

# **INSTITUTION OF CIVIL ENGINEERS**

## **LIBRARY AND INFORMATION SERVICES**

### **Guide to the ICE Archives 2010**

#### **Introduction**

The Institution of Civil Engineers is the oldest professional engineering Institution in the world. It was formed in 1818 by a group of civil engineers with the aim of sharing information and experience amongst young engineers in an atmosphere where they would not feel awed by the greater experience and knowledge of older engineers, however the upper age limit for joining, of 35, had to be removed when Thomas Telford was invited to become the first president of the Institution in 1820 as he was over 60. It was Telford's presentation of a collection of books at the time of accepting the office of President which was to become the foundation of the Institution's library and archives.

The Institution was awarded its Royal Charter status in 1828 and today is the awarding body for Chartered civil engineers of all ages.

The Archives Panel of the Institution was set up in 1975 to concern itself with the Institution's own records and also those of the profession and industry. As a result of the Panel's work, the Archives now contain many items of interest to engineers, civil engineering historians and researchers as well as members of the public carrying out genealogical research. The Panel has also issued a pamphlet: "Save Engineering Records" which gives advice on the selection and preservation of both past and present engineering archives.

The bulk of the Archives comprise documentary material pertaining to the ICE, or relating to past members, although there are also various other items and collections relating to the civil engineering profession in general.

#### **Access and availability**

The Archives are located in a specially designed Muniments Room at One Great George Street. They can be viewed in the Archives Search Room adjacent.

The collections are administered by the Institution Library of which they form an integral part. Members, researchers and other bona-fide enquirers wishing to inspect the archives should contact the Archivist to arrange an appointment.

The normal hours of the Archives are 9.30 until 4.30 Monday to Friday.

#### **Institution Archives**

The most important series of ICE records, dating more or less from its foundation are its Council Minutes, the Minutes of the AGMs, and its

membership records. The Archives contain a complete set of Council Minutes and manuscript Minutes of General Meetings and Annual General Meetings prior to 1840. These include the Minutes of the first meeting at the Kendal Coffee House and the definition of civil engineering as written by Thomas Tredgold for the Royal Charter.

Although the Institution began publishing its papers in 1836, for the early years a number of unpublished papers, and transcripts of early discussions (Minutes of Conversation) survive. After 1836 it is unusual for published papers to have been retained as original manuscripts, although some unpublished papers survive as well as those only published in abstract form (original Communications).

There is a complete set of Examination papers as well as Minutes of various Committees from the 1890s to the present day including the Engineering Boards, which cover various aspects of civil engineering practice. Although there are some surviving early account books, only a representative selection of later accounting books has been retained.

The Institution archives also contain correspondence, drawings and minute books regarding ICE premises.

### ***Finding aids***

The online library catalogue indexes the main archival collections and detailed indexes of ICE records are available for consultation in the Archives Search Room.

### **Local Associations Archives**

The Institution has various local associations and student groups which have held meetings locally since the 1880s. The Archives contain the Minute Books of most Local Associations and a number of Tract (pamphlet) volumes containing papers presented to Local Association meetings.

The Edinburgh and East of Scotland branch of ICE Scotland has a small museum display at Heriot Watt University. The Glasgow region records are at the Mitchell Library.

### **Records of Associated Bodies**

#### *Smeatonian Society*

The Society of Civil Engineers ('Smeatonians') was formed in 1771 and is named after John Smeaton, one of its founding members and probably the first person to describe himself as a 'civil engineer'. Unlike the Institution of Civil Engineers the Society of Civil Engineers was not intended to be a learned Society but rather a dining club and members of the Society still meet today at the ICE headquarters.

Records deposited at the ICE include early account books, and meeting attendance books.

Details of the Smeatonians can be found in Garth Watson's book *The Smeatonians*. 1989, Thomas Telford Ltd.

#### *Associated Societies*

The Institution has been involved with various International bodies such as PIANC, PIARC, ISSMFE since their formation, often providing their UK secretariat. Minutes of their UK committees are deposited in the archives.

#### *Institution of Municipal Engineers (IMunE)*

The Institution of Municipal Engineers was founded in 1871 and amalgamated with the ICE in 1984. The Institution of Municipal Engineers was originally called the Institution of Municipal and Sanitary Engineers and Surveyors and later became the Institution of Municipal and County Engineers. The archives contains duplicate Minute Books from 1921-1977 as well as some early manuscript Minute Books including the first volume of which includes the Minutes of the first meeting in July 1871. There is also a collection of printed membership lists from 1873-1978. The IMunE publications are available in the library.

#### *SCET (Society of Civil Engineering Technicians)*

The Society of Civil Engineering Technicians was formed in 1968 and merged with ICE in 1989 bringing over 4000 new members. The Archives holds the Minute Book (1968-1989) as well as information involving the merger including Minutes of the SCET Amalgamation Committee and newspaper cuttings. The *SCET journal* is held in the library.

#### *Institution of Works and Highways Management (IWHM)*

The IWHM were absorbed in 1994.

### **ICE Publications**

The Institution began publishing in 1836. Before this reports of meetings are to be found in *The Atheneum*. Most ICE publications are available in the main library. The published Proceedings are available in the archives search room. They are indexed on the ICE Publications database which contains details of papers published by the Institution. The Archives also contains a collection of nearly 2,000 manuscripts of unpublished papers (OC's) submitted to the Institution from 1818 to the present. These are listed on the Access to Archives website [www.nationalarchives.gov.uk/a2a](http://www.nationalarchives.gov.uk/a2a)

### **Biographical Information**

The most frequently requested information concerns the membership details of past members. The Archives contain the original Application forms (*Candidate's Circulars*) of members of the Institution dating back to the founding members. The records prior to 1870 are available on microfilm whilst there are printed versions of Candidate's circulars between 1870 and 1960. Unfortunately early records contain very brief details and information only relates to careers prior to the relevant application form being submitted.

By using the ICE Virtual Library it is possible to check for reference to published obituaries of past members; these will provide the date of election. If no obituary was published it is possible to check for membership information either by using the membership lists, which were published regularly from 1868 and less regularly before this, or by checking the Archive database. Changes of address and date of death or resignation can be traced using the membership lists which were produced at least annually up to the 1950s although less frequently after this.

ICE, IMechE and IET have produced a joint leaflet relating to Biographical sources within the 3 institutions.

The Library contains a large number of engineering biographies, and technical journals which published obituaries. Some such as *The Builder* and *The Engineer* have cumulative indexes.

ICE has published 2 volumes of Biographical Dictionary of Civil Engineers of Great Britain and Ireland (vol 1: 1500-1830 and vol 2: 1830-1890). Thomas Telford, 2002 and 2008. A third volume to cover 1890–1920 is being prepared.

### **Portraits**

The Institution owns what is believed to be the world's largest collection of portraits of civil engineers. Most are displayed around the building. The Archives contain 7 volumes of photographs of members from dating from 1880-1890s and record volumes for members who died in both World Wars. The archives also have black and white photographs of most of the portraits.

### **Collections**

The Archives contain a growing number of important collections of papers, listed below, which are generally indexed on the library catalogue.

#### **Mackenzie collection (coverage c.1810-1870)**

The Mackenzie collection is one of the largest collections within the Archives. Since the acquisition of the collection in 1990 the material has been undergoing a programme of conservation and cataloguing. The collection is an extremely important resource consisting of the engineering papers of William & Edward Mackenzie who were major contractors, building railways in Britain and throughout Europe with Joseph Locke and Thomas Brassey.

The material includes diaries, account books, letters, drawings etc. as well as items giving an insight into the life of navvies such as sick notes and pay slips. The diaries have been published and are available from the ICE bookshop.

Sources:

*Mackenzie Giant of Railways*: catalogue of exhibition, 1994

David Brooke (ed), *The diary of William Mackenzie*, 2000, Thomas Telford Ltd

David Brooke, Mackenzie: *International railway builder*, 1004, Newcomen Society

### **Charles Jones papers**

Charles Jones was Thomas Brassey's agent. The papers include correspondence between Jones, Brassey and others and papers relating to Sambre and Meuse railways 1852-1871, Paris to Cherbourg railway 1853-1885, Suez canal 1858-9, Maremma railway 1860-69, Meridionali railway 1860-1876, Lamberg to Czernowitz railway 1863-67 and Marseilles railway 1871-3.

### ***Smeaton reports (coverage c. 1760-1790)***

A set of published reports and manuscript letter books of John Smeaton FRS, the first engineer to call himself a 'civil engineer'.

Source: AW Skempton, *John Smeaton FRS*

### ***Rennie reports and letterbooks***

The archives contain 34 volumes of reports (1708-1850) and 9 volumes of letters (1789-90 and 1839-49) of John Rennie and his sons George and Sir John.

Further information on the Rennies can be found at the National Library of Scotland and a list of this material is kept in our archives.

Sources: CTG Boucher *John Rennie*

*Sir John Rennie* (autobiography)

John Rennie's reports are listed on the A2A website.

### ***Telford's Bequest***

Thomas Telford left his papers to ICE at his death in 1834. Surviving documents include 16 volumes of manuscript drafts of outgoing correspondence and letters from resident engineers and contractors. These give an insight into civil engineering design and contract procedure in the early 19th century. There are some notebooks and a few surviving drawings from the Telford bequest. The drawings collection was broken up in 1906 and many drawings were given to the owners of the structures involved.

Source: A Gibb: *Story of Telford*

Most of the reports are listed on the A2A website

### **Bazalgette Collection - The papers of Sir Joseph Bazalgette(1819 - 1891 )**

These include his published work on London main drainage, and his private consultancy reports.

### ***Vulliamy collection***

This collection of tracts and books a donation of a distinguished clockmaker B L Vulliamy (1780-1854), is concerned mainly with horology but also contains papers on various mechanical and engineering subjects.

### ***Charles Hartley Collection***

This collection consists of documents, papers and books belonging to Sir Charles Augustus Hartley (1825-1915), Engineer-in-Chief and Consultant Engineer to the European Commission of the Danube from 1856-1907. The collection was presented by Charles W S Hartley and includes notebooks (1856-1879), passports (1868-1903), letters (1840-1915), diaries and various documents.

Source: CWS Hartley, several biographical works

### ***Concrete Archive***

The Archive of Reinforced and Prestressed Concrete was started some years ago as a collection of historical drawings of reinforced concrete. Although an initiative of the Concrete Society, the Institution of Civil Engineers was chosen as the curator and location for the collection. The Archive will continue to develop, the aim being to record concrete practice from the 1890s to the present day with calculations, photographs, brochures, articles and working drawings. The collection includes material from the archives of firms such as L G Mouchel, Hurst Peirce & Malcolm, Owen Williams and F J Samuely.

### ***Alan Harris***

Papers relating to prestressed concrete including correspondence and reports relating to Mulberry Harbour. Also over 200 photographs and pocket office diaries 1949-99.

### ***Dr Chan Wah Yu***

Papers relating to reinforced and prestressed concrete design, 1950-90.

### ***Ellinger Collection***

The papers of John Henry Ellinger (active 1950s and 60s) , involved in several important twentieth century engineering projects; Ellinger was also a distinguished amateur photographer and traveller.

### ***Francis Walley Collection***

Papers and photographs particularly relating to protection from blast, presented by Dr Francis Walley.

### ***Sir Frederick Charles Cook***

Sir Frederick Cook was Chief engineer of the Roads Department of the Ministry of Transport. These papers relate to two trips to USA and Canada in the 1930s and his work on post war planning 1941-7. There are also copies of published papers by Cook, 1912-43

**Mowlem (1838-1976)**

Papers of John Mowlem and Co. Ltd. including Minute Books (1903-1976), financial records 1838-1928 and register of contracts sealed (1903-31).

**High Point Rendel**

Papers including printed 19<sup>th</sup> century reports of James Meadows Rendel, Alexander Meadows Rendel and 20<sup>th</sup> century reports of Rendel Palmer and Tritton; also copy letter book started by J M Rendel and continued by A M Rendel relating to Irish works.

**Felix James Samuely**

Personal and professional papers of Felix James Samuely (1902–1959). Professional papers relate to concrete and modular steel construction.

**Lionel Geoffrey Booth**

Papers relating to developments of timber shell designs (1947-83). The papers include correspondence with H Newsum & Sons, details of structures and buildings and published reports.

**George A Pitt (b. 1899) of Holloway Brothers**

Paper and photographs relating to use of sliding formwork for constructing silos and chimneys, 1930-60.

**Coode (1850-1983)**

(Sir) John Coode began his career with James Meadows Rendel who designed the Portland Breakwater. On Rendel's death in 1856 Coode took over the Portland job, and also the work that had begun at Table Bay and Port Alfred in Cape Colony. The collection includes papers from this time until the consulting engineering firm of Coode and Partners, known as Coode Blizard from 1984, was taken over by the Graham Group in 1994. The latter were absorbed by WSP.

The collection covers mainly harbour and drainage work in UK and overseas, particularly Africa and the Far East.

**British Standards Institute 1901-**

The collection includes various administrative records, papers relating to working parties, clippings, pamphlets and publications.

**British Road Federation**

Records of the BRF (1932-2000) and a largely complete set of their publications. There is no access to Minutes from 1991 onwards until 2011.

**Motorway Archive Trust**

Papers of the trust and deposited documents relating to the administration of British motorways.

Sources: <http://www.motorwayarchive.ihtservices.co.uk/>

BALDWIN, Sir Peter and BALDWIN, Robert. The Motorway Achievement Volume 1: The British Motorway System: Visualisation, Policy and Administration. Thomas Telford. 992 pages. ISBN 0-7277-3196-3.

BRIDLE, Ron and PORTER, John. The Motorway Achievement Volume 2: Frontiers of Knowledge and Practice. Thomas Telford. 578 pages. ISBN 0-7277-3197-1.

McCOUBREY, William James. The Motorway Achievement Volume 3: Building the Network. Thomas Telford. 696 pages. ISBN 978-0-7277-3198-2.

JOHNSON, William J. The Motorway Achievement: Motorway Management in the United Kingdom. Phillimore. 224 pages. ISBN 978-1-86077-588-8.

YEADON, Harry L. The Motorway Achievement: Building the Network: The North West of England. Phillimore. 192 pages. ISBN 1-86077-352-4.

BALDWIN, Sir Peter, BALDWIN, Robert and EVANS, Dewi Ieuan. The Motorway Achievement: Building the Network: Southern and Eastern England. Phillimore. 320 pages. ISBN 978-1-86077-446-1.

CARRINGTON, John M. The Motorway Achievement: Building the Network: The Midlands. Phillimore. 256 pages. ISBN 978-1-86077-536-9.

SIMS, F.A. The Motorway Achievement: Building the Network: The North East of England. Phillimore. 272 pages. ISBN 978-1-86077-520-8.

HAWKER, Brian, and STEVENS, Howard. The Motorway Achievement: Building the Network: Wales. Phillimore. Due shortly. ISBN 978-1-86077-590-1.

### ***Other Notebooks, diaries and letters***

There are various notebooks in the archives, ranging from eighteenth century examples by John Grundy, 1740 and William Weston, (1780 – 98) to the relatively recent notebooks of J Husband (1920) of the consulting firm of the same name. There are collections of diaries for example ... Dixon (1836 ), James Brindley (1759 to 1763) and Thomas Gooch (1823 to 1833). There are also various individual and sets of letters including those from John Fowler, between William Fairbairn, Robert Stephenson and Edwin Clark (1845-8) and between Thomas Telford and the Little family (1772 - 1833).

### ***Individual Civil Engineering Projects***

The Institution contains large amounts of material on some important civil engineering projects such as:

#### ***Thames Tunnel***

The Thames Tunnel was the first shield-driven underwater tunnel, the method of tunnelling being designed by (Sir) Marc Isambard Brunel. A remarkable feat, the tunnel took almost 20 years to complete, being opened in 1843. This collection contains drawings, diaries of Marc Isambard Brunel and report books of the Chief Engineer (Brunel) and various Resident Engineers and Observations of the various Engineers on duty. There are also rare albums of drawings of the shield.

The Chief Engineer reports are listed on A2A website

***London Sewerage*** - Contract drawings and specifications for Metropolitan Main Drainage

***Forth railway bridge*** – Drawings, blueprints, photographs and reports (1880s - 90s)



*Waterloo bridge* – Drawings, photographs and reports relating to demolition of old bridge and construction of current bridge (1930s) – see also High Point Rendel.

*Sydney Harbour bridge* - Photographs and contract documents (1901-33)

### **Research Collections**

#### **Frank Smith collection**

Frank Smith was a retired police officer who devoted much of his leisure time to biographical research into contractors, a sadly neglected aspect of civil engineering research. The collection consists over 300 files relating to contractors including lists of contracts and some census information.

#### **John G James collection**

John James was particularly interested in the history of the design and construction of iron structures and bridges, and wrote several papers on the development of bridge design, particularly trusses, the research for which is included in this collection along with photographs, papers and a substantial card index covering firms and individuals as well as structures and technological developments. John James was also interested in Russia and collected books both on the development of technology in Russia and Russia in general.

#### **Other Research Collections**

*Sir Alexander Gibb's research on Thomas Telford* (16 boxes)

*Professor Skempton and Charles Hadfield's research on William Jessop*

*Geoffrey Morse Binnie's research on the early history of dams*

#### **Drawings**

The Institution has a small collection of civil engineering drawings, which illustrate the development of the profession. The most important are:

Rennie Drawings and engravings – collection of drawings belonging to John Rennie

Coode drawings - 19th century harbour works

Sir Alexander Gibb and Partners - 19<sup>th</sup> and early 20<sup>th</sup> century projects

John Taylor & Sons - Water supply and sewage schemes

There are also over 500 drawings in the Mackenzie collection including plans and details of UK and continental railways.

#### **Photographs**

The Archives contain original photographs of various civil engineering projects dating back to the 1850s including over 30 albums and collections of photographs of, for example, the Forth Bridge, I K Brunel's Great Eastern, the Manchester Ship canal as well as overseas projects including bridges in India and railways in South America. There are also many individual prints

and a large collection of glass slides covering subjects from the late 19th century onwards.

There are two large collections containing 20<sup>th</sup> Century photographs; the Mouchel and New Civil Engineer collections. The NCE collection is not readily available at present as it has not been listed.

Copies of many of the Institution's photographs can also be obtained from the Mary Evans Photo Library.

### ***Published Works***

The Institution has an important collection of printed works on the history of civil engineering.

#### *Books*

The Archives holds several early architectural works including 39 editions of Vitruvius dating from the 15th century onwards. There is a collection of over 4000 pre-1900 titles, several of which provide important illustrative evidence of how civil engineering work was carried out in the past. Notable examples are Perronet's "Description des projets...des ponts de Neuilly..." and Bourne's "London and Birmingham Railway".

#### *Periodicals*

On 30 November 1819 less than two years after its foundation the Institution took out subscriptions to four scientific periodicals : 'Repertory of Arts and Manufacturers', 'Monthly Magazine', 'Philosophical Magazine' and 'New Monthly Magazine'. Since that time periodicals have formed a large part of the library and have consequently become an important part of the archives.

In 1836 the Institution published the first volume of the 'Transactions' and the first exchange of publications with the Architectural Society of Berlin was established. With the publication of the first 'Minutes of Proceedings' in 1837 this practice of exchange expanded and continues to this day. This along with donations eg. James Walker's set of Philosophical Transactions, has enabled the Institution to amass a large number of pre-1900 periodicals. This collection includes important European titles such as the 'Annales des Ponts et Chaussees' and 'Allgemeine Bauzeitung' as well as titles from the former colonies and America.

As well as a set of the Institution's own publication there are also some early serial titles including the much used 'Civil Engineer and Architect's Journal' stored within the archives. Users of the archives also have access to 130 pre-1900 titles stored within the basement area including the proceedings of engineering societies both from the United Kingdom and overseas as well as the popular 'Builder', 'Engineer' and 'Engineering'. A cumulative Index to the 'Engineer', 1856-1959 is stored in the Archives and an Illustrations Index to the 'Builder' 1843-1883 is also available.

Many of these periodicals have continued to be collected and more recent editions can be viewed via the library.

### **Tracts**

There are over 900 volumes of tracts in the archives which include early engineering reports from the bequest of Thomas Telford as well as gifts from Mrs Colonel (Frederick) Page, the Stevenson and Chapman families and the Smeatonian Society. The collection of canal pamphlets is possibly the largest in the country, and those dating from the railway age include material on the commercial and political development of the world's railway system, as well as its engineering aspects. There are more recent tracts which can be accessed via the library.

### **Records of Panel of Historical Engineering Works (PHEW)**

Since the early 1970's the Institution's Panel of Historical Engineering Works have been recording the details of historically significant civil engineering works.

### **Exhibitions**

The ICE Archives and library usually put on at least one major and one lesser exhibition each year. Major exhibitions have included Joseph Bazalgette, John Smeaton, Thames Tunnel, William Mackenzie, Mulberry Harbour, Ove Arup, Engineering in the Crimean War, Historic Concrete British Standards Institute, Aswan Dam and Britannia Bridge. Catalogues are available for most of these subjects.

### **Contact**

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## **Access to the collections**

Use of the Archives is by appointment only. A charge is made to non-members of £20-00 per name for genealogical research undertaken by the library staff.

### **Visitors are kindly requested to observe the following regulations:**

- 1) All visits should be by prior appointment (space is limited)
- 2) All coats and bulky luggage should be left at the cloakroom on the ground floor
- 3) Visitors should sign in the visitors book
- 4) Visitors should give advance warning to use of a laptop computer
- 5) Pencils only must be used for writing when using material from the archives. Please do not sharpen pencils at the desk.
- 6) Tracing should only be done by permission of a member of staff
- 7) Requests for material in the Muniments Room should be on relevant forms
- 8) Material is not to be removed from the Archives
- 9) Permission to photocopy or photograph material must be obtained from a member of staff. A copyright declaration should be filled in.
- 10) Where material originating in the ICE archives is used directly or indirectly in any publication or media presentation, due acknowledgement of the Institution of Civil Engineers should accompany such publication.

### **ICE Collection policy**

The archive serves the ICE by systematically documenting its activities and ensuring the selection and preservation of records required for legal, fiscal and administrative purposes.

The archive serves the ICE membership and researchers by collecting papers and records that relate to the history of the ICE and its members, or contribute significantly to the understanding of civil engineering history.

The archive accepts papers relating to structural, geotechnical, public health, transport, municipal, and offshore engineering. Also hydraulic engineering particularly relating to water supply, sewerage, land drainage, irrigation and flood control.

The archive particularly welcomes papers relating to developments in engineering such as early uses of materials or design.

The archive does not normally collect papers and records relating to electrical (other than power generation), mechanical, vehicle, chemical, marine or aeronautical engineering or naval architecture as there are relevant engineering institutions collecting in these areas. However, if papers form part of a larger collection within the archive's scope they will be accepted to retain the integrity of the records.

### **Records media**

Records are accepted in manuscript, printed and machine-readable formats. Plans, drawings, photographs slides, microfiche and microfilm are also accepted.

Books and published papers may be removed from collections and added to the library collection unless there are special or compelling reasons for them to remain with the collection e.g. if they are annotated.

The ICE does not normally accept collections of audio-visual or sound archives, as there are not currently the facilities to make such archives accessible.

Three-dimensional artefacts are not normally accepted unless they have a special relationship with the associated archives held. Artefacts will normally be directed to the appropriate museum.