated at the Crystal Palace School of Engineering, details of his illustrious career may be found in obituaries published in the ICE Proceedings, Vol 9, 1958 and The Engineer, Aug 1957. He worked initially in railways, notably on the King Edward VII Bridge, Newcastle; by 1906, aged 34, he was City Engineer! He joined the Port of London Authority in 1910 and became Chief Engineer in 1913 responsible for a vast construction programme including the King George V Dock, Woolwich. He was knighted in 1922 and formed Sir Cyril Kirkpatrick & Partners in 1925, specialising mainly in heavy foundations, docks and harbours. He was President of The Institution of Civil Engineers in 1931 and Chairman of the Association of Consulting Engineers in 1935. Retiring in 1951, aged 79, the firm he founded was incorporated into Scott & Wilson, Kirkpatrick & Partners in 1954.

Sir Cyril gave expert advice on many Parliamentary bills and at public inquiries, and on several occasions he acted as an arbitrator in disputes, most notably in the case of Rosyth Dockyard in Scotland. It is the Rosyth Dockyard Arbitration that provides the only known link between Sir Cyril Kirkpatrick and Scott Wilson in Scotland, firstly because the dispute concerned a major project in Scotland, and secondly, because, in 1984, SWK became consultants to the HM Naval Base Rosyth Joint Planning Team commencing a long and interesting connection with PSA, Defence Works Services and the Ministry of Defence.

Geoffrey Williams, then Senior Partner, on hearing of SWK's appointment at Rosyth, presented Bob McGowan, then Managing Partner in Scotland, with three large and weighty tomes entitled:-

'H.M. DOCKYARD, ROSYTH  
Messrs. Easton Gibb & Son, Ltd's Final Account  
Claim No. 16. Monoliths'

The most interesting of these tomes is a wonderful typeset, printed and bound document containing 'Drawings, etc., relative to Contractor's Replies to Admiralty Answers to the Claim for extra cost of Monoliths.' The document includes Cyril Kirkpatrick's signature and his marginal notes on the ensuing arbitration which, presumably, covered several other claims in dispute. The hand drawn illustrations are beautifully illustrated and minor works of art in their own right!

Little is known about the outcome although popular opinion within SWK was that Cyril Kirkpatrick (as he then was) found much to commend both sides of the argument!

It is interesting to note (from an AECOM feature in 'http://www.engineering-timelines.com') that **Guy Maunsell** (1884-1961), later to form his own consultancy, joined the Scottish firm of Easton Gibb & Son Ltd, main contractors for Rosyth Naval Dockyard in 1909, where Easton's son, **Alexander Gibb** was Managing Director. Alexander Gibb (1872-1958) also formed a well-known consultancy and was knighted in 1918. The two had a difficult relationship and Maunsell resigned in 1914.

Easton Gibb & Son built the tidal basin and three graving docks at Rosyth between 1909 and 1916. The project included a 4km sea wall, land reclamation, a power station, a pumping station, workshops and stores. There was considerable friction between Easton Gibb and the Admiralty and many difficulties arose resulting in a dispute that lasted three years with final settlement taking until 1922. Arbitrator **Cyril Kirkpatrick** would have been aged about 50 at the time and still Chief Engineer at the Port of London Authority. Maunsell later wrote 'In the course of forty years subsequent experience I have never elsewhere encountered anything to compare with the desperate character of the engineering struggle which took place at Rosyth during these years, a struggle which Mr Gibb had to make against time and harsh natural conditions on the one hand and against an unsympathetic lack of official understanding on the other.' He went on '.....owing to Admiralty intransigence, low contract prices and the great natural difficulties of the work, a successful issue was very much in doubt. That was, I suggest, the turning point of Mr Gibb's career; for, if he had not at the time mastered the difficulties before the outbreak of the 1914 war, the subsequent activities which made him famous would, in all probability, not have been invited by the authorities...'. It is to be hoped that Cyril Kirkpatrick came to a wise conclusion in his deliberations!

The three large and weighty tomes sat on **Bob McGowan**'s bookshelf in Park Circus, Glasgow, until he departed for Basingstoke in 1994; thereafter, they remained in the care of **Jim McCafferty**, Managing Partner/Director in Scotland, until he presented them to the Library of the Institution of Civil Engineers in London in March 2007.

While the connection between **Sir Cyril Kirkpatrick** and Scotland appears to have been limited to the Rosyth Dockyard Arbitration with no clear evidence that he actually visited Rosyth, the connection between Scotland and the second of the 'Founding Fathers' was much greater.

## 2. **WL Scott** and Reinforced Concrete Structures in Scotland

[**Considered 1911; Aberdeen Harbour; Walkerburn Hydro-Scheme; Dalmarnock Power Station; PWD Gold Coast; Admiralty; Lloyds Register; Killermont Bridge, Glasgow 1926; Kelvin Hall, Glasgow 1926; Govan Refuse Power Works 1926; Queen Margaret Bridge, Glasgow 1929; George V Bridge Glasgow 1927; WL Scott 1936; Wilson 1945; Measor, Grace, Williams; Royal Festival Hall; Kai Tak Airport; S&WKP 1954**]

**William Leslie Scott** was born in 1889 and died suddenly aged only 60 in 1950. WL Scott was educated at the Municipal College, Portsmouth and served his pupillage at the Thames Ironworks. Details of his distinguished career may be found in his obituary published in The Engineer in February 1950, a publication in which he had many papers and articles published over the years. In 1910, he was awarded a bronze medal in the City and Guilds structural engineering examination and joined **Considered Constructions Ltd** in 1911 where he was involved in reinforced concrete design, including work on **Aberdeen Harbour** and the **Glasgow Electrical Power Station [Dalmarnock]**. From 1915 to 1917, he was with **PWD Gold Coast** and during 1918-19 with the **Admiralty** then **Lloyds Register** pursuing his interests in reinforced concrete ships! In 1919, he re-joined **Considered Constructions Ltd as Chief Engineer**, remaining with them until 1936, when he set up his own practice, **WL Scott**.

WL Scott was a specialist in the design of reinforced concrete bridges and buildings, many of them in Scotland while he was with Considered Constructions. Considered, it appears, often provided what was then the 'specialist' design of reinforced concrete structures for other consultants as well as undertaking commissions in their own right. Around 1928, **WL Scott** published 'Reinforced Concrete

Bridges' [London: Crosby Lockwood] which was revised and re-published several times. Around 1930, he also published, with WH Glanville, the 'Explanatory Handbook on the Code of Practice for Reinforced Concrete' [London: Concrete Publications] which was still being revised and published by the Cement & Concrete Association in the 1970s.

**WL Scott's projects in Scotland**, in addition to those mentioned above [all with Considered], include:-

**Walkerburn Hydro-electric Scheme**, Scottish Borders [1922]: An early pumped storage scheme for a large textile mill including an rc storage reservoir 58.5m square and 4.7m deep [now empty].

**Dalmarnock Power Station, Glasgow**: Reinforced Concrete Turbine, Switch, and Boiler Houses [1919-1926]; Demolished 1980.

**Killermont Bridge, Glasgow [1926]**: A two-span, continuous, arched, rc box girder bridge, 67m long and 24m wide over the River Kelvin near Bearsden.

**The Kelvin Hall of Industries, Glasgow [1926]**: A 17,700sqm exhibition hall with rc shell roofs and long-span rc trussed girders. The entrance façade is a curious mixture of classical and art-deco architecture in red sandstone. The vast building hosted many exhibitions over the years and, until recently, housed the Museum of Transport in one section. There will be many who retain happy memories of annual trips to the Christmas carnival and the circus with trapeze artists dangling from WL Scott's girders while clowns and elephants performed beneath!

**Govan Refuse Power Works, Glasgow [1926]**.

**Queen Margaret Bridge, Glasgow [1926-1929]**. An elegant, 137m long, 24m wide road bridge soaring high over the River Kelvin in the West-end of Glasgow, with a 41.5m central rc arch and two arched pedestrian ways, all clad in red sandstone with architecturally classical detailing.

**George V Bridge over the Clyde** in the heart of Glasgow [1924-1927]: Conceived in 1914 but delayed during WW1, **WL Scott's** design was the result of a competition. The three span [36.5-50.5-36.5m], continuous, arched, granite clad rc box girder bridge emulates Telford's nearby Jamaica St Bridge. King George V laid a memorial stone on 12 July 1927, an auspicious date in the Glasgow of 1927!

Following the establishment of his own consultancy in 1936, **WL Scott** continued to specialise in rc structures, including major bridges and buildings, mainly in London. In 1945, he took **Guthlac Wilson** into partnership to form Scott and Wilson, expanding into roads and airfields while continuing with major buildings, notably the **Royal Festival Hall** on the South Bank in London, during the construction of which WL Scott died suddenly leaving Guthlac Wilson the sole partner.

Despite this blow, **Scott and Wilson** continued to prosper and expand under the leadership of **Guthlac Wilson** with the assistance of **EO Measor**, **Henry Grace** and the young **Geoffrey Williams** who had all been recruited around 1945-46.

In 1952, **Henry Grace** and the, by then **'Dr', Guthlac Wilson** [as a result of his extensive published work in Soil Mechanics] flew to **Hong Kong** to discuss the proposed new **Kai Tak Airport**, resulting in due course, in the establishment of the Hong Kong Partnership, the history of which will be detailed elsewhere. However, returning from a second visit to Hong Kong in 1953, **Dr Guthlac Wilson** and his wife were tragically killed in an air crash in Tanzania. There is no known evidence that **Guthlac Wilson** had any professional involvement in Scotland.

Following this further and profound tragedy for the emerging Firm, **EO Measor** and **Henry Grace** took over as Partners but it was clear that a further Partner was needed in London and it was decided to

engage with **RW Hawkey**, the sole partner of Sir Cyril Kirkpatrick & Partners, thus **establishing Scott & Wilson, Kirkpatrick & Partners on 1 Jan 1954.**

**EO Measor** continued as Senior Partner until 1971 followed by **Henry Grace**, then **Geoffrey Williams!**

While he was not one of the 'Founding Fathers', **Henry Grace** was the founding father of the Glasgow Office in 1960!

### **3. Henry Grace, the Founding Father of the Glasgow Office.**

**[WWII Airfields; Nyasaland; Blantyre Airport; Mudi Dam; Hong Kong Office; Kai Tak Airport; Glasgow Office; Glasgow Inner Ring Road]**

The following is extracted from a short Obituary in New Civil Engineer 25 August 1994:-

**Henry Grace** was a man of integrity, energy and dogged single-minded enthusiasm, especially for soil mechanics – a science he helped pioneer and which ran a common thread through his life as an engineer until his death at 82.

Those who worked with Grace were impressed by his strongly focused ideas and the difficulty of deterring him from any course of action. Such action usually proved that his judgement was right. And if occasionally things did go wrong Grace's advice was to: 'go and tell the client straight away, yourself'.

Born into a long-lived and strict Quaker family, Grace gained an MSc at Bristol in 1937 and followed his interest in soil mechanics at Harvard University. He returned to England, joined the RAF and applied his soil mechanics knowledge to **wartime airfield construction**. The work continued in the Pacific during the war with Japan.

Grace joined Scott & Wilson in 1946, establishing an office in **Nyasaland** and was responsible for **Blantyre Airport, Mudi Dam** and many **laterite clay roads**, developing an interest in low cost, appropriate construction. In 1952 he set up a Hong Kong office and engineered **Kai Tak Airport**.

**In 1960, back in Britain, Grace started the SWK office in Glasgow** and pioneered the city's highway plan. He was a senior partner at SWK from 1971 until 1976.

The following is the text of:

**Henry Grace** – A Tribute, from the Office of The Rt Hon The Lord Provost of Glasgow

**Henry Grace** will be remembered by many people in **Glasgow** as one of the leading figures of his generation within his own specialisation. His company were heavily involved in roads design and many of the discussions leading to the proposals for a motorway system originated from his fertile brain including the **Highway Plan of the 1960's**. Thereafter, the implementation of many of its proposals, which included a section of the **Glasgow Inner Ring Road** and parts of what we now know as the M8 were left in his capable hands. A practical man his proposed solutions were integral to the comprehensive development of the Glasgow Inner City including the areas of Townhead, Cowcaddens, Woodside and Anderston. He was a respected figure and his complete approach was welcomed by engineers at national level.

The people of Glasgow owe a debt of gratitude to **Henry Grace**. The regeneration of our great city emanates from its very heart but had the infrastructure that Henry put in place not been so far sighted then we would not have been so well placed in developing as successfully as we have. His legacy will remain with us in years to come.



While this tribute from The Lord Provost of Glasgow is aimed primarily at **Henry Grace**, the sentiments expressed apply equally to all those in the Glasgow office of SWK and elsewhere in the Firm who took part in that great endeavour that produce the **Highway Plan for Glasgow** and became The **Glasgow Inner Ring Road** and the M8 within the city.

**Sources:-**

Kirkpatrick, Sir Cyril Obituary The Engineer 30.08 1957

Scott, William Leslie Obituary The Engineer 03.02.1950

Wilson, Guthlac Obituary ICE Proceedings Vol 2 1953 and Goetechnique Vol III 1952 and 1953 and The Engineer 03.04.1953

Scott, WL Letter from ICE Archivist to JP McCafferty 08.071993 covering WL Scott's Circular for Associate membership, elected 14.01.1919 and his Circular for Membership, transferred 26 April 1927

Lists of Papers and publications by Scott, Wilson and Kirkpatrick (held by JP McCafferty)

Grace, Henry Obituary New Civil Engineer 18.08 1994 and The Daily Telegraph 16.08.1994 and The Times 22.07.1994 and A Tribute by James Sheilds on behalf of The Rt Hon The Lord Provost of Glasgow 1994(all with JP McCafferty)

**Photographs:-**

Photographs are with the obituaries and with JP McCafferty but some photographs and other illustrations are included on the following pages.



**Sir Cyril Kirkpatrick 1872 – 1957**

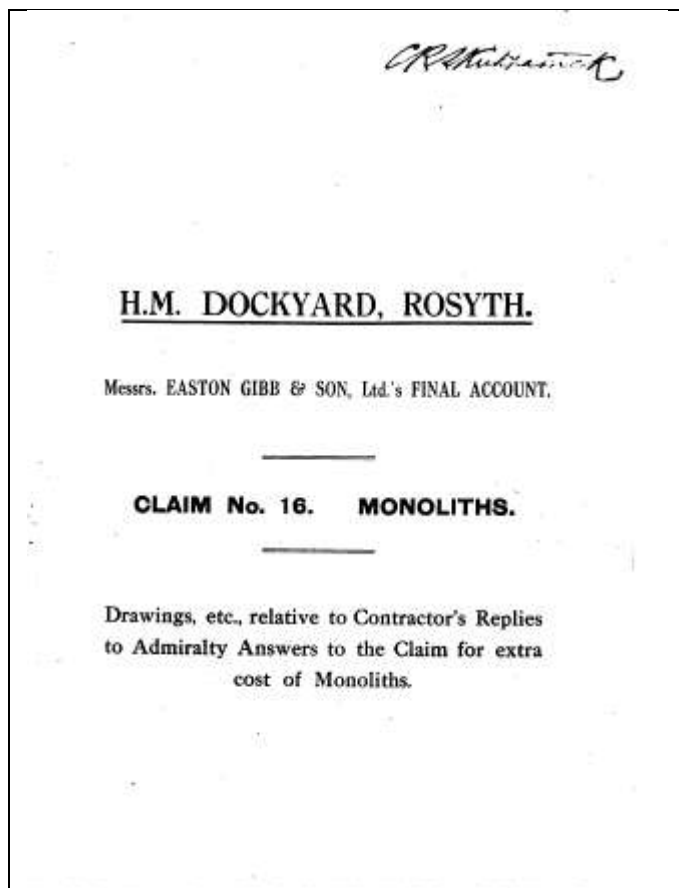
President Of The Institution of Civil Engineers  
1931-1932

Chairman of The Association of Consulting  
Engineers 1935-1936

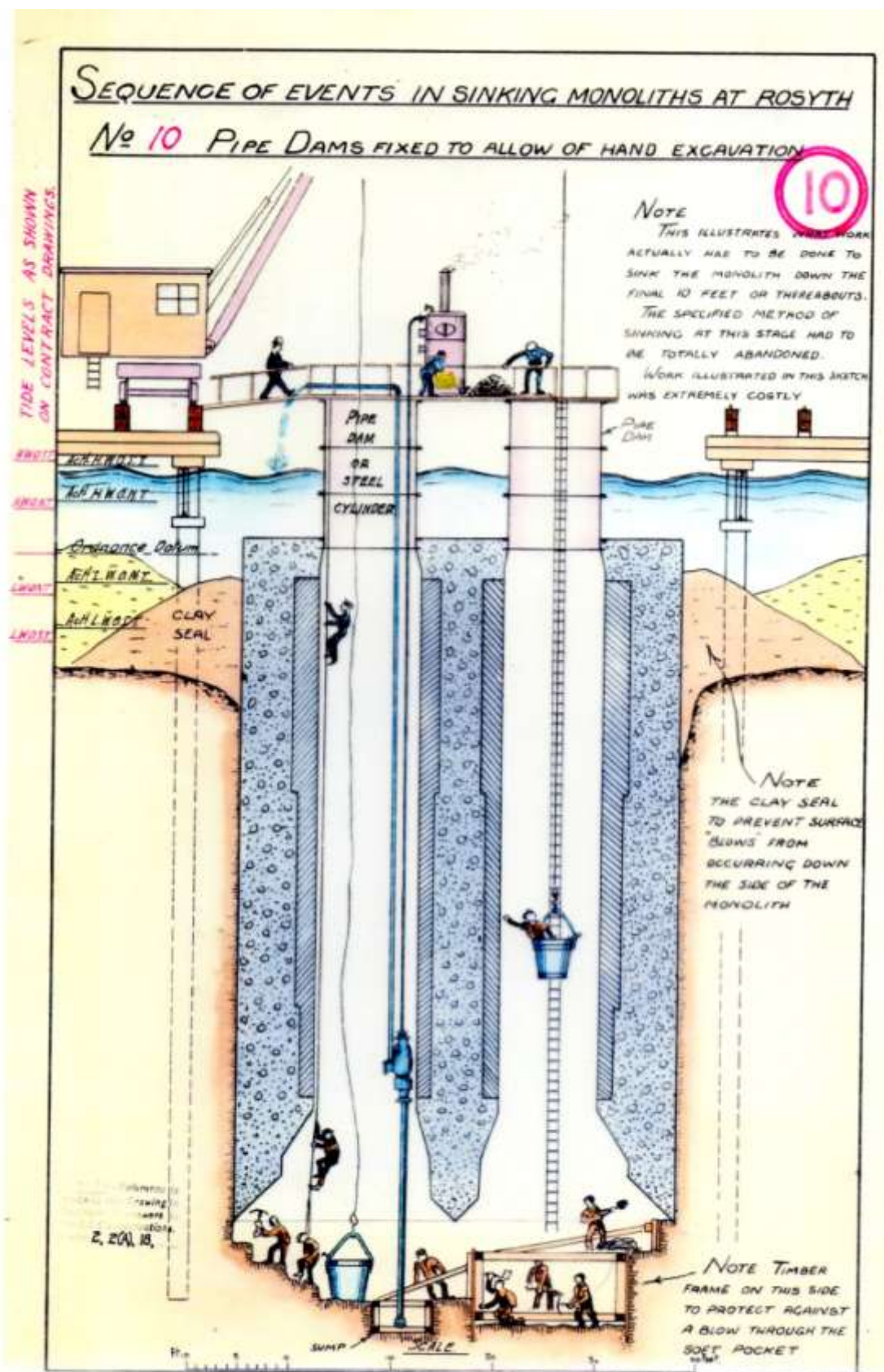
The Portrait hangs in The Institution of Civil  
Engineers, 1 Great George Street, London



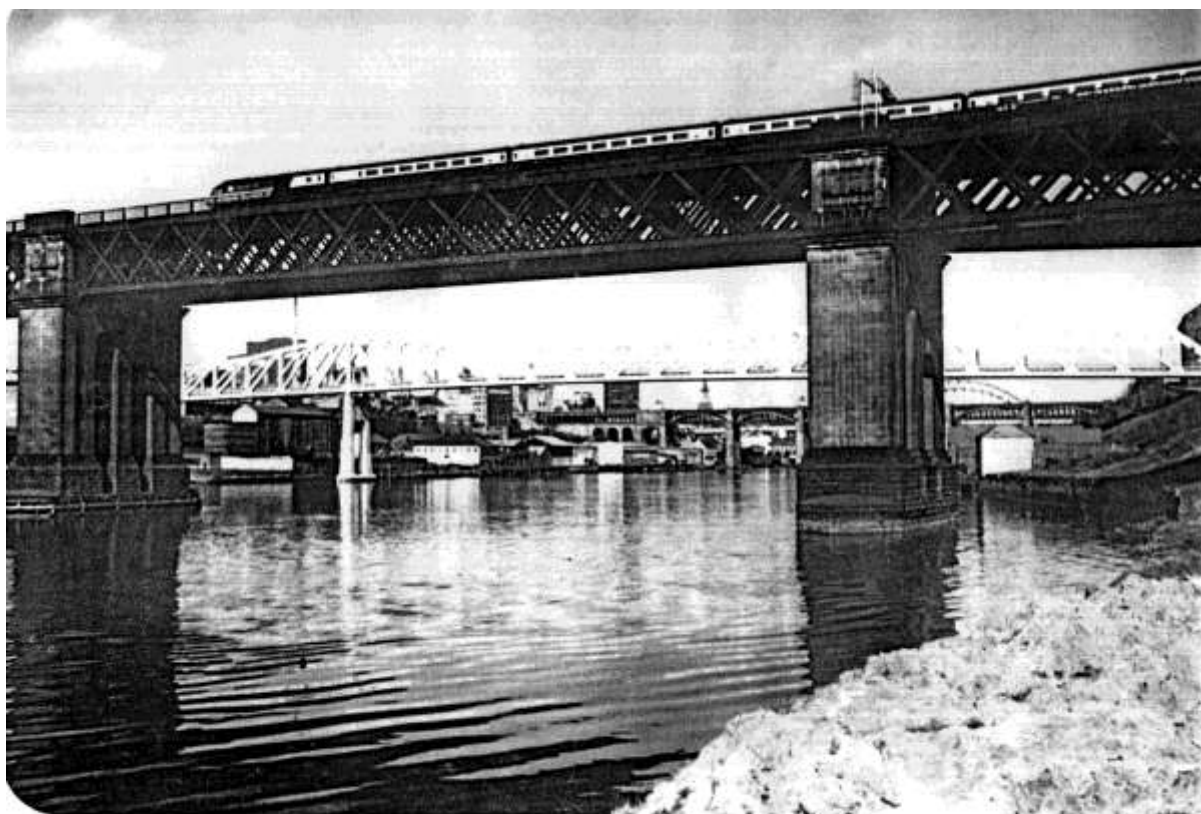




Sir Cyril Kirkpatrick's copy of Claim No 16 – Monoliths, relating to Easton Gibb's dispute with the Admiralty. Sir Cyril was Arbitrator.



One of the beautifully illustrated drawings giving details of Easton Gibb's Claim 16 against the Admiralty for additional costs involved in the sinking of Monoliths at HM Dockyard, Rosyth.



KING EDWARD VII RALWAY BRIDGE.  
opened 1906



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**William Leslie Scott 1898-1950**

Some of WL Scott's projects in Scotland are illustrated on the following pages. I should be noted that these projects were designed and constructed before the formation of Scott and Wilson when WL Scott was Chief Engineer with Consider Constructors, a specialist in the design and construction of reinforced concrete structures.



THE KELVIN HALL OF INDUSTRIES  
GLASGOW 1926



KILLERMONT BRIDGE · · · GLASGOW  
1926





KING GEORGE V BRIDGE  
GLASGOW 1927





King George V Bridge Glasgow 1927



QUEEN MARGARET BRIDGE  
GLASGOW 1926



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**Dr Guthlac Wilson 1902-1953**

Dr Guthlac Wilson is not known to have been associated with any projects in Scotland.



Henry Grace 1912-1994

## GLASGOW INNER RING ROAD



The Inner Ring Road Proposed in 'A Highway Plan for Glasgow' 1965



KAI TAK  
Hong Kong 1947

The Japanese  
Airport.



KAI TAK  
1960