



**CIBSE  
Scotland**

**1936 - 2016 80<sup>th</sup> ANNIVERSARY**



# **80 Years of CIBSE Scotland**

**A History of Building Services Engineering in the Region**



# 80 Years of CIBSE Scotland



Gerry Brannigan, Chair CIBSE Scotland

*Of all the small nations of this earth, perhaps only the ancient Greeks surpass the Scots in their contribution to mankind (Winston Churchill)*

Following in the footsteps of Mr Frank W Raynes, the first Chairman of our Branch in 1936 and many notable engineers since, I am delighted to be representing nearly 1100 members in Scotland in our eightieth year.

From the first paper read at our inauguration meeting titled “Pipe Sizing for Hot and Cold Water Supply Services” we continue to deliver multiple technical seminars to promote the development of all our members. CIBSE Scotland also continues to run networking events for the benefit of our members with our Annual Dinner held in November. In addition, the new “CIBSE Scotland Golf Championship” was successfully held for the first time in August 2016.

I would like to personally thank the CIBSE Heritage Group, the CIBSE Scotland Committee, multiple past Chairs, in particular Tony Ownsworth for coordinating and all other contributors for creating this fantastic record of the Scottish Building Services Engineering history.

I hope you enjoy this travel through time as our industry has developed in Scotland and look forward to the industry continuing to grow from strength to strength.

*May the best you've ever seen, be the worst you've ever seen (Allan Ramsay of Skye)*

*Sláinte*

A handwritten signature in black ink that reads "Gerry Brannigan". The signature is fluid and cursive, with a long horizontal stroke at the end.

BEng (Hons) CEng FCIBSE MASHRAE MSoPHE MAE  
Chair CIBSE Scotland (2015-2017)

# 80 Years of CIBSE Scotland



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This Publication is the result of close collaboration between CIBSE Scotland and Brian Roberts and Frank Ferris of the CIBSE Heritage Group (founded in 1973), the longest established of the CIBSE Special Interest Groups.

Front Cover – (top)–taken from Science Centre Tower by Gerry Brannigan. (bottom) Photograph of Govan 1950

# Message from the President



John Field, CIBSE President 2016-17

This celebration of the Scottish Region of CIBSE highlights the level of activity and achievement since the formation of the Scottish Branch of the IHVE in 1936. The Region has an impressive history of innovation: air conditioning from Thermotank widely used by Cunard, ground breaking Cochran Boilers that revolutionised maritime travel, as well as high profile and sometimes controversial installations at the University of Glasgow and Glasgow School of Art.

It is instructive to see the Scotland Hall of Fame that stretches from Watt and Reid, giants of the world scientific stage Rankine, Thomson and Maxwell, design and architect giants like Mackintosh, to our own profession's George Arthur Rooley and Richard Rooley.

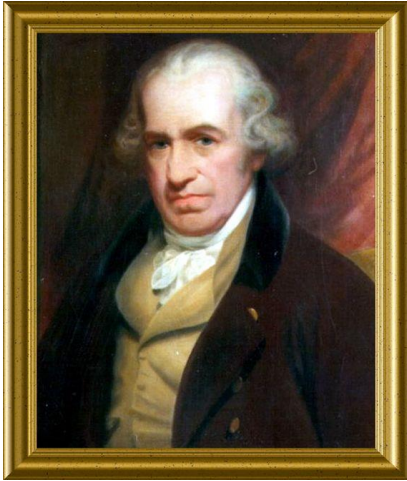
Recently CIBSE Scotland has been at the forefront of developments including the Young Engineers Network, with invaluable contributions to the Institution, not least from Region Chair Gerry Brannigan and CIBSE Treasurer Stuart Macpherson.

We therefore wish CIBSE Scotland well for the next 80 years, and beyond.

*John Field*

MA CEng FCIBSE MEI CMVP  
CIBSE President (2016-17)

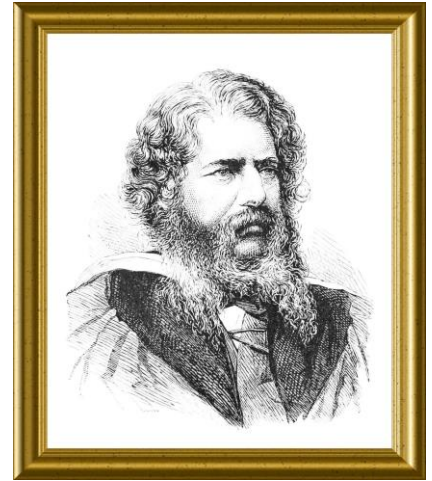
# Scotland Hall of Fame



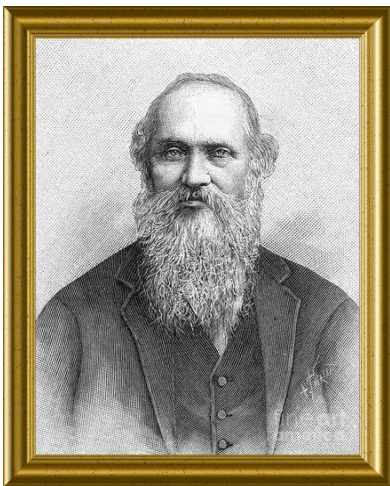
James Watt, 1736-1819  
Born Greenock  
Watt steam engine



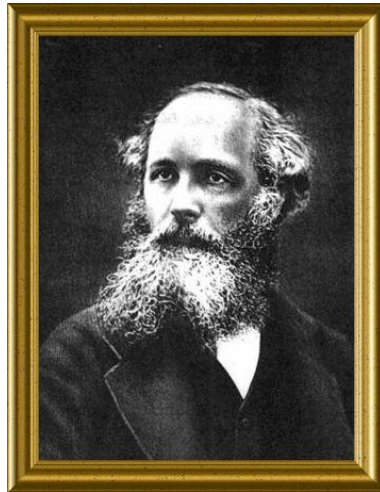
David Boswell Reid 1805-63  
Born Edinburgh  
Grandfather of air conditioning



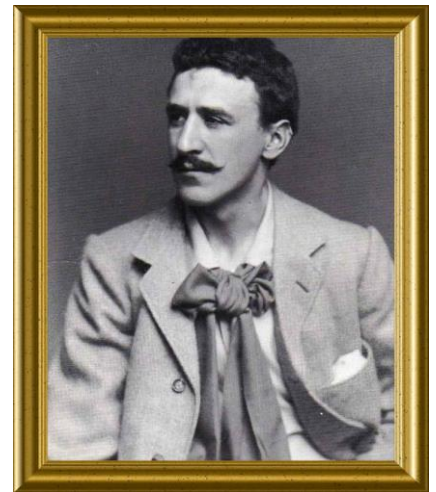
W J Macquorn Rankine, 1828-72  
Born Edinburgh  
Steam engine theory



William Thomson, 1824-1901  
Lord Kelvin  
Heat pump theory



James Clerk Maxwell, 1831-79  
Born Edinburgh  
Electromagnetism



Charles Rennie Mackintosh,  
1868-1928, Born Glasgow  
Art Nouveau style architect



George Arthur Rooley  
Founding Partner DSSR, 1945  
President IHVE, 1965-66;



Richard Rooley  
First overseas President of ASHRAE  
2003-04

# The Institution of Heating and Ventilating Engineers



Edmund Wm Mayner  
Father of the IHVE



John Grundy  
1<sup>st</sup> President IHVE, 1898



IHVE logo

Edmund Mayner was largely responsible for setting up the IHVE in 1897, though he never occupied the Presidential Chair, preferring to hold the post of Chairman of the Executive Committee. It is almost certain that he recruited Walter Jones, David M Nesbit, W R Maguire, Louis F Pearson (later Sir), Jno S Palmer and George Crispin, all of whom came to the Chair after John Grundy the first President.

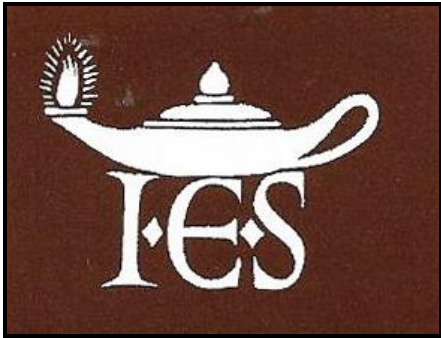
The original prospectus of the Institution in December 1897 lamented the state of the science of heating and ventilating in this country comparing it unfavourably with the recognition afforded by the Americans and Canadians noting that on this side of the water "to the public the science of Heating is almost unknown and Ventilation exists largely in the imagination." This was the first serious attempt to organise the profession.

John Grundy came from City Road, London and was a boiler manufacturer of some eminence. His objectives were "to promote the intellectual welfare of members....to read, consider and discuss papers or problems on Heating, Ventilating or other kindred subjects, and so take measures to extend, develop or safeguard the interests of these important trades as may be considered desirable or expedient."



The first IHVE Summer Meeting, Stourbridge, 1899

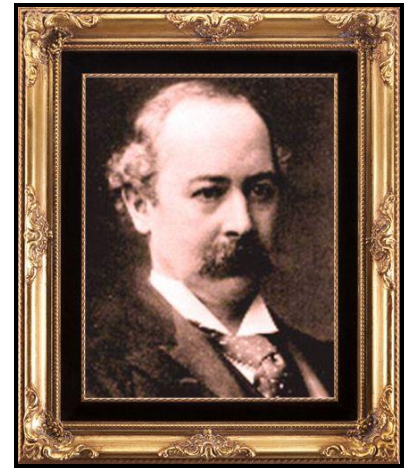
# The Illuminating Engineering Society



IES logo



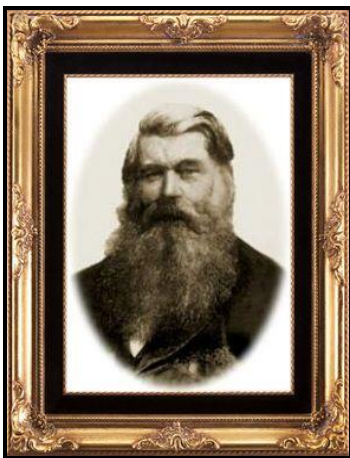
Leon Gaster  
1<sup>st</sup> Hon. Secretary of the IES



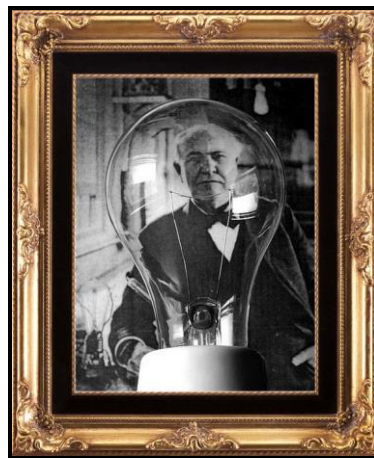
Silvanus Thompson  
1<sup>st</sup> President IES, 1909-13

The Illuminating Engineer Society was founded in 1909 by a small enthusiastic group consisting of lighting engineers, architects, electrical and gas engineers. The credit for the formation of the Society belongs to Leon Gaster (Editor of *The Illuminating Engineer*), who arranged an informal meeting at which he said, "in advocating the formation of such a Society we have no desire to do more than provide a common platform where all those interested in illumination may be able to express their views in a free and informal manner, and membership of such a Society cannot, at the present time, be regarded as any claim to professional distinction. We naturally hope that in time to come when the subject of illumination has been thrashed out in detail to a far greater extent than at present, 'expert illuminating engineers' will have a professional existence."

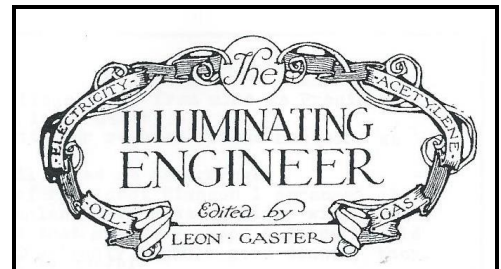
IES Centres were set up in Glasgow (1936) and in Edinburgh (1944). The first IES Code *Recommended Values of Illumination* was first issued in 1936. The Society of Light and Lighting (SLL) was launched in 1999 as part of CIBSE.



Sir Joseph Wilson Swan  
Hon. Fellow IES, 1909



Thomas Alva Edison  
Hon. Fellow IES, 1914



The IES magazine

# Chartered Institution of Building Services Engineers

In 1976 a Royal Charter was granted allowing the Institution of Heating and Ventilating Engineers, founded in 1897, to amalgamate with the Illuminating Engineering Society, dating from 1909. This created CIBS: The Chartered Institution of Building Services.

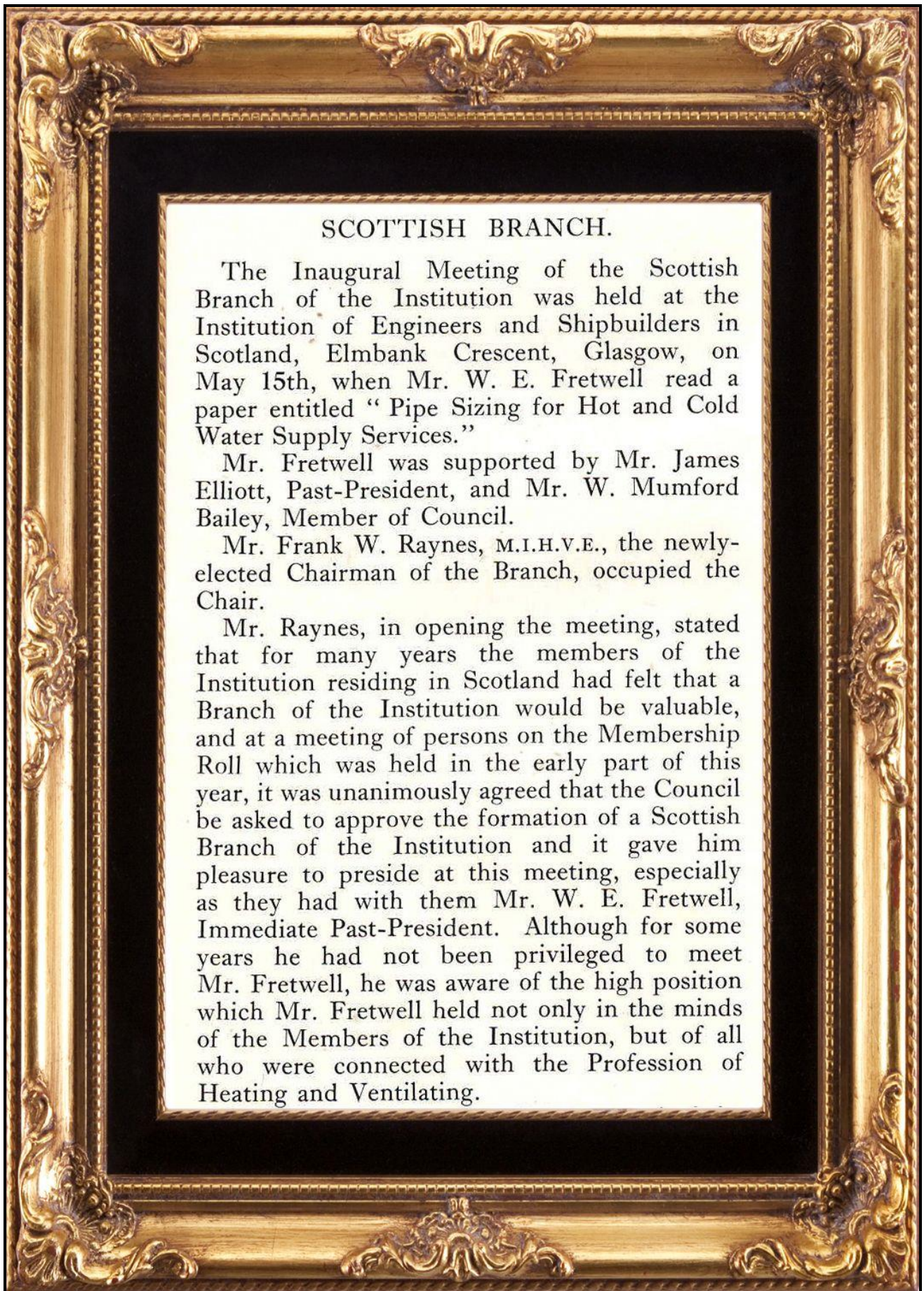
In 1985, the word Engineers was added to the Institution's name, giving CIBSE the title by which it is known throughout the world today: the Chartered Institution of Building Services Engineers. The objectives of the Institution are set out in its Royal Charter: *CIBSE exists to promote the art, science and practice of building services engineering for the benefit of all, and the advancement of education and research.*



The Centenary of the Institution in 1997  
The complete book may be viewed on the Heritage Group Website



## Birth of CIBSE Scotland in 1936



From the IHVE Journal

# CIBSE Scotland Events & Networking



(l-r) CIBSE President F A Pullinger and Region Chairman David Horne at the Annual Dinner, 1972



Ladies Night 1992  
Chair Gordon Meikle (4<sup>th</sup> from right)




Ladies Night 1993  
Chair Jim Hampson (4<sup>th</sup> from left)

# CIBSE Scotland Events & Networking




Past Chairman and office bearers at  
60<sup>th</sup> Anniversary Dinner, 1996



CIBSE  
SCOTLAND

THE CHARTERED INSTITUTION OF  
BUILDING SERVICES ENGINEERS  
SCOTTISH REGION



**DIAMOND JUBILEE  
DINNER**  
1936 – 1996

FRIDAY 1ST NOVEMBER 1996  
FORTE POSTHOUSE HOTEL, GLASGOW

*Chairman*  
ALAN HENDERSON  
MCIBSE, MIPLANTE

# CIBSE Scotland Events & Networking



Annual Dinner 1993: Chair Jim Hampson (*2<sup>nd</sup> row centre*)  
CIBSE President David Lush OBE (*4<sup>th</sup> from right*)



Tony Ownsworth (*right*) Scottish Region Chair 1990, receiving  
The Regional Lighting Award from SLL President Kevin Kelly, 2013

# CIBSE Scotland Events & Networking



President Kenny, Scotland Chair Jim Mackay & Ian Stewart, 1986



Top table guests at Annual Banquet & Ball, 1997 with President Geoff Brundrett (*left, 2<sup>nd</sup> row*)



Young Engineer's table at CIBSE Scotland Annual Dinner, 2015



Top table guests with Chair Ian Stewart, 1981



Annual Dinner 2002 with CIBSE Scotland Chair, Dr Lori McElroy (*centre*)

# CIBSE Scotland Events & Networking



Gerry Brannigan at the Royal Incorporation of Architects in Scotland Centenary and Awards Dinner alongside RIAS President Willie Watt



The Young Engineer's table at CIBSE Scotland Annual Dinner, 2015

CIBSE Scotland continues to work alongside other like-minded institutions with the aim of running joint seminars, education initiatives and networking events. In addition, the Region has been organising an Annual Dinner each year to celebrate our industry and our members.

## CIBSE Scotland Past Chairmen

<b>Chair</b>	<b>Years in Office</b>	<b>Chair</b>	<b>Years in Office</b>
<b>F W Raynes</b>	1936-38	<b>R C Kirkwood</b>	1977
<b>T B K Anderson</b>	1939-44, 1953	<b>A W K Stewart</b>	1978
<b>W M Kerr</b>	1945-46	<b>C. Stuart</b>	1979
<b>S Gibson</b>	1947	<b>W C Pyle</b>	1980
<b>J Jamieson</b>	1948	<b>I G Stewart</b>	1981
<b>G A Rooley</b>	1949	<b>W J Bonthron</b>	1982
<b>J Newton</b>	1950, 1954	<b>W R Craig</b>	1983
<b>D W Torry</b>	1951	<b>K J Tait</b>	1984
<b>M E Vincent</b>	1952, 1960	<b>N R Foulner</b>	1985
<b>G G Salt</b>	1955	<b>J A H McKay</b>	1986
<b>I C Kirkwood</b>	1956, 1968-69	<b>J B Malcolm</b>	1987
<b>H H Grattidge</b>	1957	<b>W G Gormley</b>	1988
<b>A S Knight</b>	1958	<b>L S Martinez</b>	1989
<b>C M Gibson</b>	1959	<b>A A Ownsworth</b>	1990
<b>A J Hamilton</b>	1961, 1975	<b>R S Webb</b>	1991
<b>T S McGregor</b>	1962	<b>G J Meikle</b>	1992
<b>T Turner</b>	1963	<b>J H R Hampson</b>	1993
<b>R N McAuslan</b>	1964	<b>G A Elliot</b>	1994
<b>N McLean</b>	1965	<b>J B McLean</b>	1995
<b>J S Torrance</b>	1966	<b>A Henderson</b>	1996-97
<b>M A Knight</b>	1967	<b>H C Brodie</b>	1998-99
<b>D P Irons</b>	1970	<b>A Donaldson</b>	2000-01
<b>D A Horne</b>	1971	<b>Dr L B McElroy</b>	2002-03
<b>K W Wilson</b>	1972-73	<b>S J MacPherson</b>	2004-12
<b>W McNaughton</b>	1974	<b>M A Gribben</b>	2013-14
<b>D A H McKenzie</b>	1976	<b>J G Brannigan</b>	2015

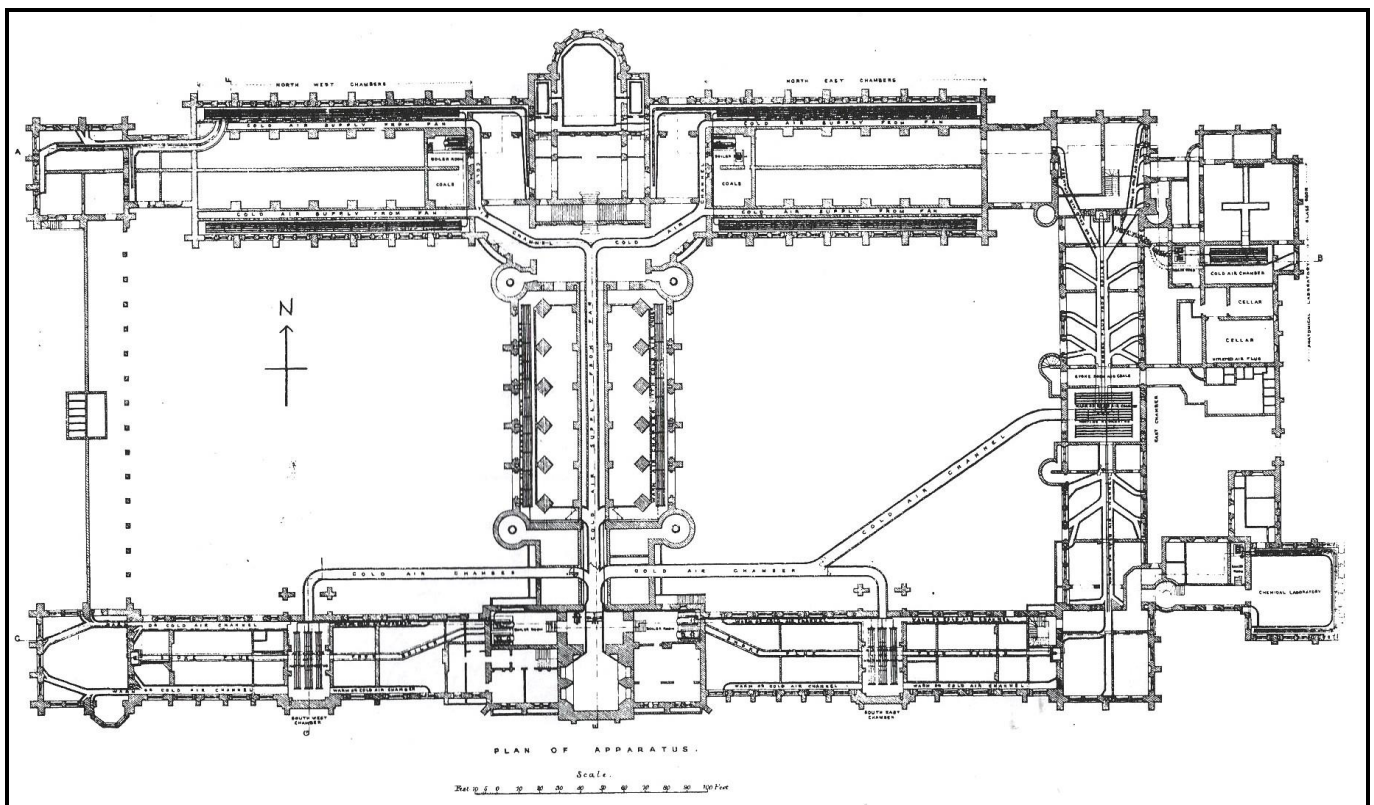
# Pioneering Buildings & Companies

## UNIVERSITY of GLASGOW, 1866-70

A vast heating and ventilation system was designed by Wilson Weatherley Phipson (1838-91). Air travelled from inlets at the top of the clock tower to a plenum chamber where it was distributed by a steam-driven fan through a network of underground passages to heating chambers having gravity-fed hot water heating coils served by local Cornish boilers. Heat-assisted exhaust air was passed to atmosphere through upcast shafts. This complex early design generated a great deal of controversy.



Founded in 1451, the present University buildings were designed by Sir George Gilbert Scott in the Gothic Revival style, the clock tower being modified later by his son Olrid.



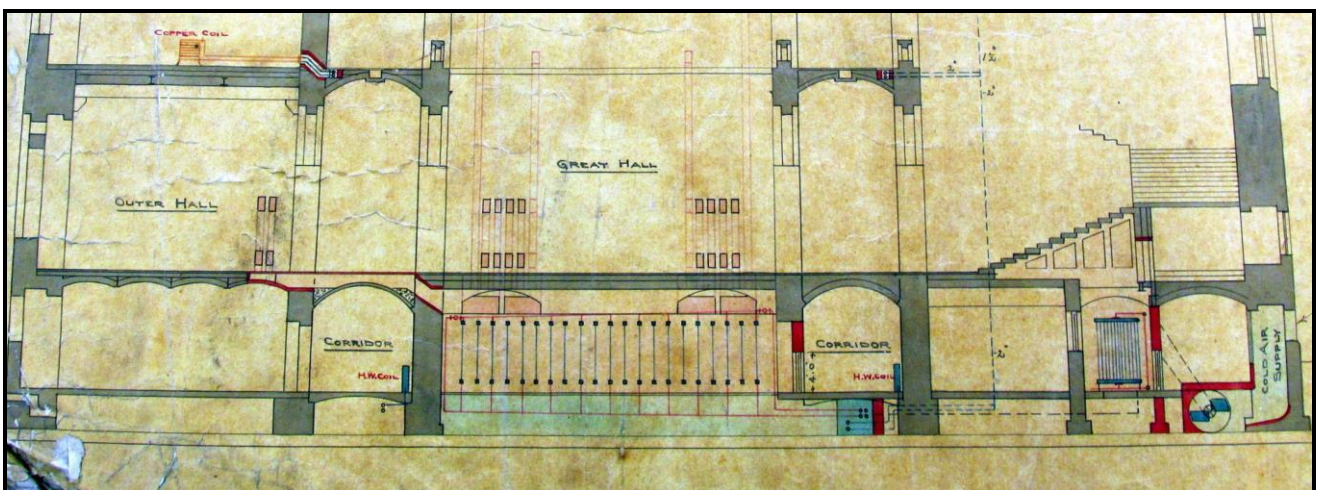
Plan of Phipson's heating and ventilation system



## Pioneering Buildings & Companies

### MOUNT STUART, ISLE of BUTE, 1879-1900

The house was rebuilt in the Gothic style by the architect Robert Rowand Anderson after the fire of 1877. The building is notable for its pioneering engineering services and is said to be the first home in Scotland to have central heating (designed by the engineer Wilson Weatherley Phipson). It also had electric lighting, a telephone system, a Victorian passenger lift and a heated swimming pool.



A large portfolio of Phipson's heating drawings still exists of which the above is a detail. However, Phipson died through overwork in 1891, travelling night and day by train, having covered over 3000 miles in a fortnight supervising his many projects.

# Pioneering Buildings & Companies

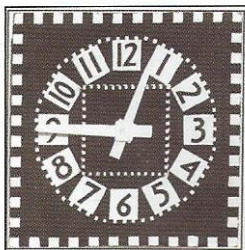
## GLASGOW SCHOOL of ART, 1897-1910



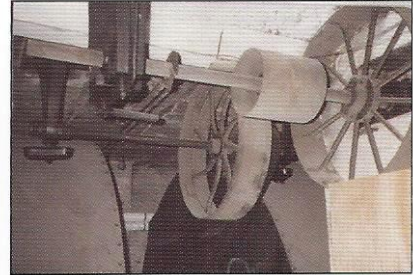
### Glasgow School of Art, 1897-1907

The winner of the architectural design competition for the School was Honeyman and Keppie, within which Charles Rennie Mackintosh was a salaried architect. Keppie had earlier worked with the engineer William Key who had designed a plenum system for the Glasgow Victoria Infirmary, opened in 1890. Key, with Robert Tindall, took out British Patent No. 19,900 in 1892 which detailed a basic air conditioning system to control temperature, humidity and air cleanliness, using water sprays, blocks of ice, steam coils and hanging rope filter screens. The specification of 1896-97 for the first phase of construction of the School refers to a ventilation system having water sprays and hung rope air filters, but no direct link with Key has been established. The detailed design was the responsibility of the contractor. In this, B F Sturtevant, who illustrated the principles of such systems in their catalogues of the era and who were suppliers of the two main centrifugal supply fans, may have rendered assistance. During the second phase of construction in 1907-9, both filters and sprays were renewed. The plenum system was taken out of use in the 1920s and replaced by an intrusive radiator system. Recent surveys have shown that the original fans remain with steam heating coils, basement and ceiling ducts and the dampers and grilles largely intact.

A modern study of the environmental systems is "Glasgow School of Art," George Cairns, Charles Rennie Mackintosh Society, Newsletter No.66, Winter/Spring 1995.



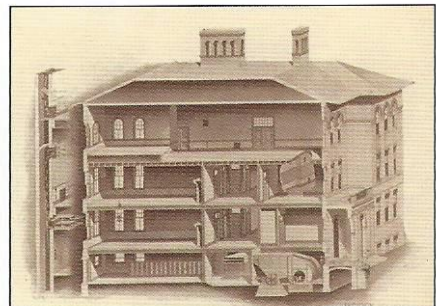
Master clock system



Existing fan-chamber



Existing heating coils



School ventilation  
[Sturtevant catalogue 1896]

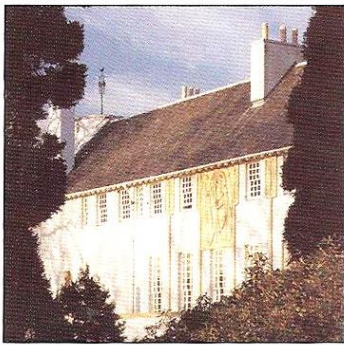
# Pioneering Buildings & Companies

## HOUSE FOR AN ART LOVER, GLASGOW, 1996



Heritage Group Meeting in the Music Room

[l-r: Brian Roberts, Ian Stewart, Bob McWilliam, Stephen Loyd, Mike Barber, Laurie Wilkins. Paul Yunnice took the picture.]



Elevation

### House for an Art Lover, Glasgow, designed 1900, built 1996

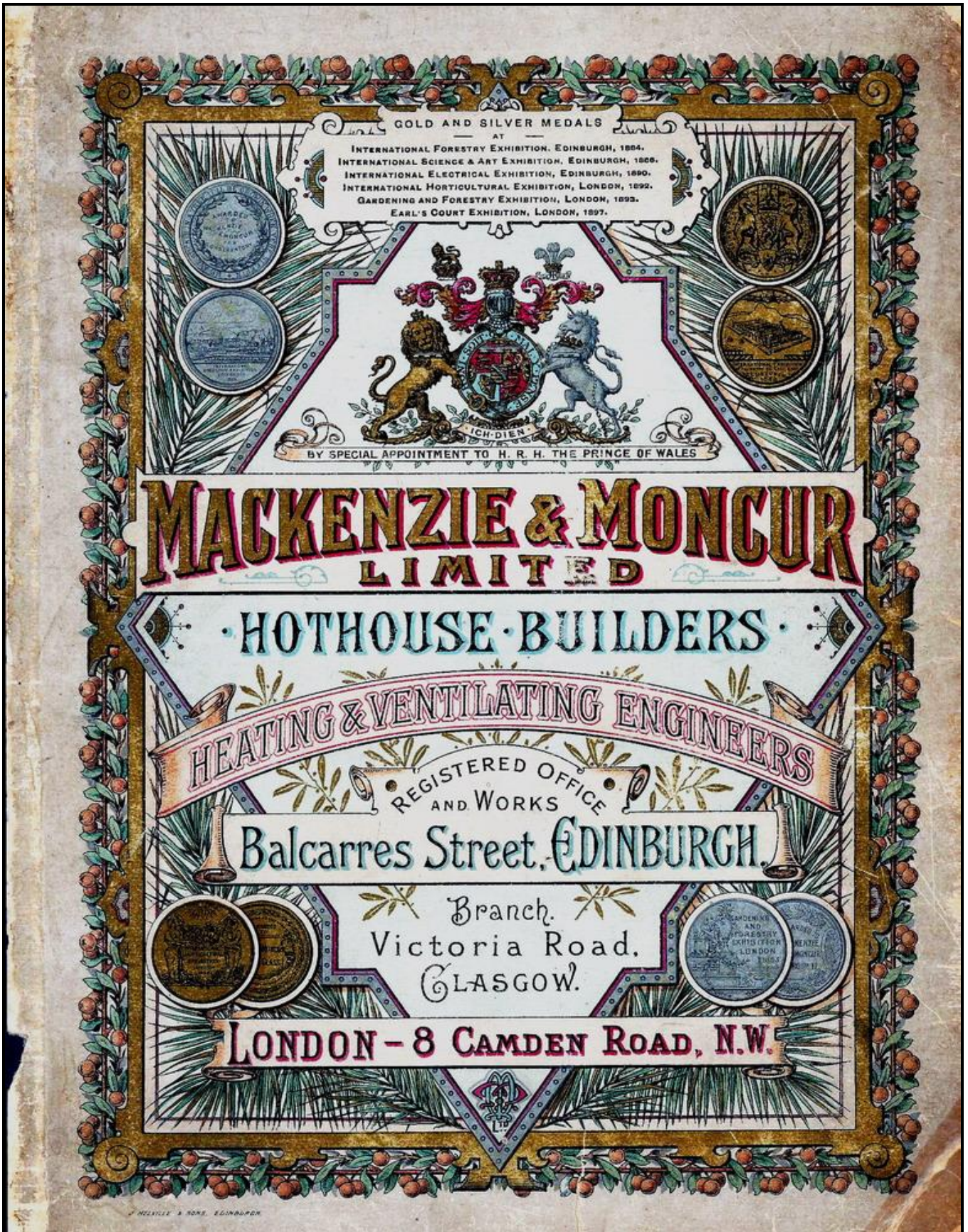
In 1900, the Vienna magazine *Zeitschrift für Innendekoration* announced a competition for the design of a house for a connoisseur of the arts. No first prize was awarded, but Glasgow architect Charles Rennie Mackintosh won a Special Prize. He died in 1928, his house unbuilt. Then in 1988, Graham Roxburgh, a Glasgow Civil Engineer, took on the challenge of building the Mackintosh house. The story of the fund-raising and the many difficulties, which had to be overcome, are a story in themselves. The completed house stands in Bellahouston Park. It serves as a tourist attraction, conference centre and art school. The M&E engineer was Donald Smith Seymour and Rooley but the services are modern, as required for a public building. However, the decorative lighting is in the true Mackintosh tradition.

“House for an Art Lover,” book produced by Glasgow City Council and others, Glasgow, 1996.



Entrance Hall

**Pioneering Buildings & Companies**  
**MACKENZIE & MONCUR, EDINBURGH**



Catalogue of Mackenzie & Moncur, 1900.  
Appointed Hothouse Builders and Heating Engineers to HRH The Prince of Wales in 1892

# Pioneering Buildings & Companies

## MACKENZIE & MONCUR, EDINBURGH

The firm was established in 1869 and is known to have been carrying out heating installations in 1879. Their 1900 "List of Specialities" (below) shows that they undertook high and low pressure hot-water heating, steam heating, natural and mechanical ventilation and supplied boilers, radiators, valves and fittings as well as gas and cooking apparatus. In 1954-55, Ian Mackenzie served as President of the Heating & Ventilating Contractors' Association.

MACKENZIE & MONCUR, LIMITED.

**LIST OF SPECIALITIES**

WINTER GARDENS      CONSERVATORIES  
 & VINERIES and all other kinds of FRUIT HOUSES.

Forcing Houses      Orchid Houses      Plant Houses.

VERANDAHS

GARDEN PITS AND FRAMES. SASHES, &c.  
 FRUIT ROOMS, POTTING HOUSES, MUSHROOM HOUSES, &c.  
 Iron and Slate Slating, Teak Plant Tubs, Orchid Baskets, Garden Chairs, Fountains, Cisterns.  
 All kinds of HORTICULTURAL WIRE WORK. Blinds for Shading, Vases, Tile Floors, Kerbs, &c.

REPAIRS & PAINTING

Pavilions for Cricket, Golf, Tennis, Bowling, &c.  
 Swimming Baths, Summer Houses, Wooden Shooting Lodges, Cottages, &c.

BAND STANDS

HOT-WATER HEATING FOR ALL KINDS OF HORTICULTURAL BUILDINGS.  
 HOT-WATER APPARATUS, HIGH AND LOW PRESSURE, FOR HEATING ALL KINDS  
 OF PUBLIC BUILDINGS, CHURCHES, SCHOOLS, MANSION-HOUSES, VILLAS,  
 WORKS, WAREHOUSES, HARNESS ROOMS, DAIRIES, &c.

STEAM HEATING on the RETURN, GRAVITY, and EXPANSIVE SYSTEMS  
 for PUBLIC BUILDINGS, WORKS, SWIMMING BATHS, &c.  
 Boilers, Patent Radiators, Coils, Valves, and Fittings for all kinds of Heating Apparatus.

GAS HEATING APPARATUS

Atmospheric and Mechanical VENTILATION for BUILDINGS.  
 Steam Cooking Apparatus, Stable Fittings, Railings, Gates, &c.

EDINBURGH, GLASGOW, & LONDON.

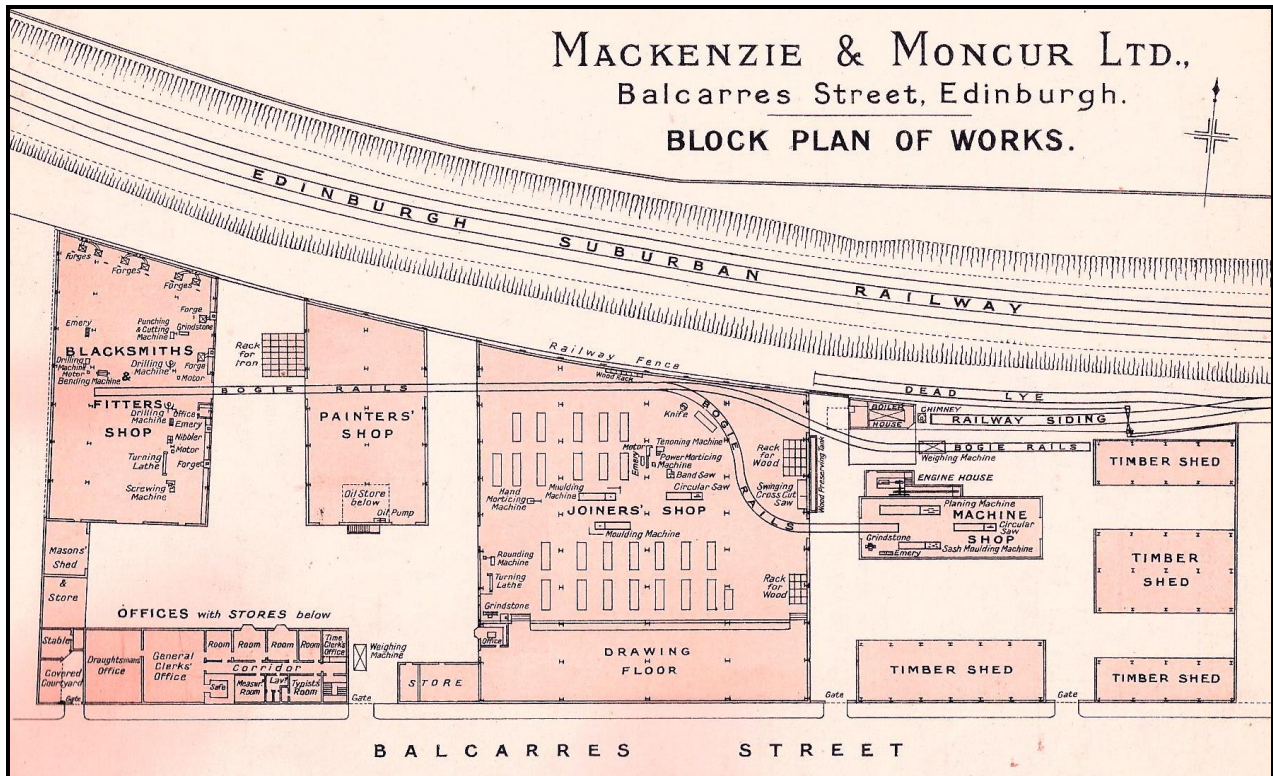
Coil Case No. 1      Coil Case No. 2  
 In Teak with Grating Panels, can be made to any design.

Radiator No. 1      Ventilating Radiator      Section      Radiator No. 2

Plan      Plan      Plan

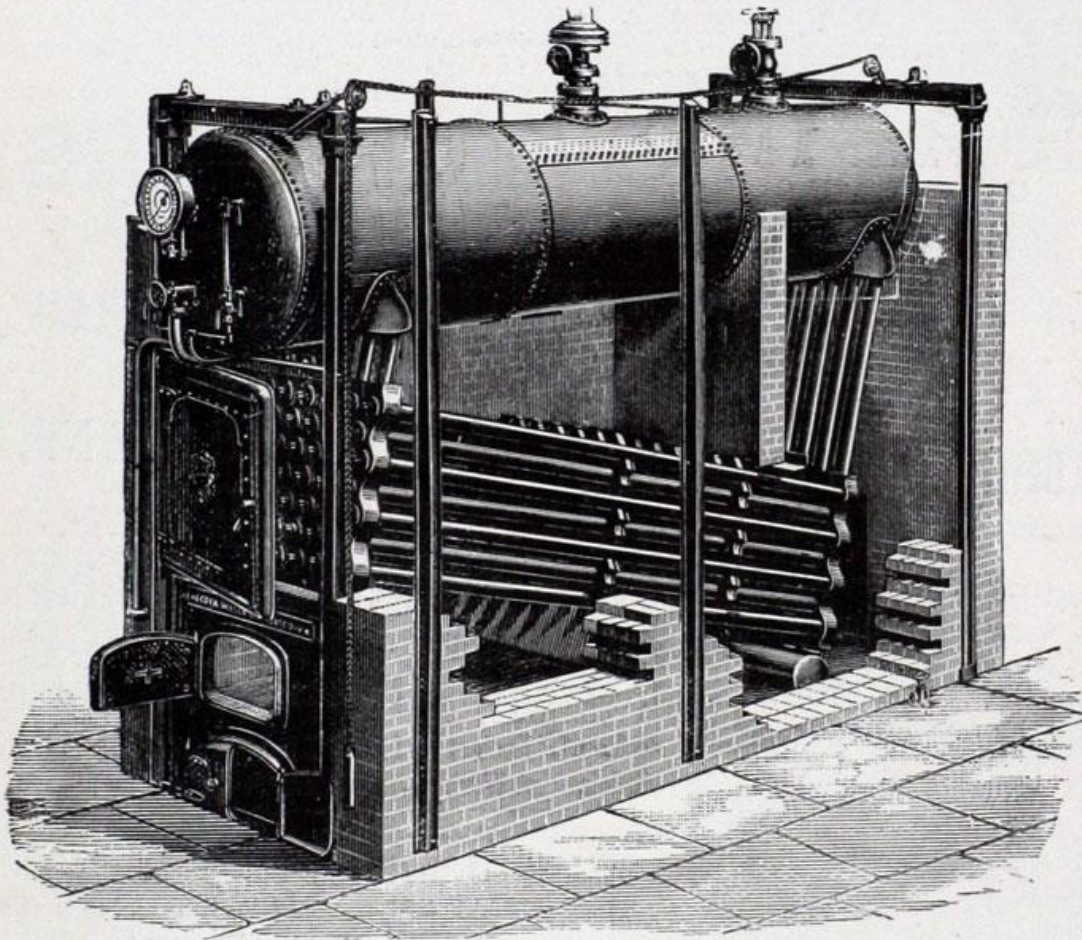
Low-Pressure Coil, All Sizes      Pedestal Radiator      High-Pressure Coil, All Sizes

MACKENZIE & MONCUR, EDINBURGH, GLASGOW, AND LONDON.



Pioneering Buildings & Companies  
BABCOCK & WILCOX, RENFREW

**BABCOCK & WILCOX, L<sup>D</sup><sub>CO</sub>**  
ENGINEERS and MANUFACTURERS of  
**WATER TUBE STEAM BOILERS,**  
2,000,000 HORSE POWER IN USE.



EUROPEAN WORKS AND OFFICES:

**RENFREW, near GLASGOW.**

LONDON: 147, Queen Victoria Street, E.C. GLASGOW: 21, St. Vincent Place.

MANCHESTER: 28, Deansgate. PARIS: 15, Rue de la Chaussée d'Antin.

BRUSSELS: 68, Boulevard du Nord. MILAN: 7, Via Dante.

Australasian Office—SYDNEY: 83, Pitt Street.

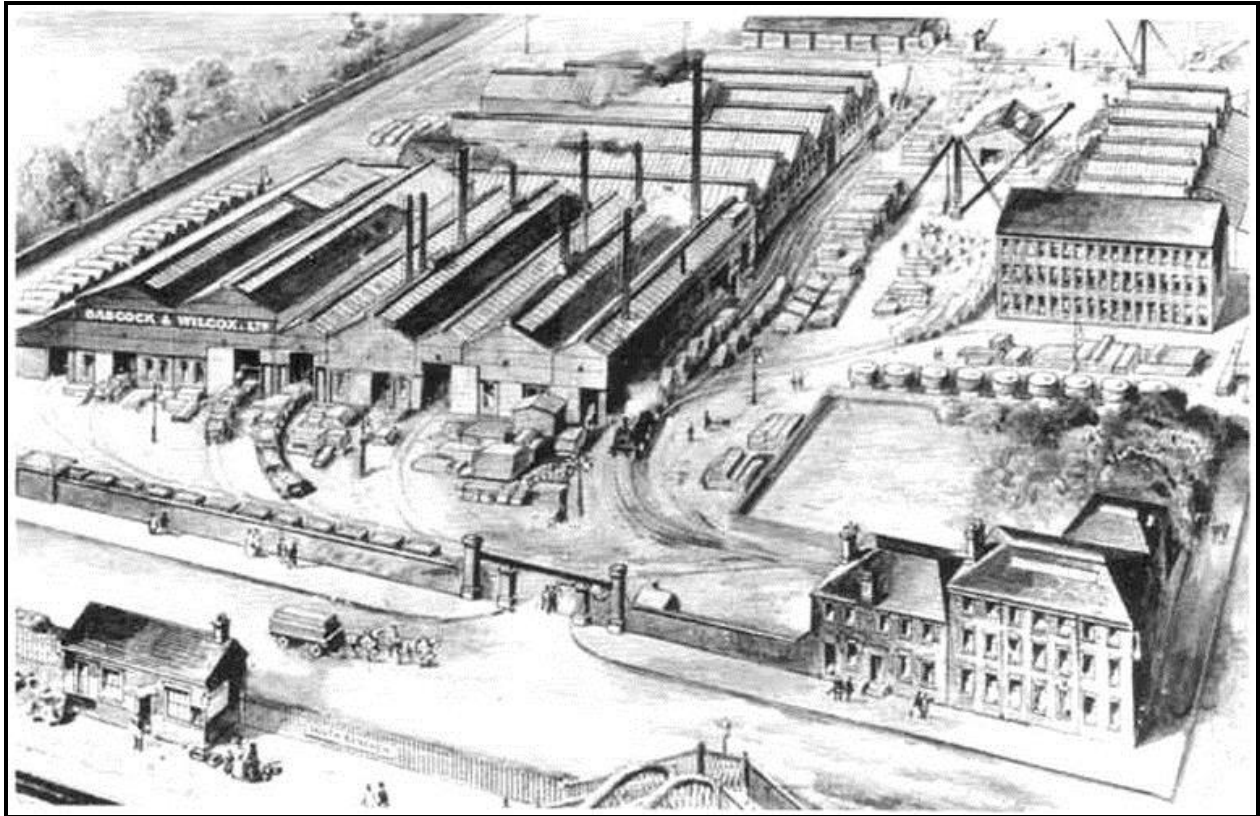
“STEAM,” a valuable Treatise Free on Application.

37

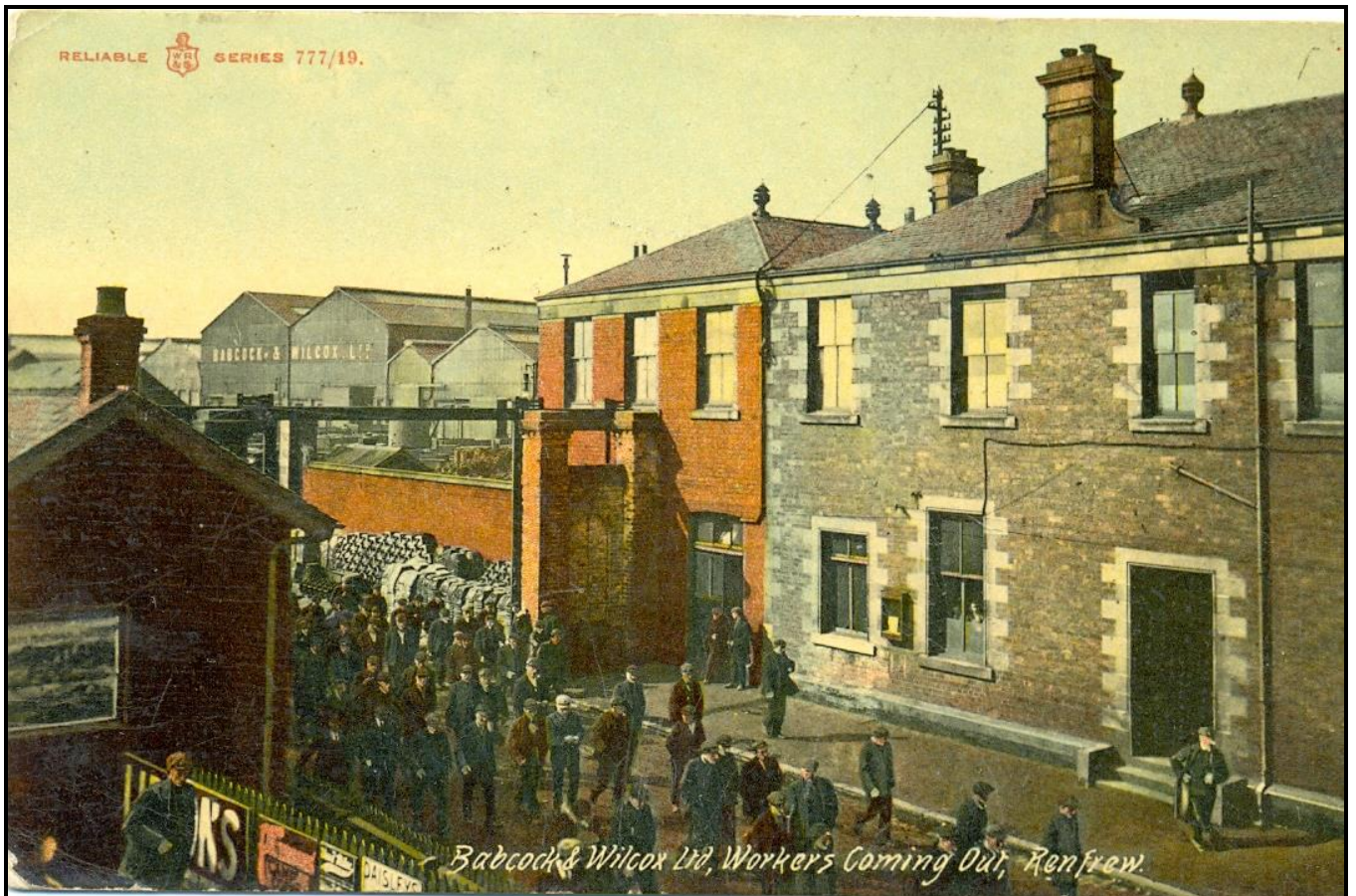
Advertisement of 1898: Company was established in 1823

# Pioneering Buildings & Companies

## BABCOCK & WILCOX



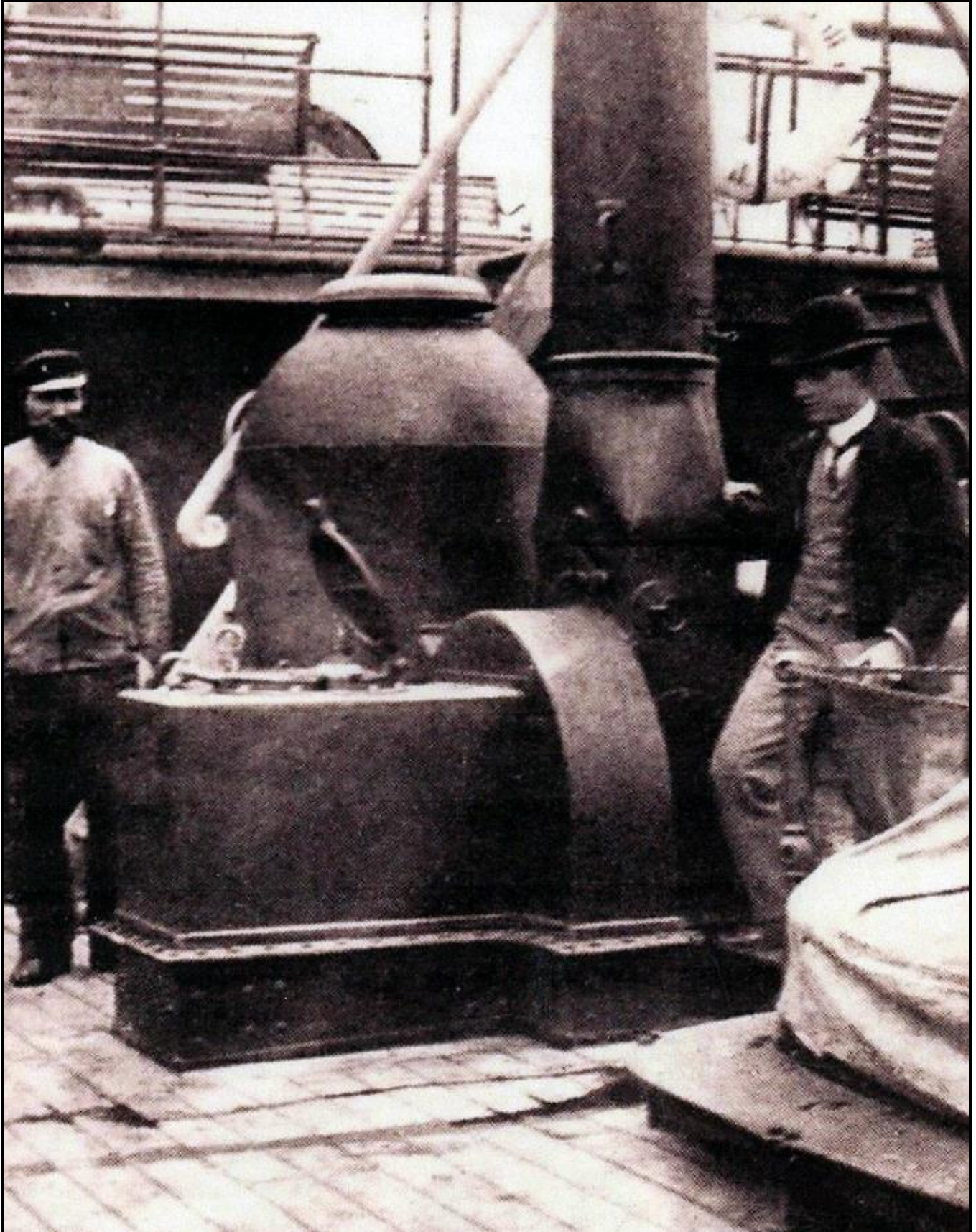
The Renfrew Factory was opened in 1897



1915 postcard

## Pioneering Buildings & Companies

### THERMOTANK, GLASGOW



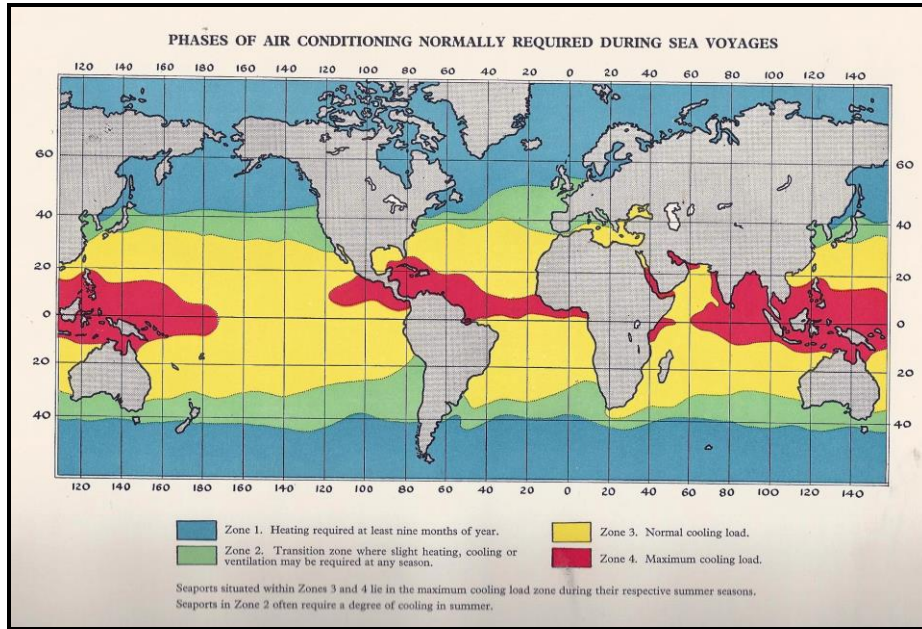
The first "Thermotank" ventilating unit was fitted to the Russian ship Kostrama c.1900.  
Its inventor, A W Stewart is standing on the right.



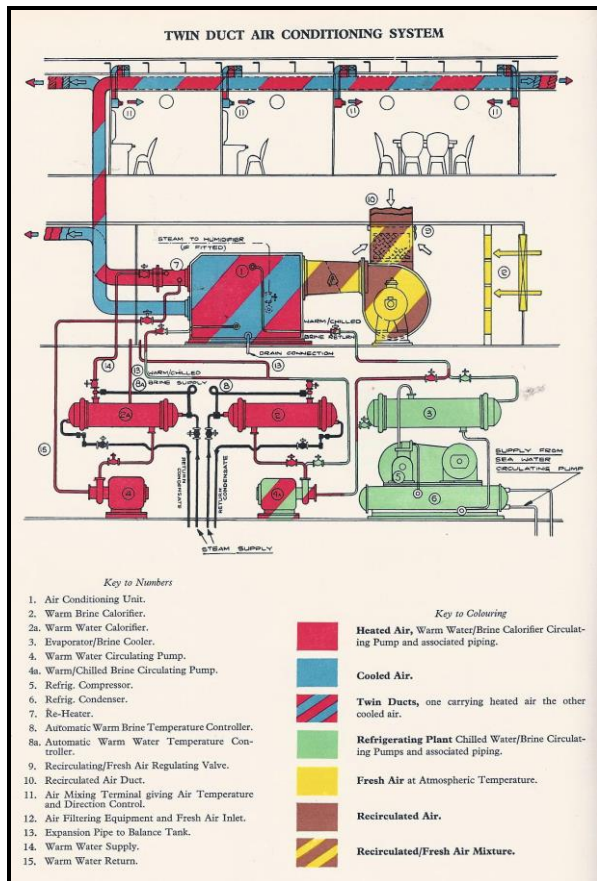
# Pioneering Buildings & Companies

## THERMOTANK

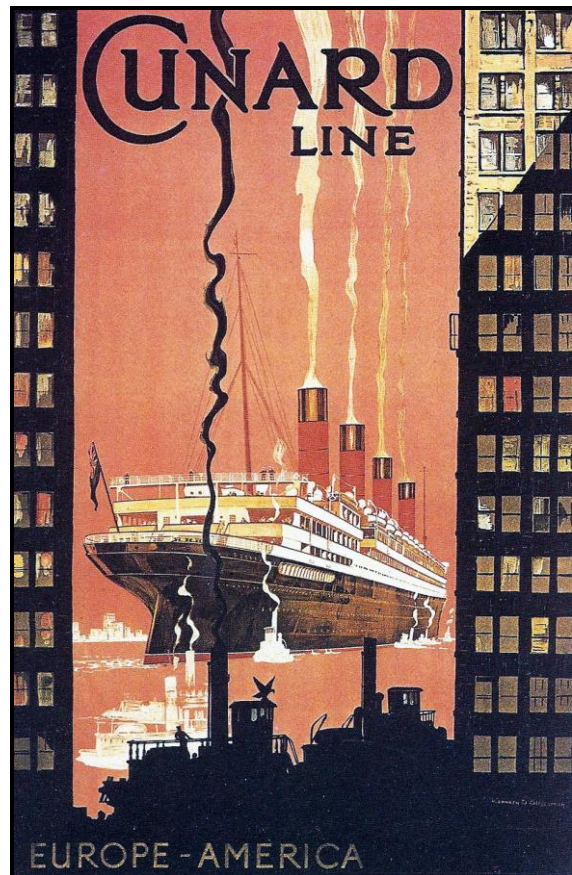
The activities of Thermotank Ltd date back to the beginning of the 20<sup>th</sup> century. The firm was a pioneer in the application of ventilating and warm air heating for ships, operating from 150 Helen Street in Glasgow. It later developed air conditioning for ships, trains and buildings. It provided equipment for many of the famous liners built on the Clyde, from the old Mauretania and Lusitania to the Queen Mary and Queen Elizabeth.



World Design Principles from “Marine Air Conditioning, Heating & Ventilation,” Thermotank Limited, c.1958

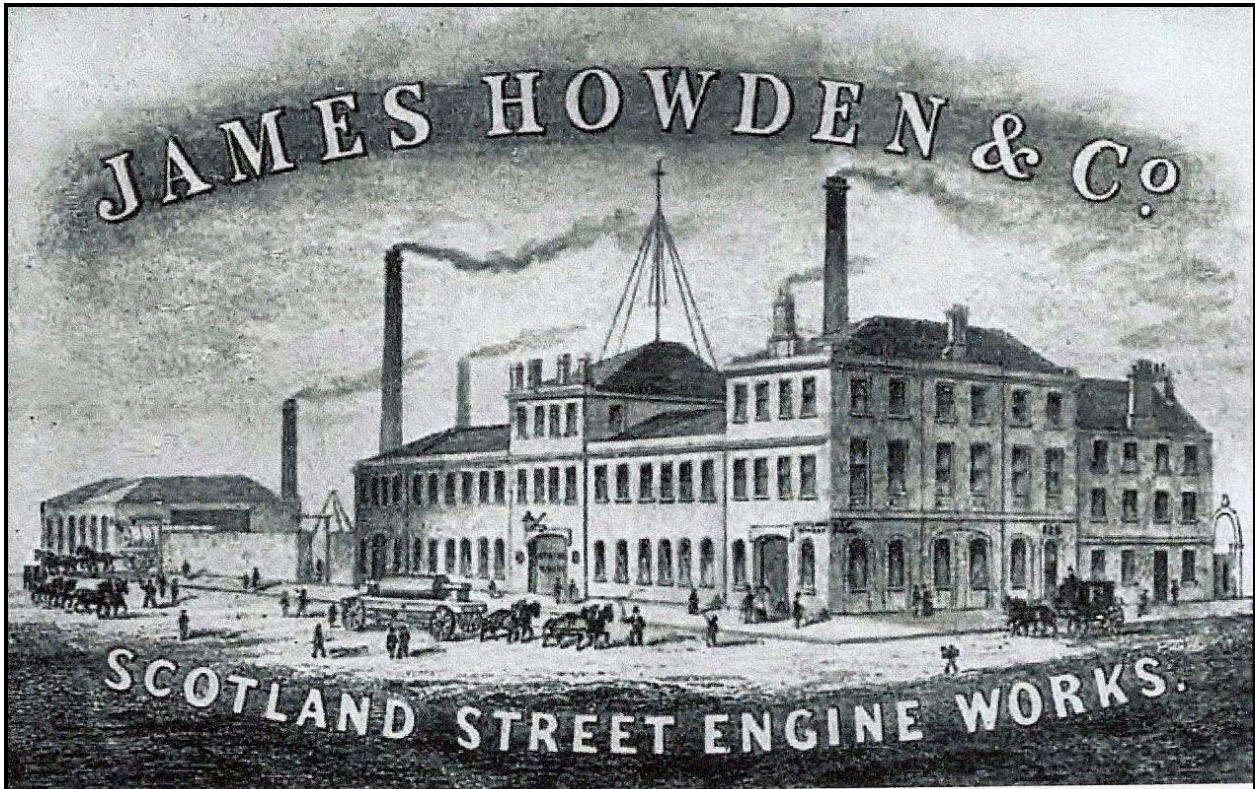


Thermotank Marine Air Conditioning System

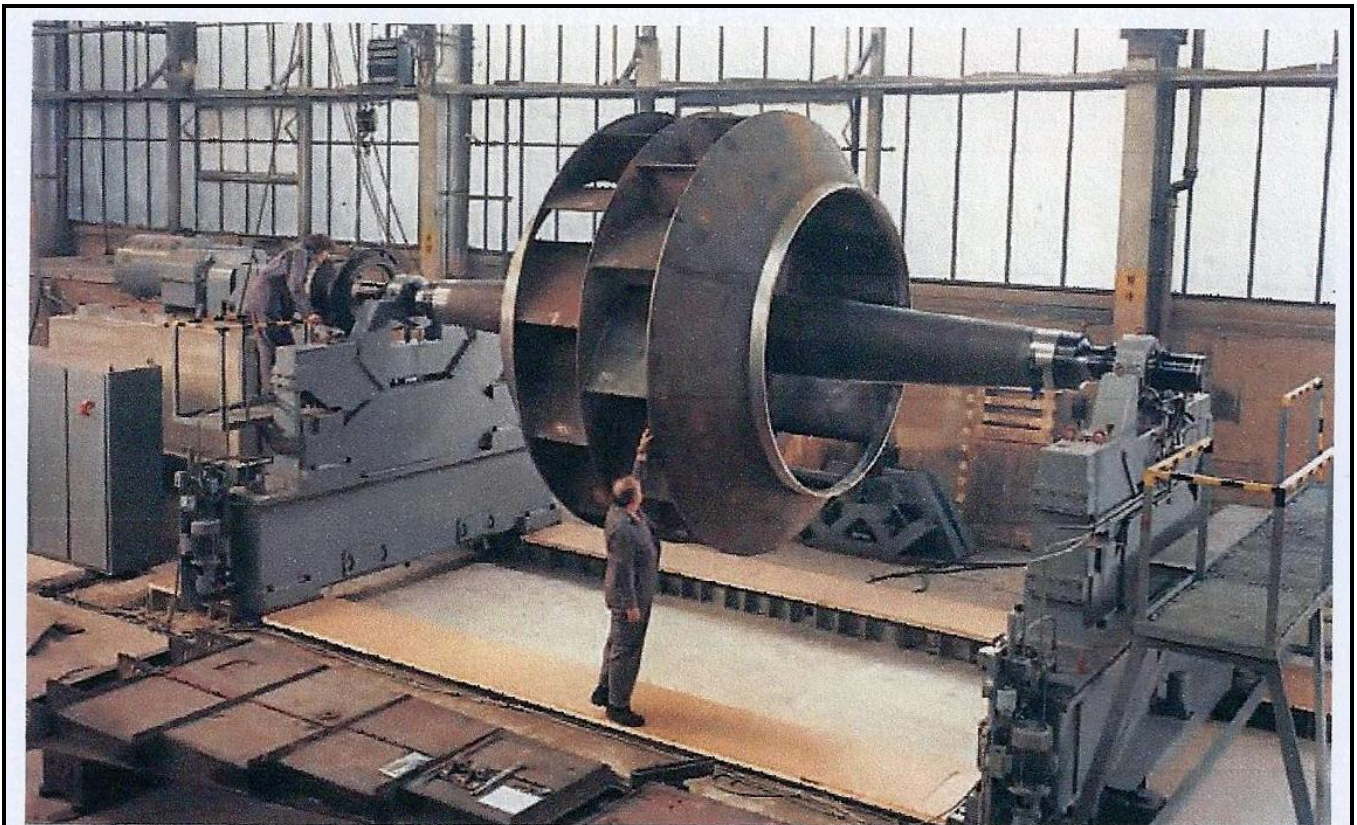


RMS Aquitania 1914, fitted with Thermotanks

**Pioneering Buildings & Companies**  
**JAMES HOWDEN & COMPANY, GLASGOW**



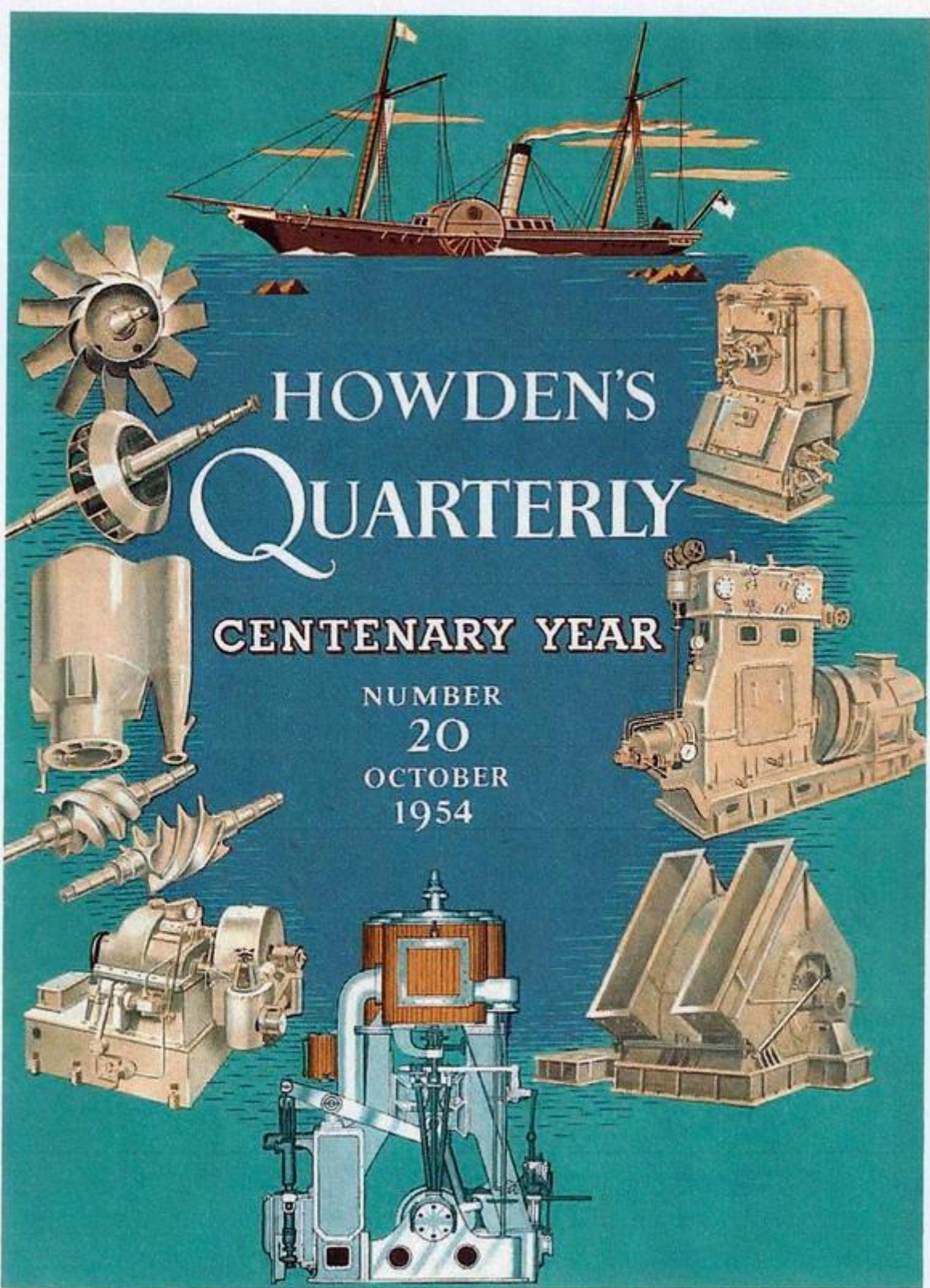
*The first Howden engine works at 4, Scotland Street, Glasgow, built in 1862*



*A 3.55m Z9 double inlet fan impeller being prepared for balancing on the Hoffman balance testing machine in the Glasgow Scotland Street works*

# Pioneering Buildings & Companies

## HOWDEN



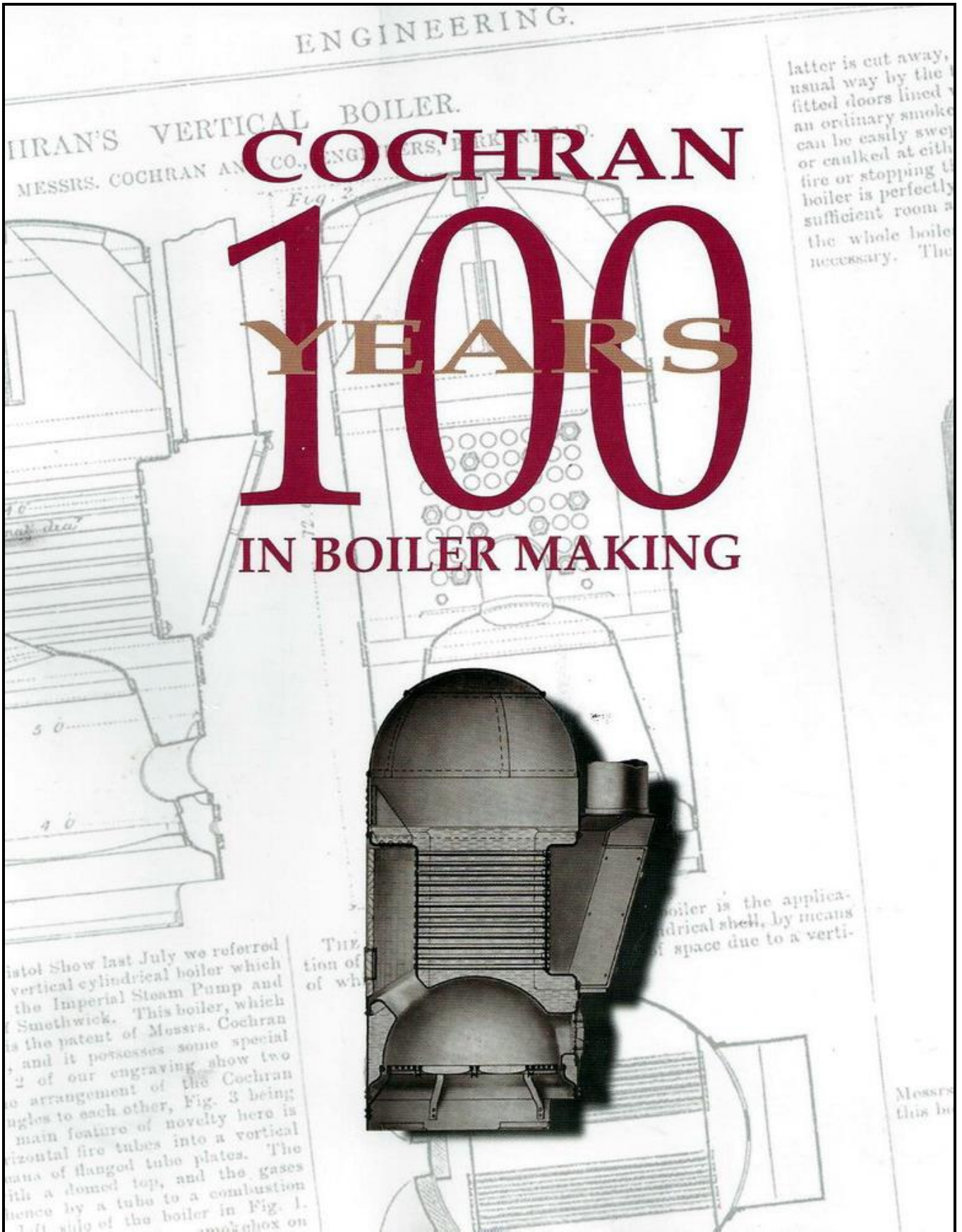
**HOWDEN'S**  
**QUARTERLY**  
**CENTENARY YEAR**

NUMBER  
20  
OCTOBER  
1954

Clockwise from the top: A Victorian era paddle steamer: Howden Patent boiler front: Triple expansion reciprocating steam engine: Double inlet forced draught fan: Auxiliary steam engine circa 1880s: Steam turbine fan drive: Rotors of a Lysholm screw compressor: Vortex dust collector: Double inlet fan impeller and shaft: Variable pitch axial fan impeller.

While manufacturing their own range of fans, Howden acquired both Davidson and Sturtevant

Pioneering Buildings & Companies  
COCHRAN BOILERS of ANNAN

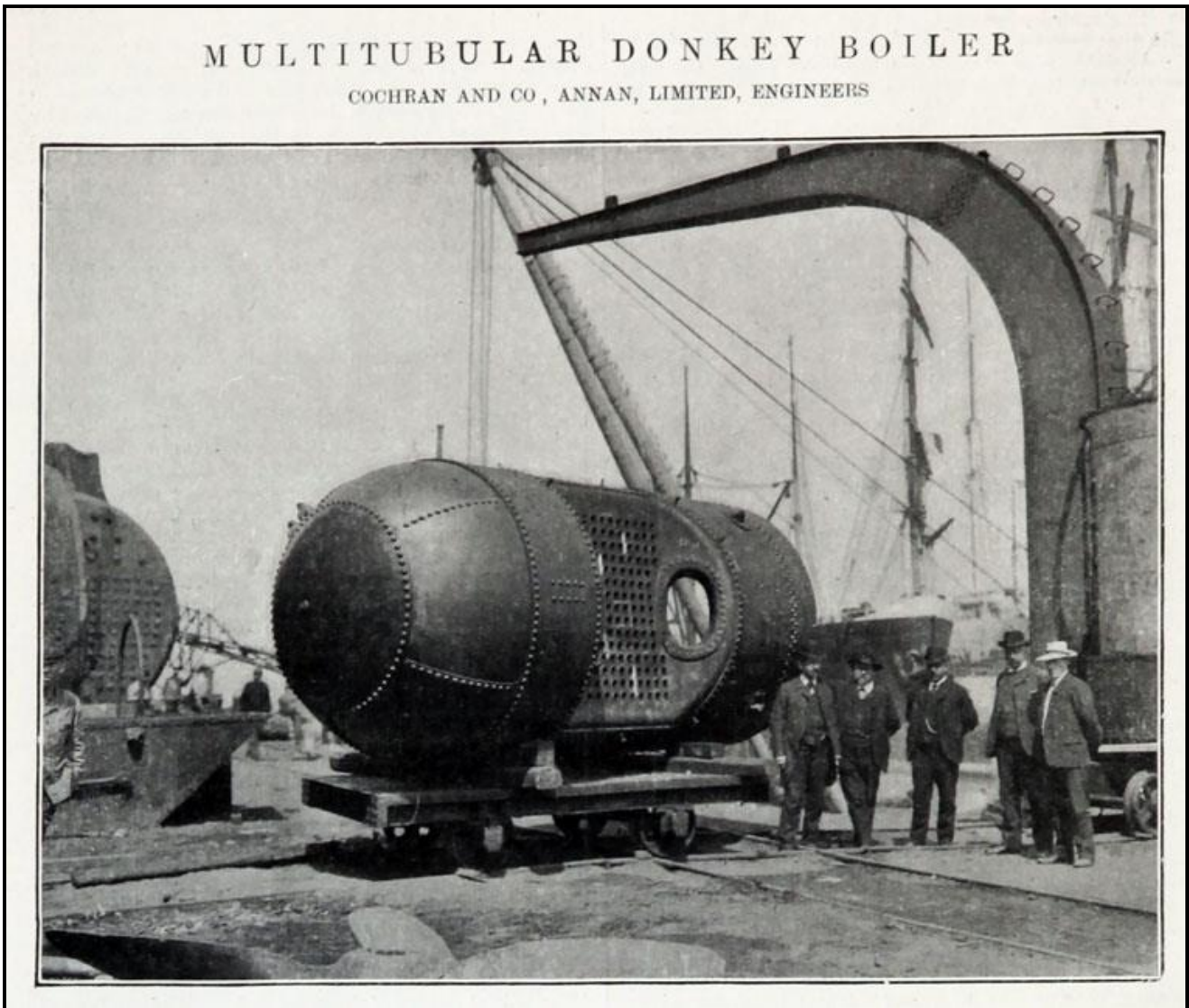
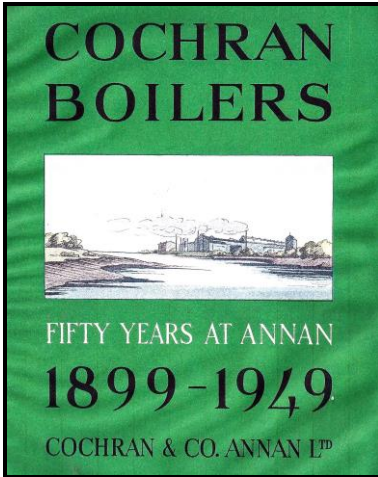


Brochure of 1998

# Pioneering Buildings & Companies

## COCHRAN BOILERS of ANNAN

In 1878, the company was set up in Birkenhead by James Taylor Cochran and Edward Compton. It was Compton who invented and patented what was to become the famous Cochran vertical boiler. The boiler was an immediate success. (The company also produced paddle steamers and two early submarines with their novel steam plants.) When the firm needed larger premises, it moved to Annan in Dumfriesshire where it grew to be a major world-wide exporter of Cochran boilers and where in 1998 it celebrated its one hundred years in Scotland.



**Pioneering Buildings & Companies**  
**DONALD SMITH SEYMOUR & ROOLEY, GLASGOW**



Commissioning the main supply air fan at Glasgow Royal Infirmary  
DSSR was established in Glasgow in 1945

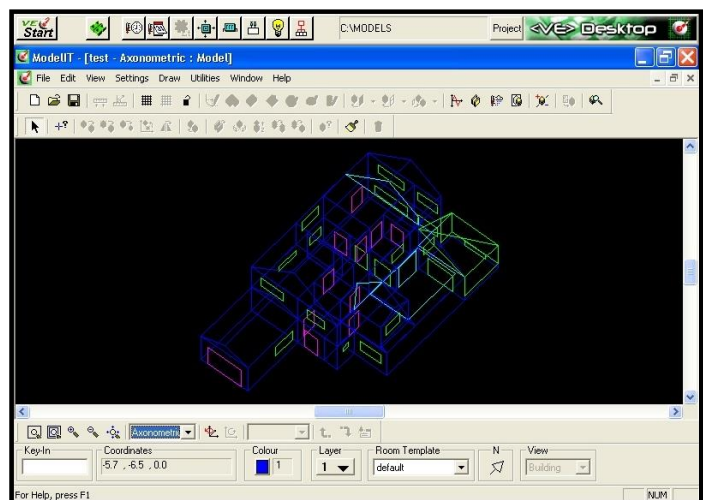
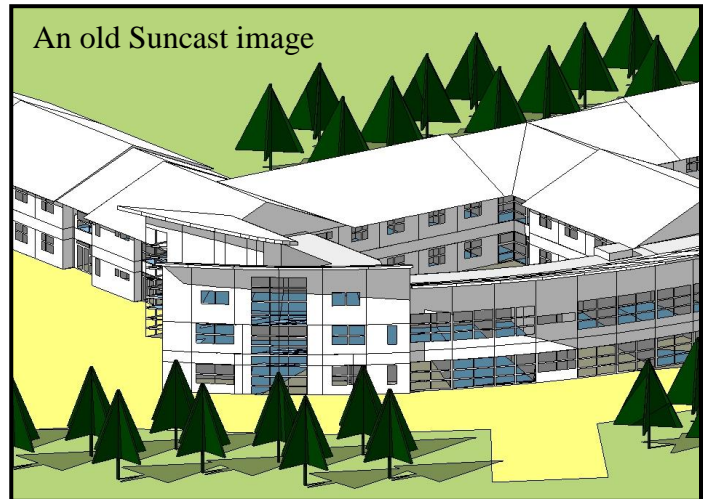
# Pioneering Buildings & Companies

## INTEGRATED ENVIRONMENTAL SOLUTIONS (IES)

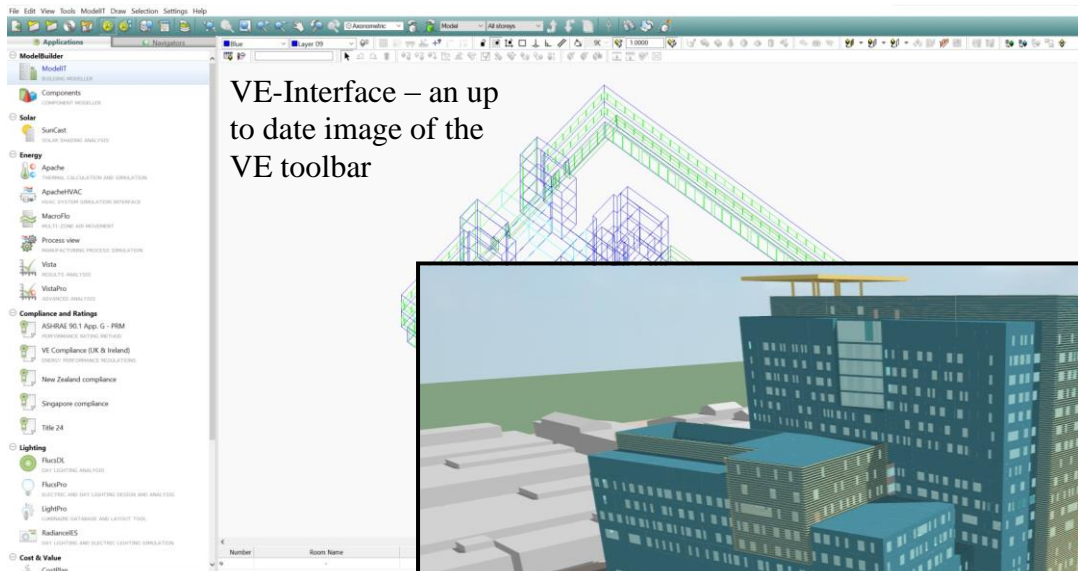
The use of computational design tools has transformed the building services design and construction industry. Integrated Environmental Solutions (IES) was formed in Scotland in 1994 with the aim of commercially developing tools for the building services, architecture and construction industry. It remains the global industry leader in this market expanding from tools used on individual buildings to helping create sustainable cities. Today its technology and consulting services uncover hidden cost, energy and carbon savings that support smarter energy-efficient choices across new building investments, building operation and refurbishment of existing buildings.

From thermal modelling for design analysis, compliance with energy regulation, energy assessment, LEED, BREEAM, airflow modelling, daylight analysis, lighting modelling and many other analysis tools, IES's software packages are used in over 140 countries around the globe.

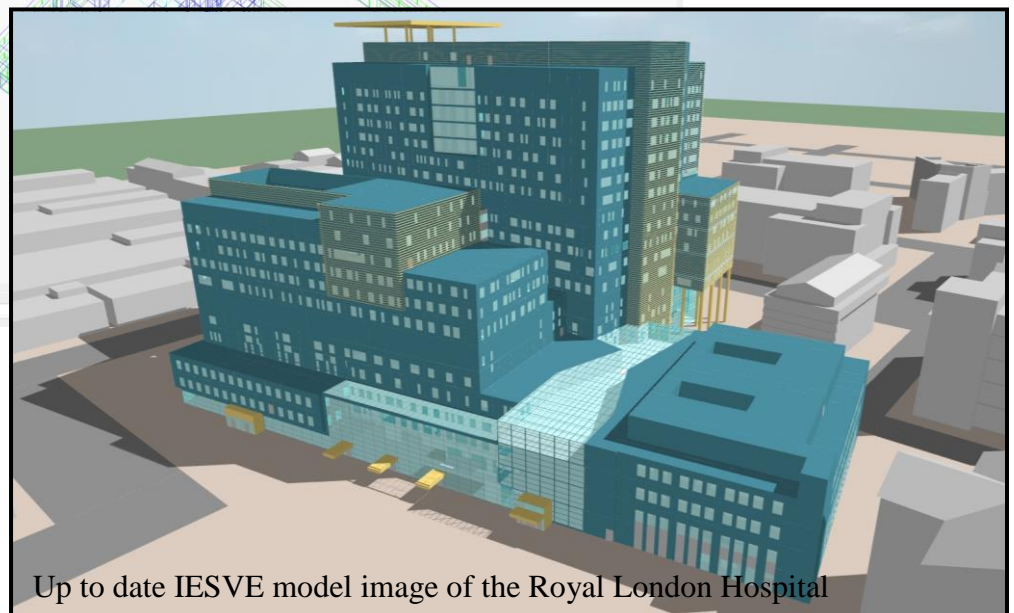
Today, IES supports CIBSE Scotland by providing technical seminars and an online training package as part of the CIBSE Student Award.



The first IESVE toolbar



VE-Interface – an up to date image of the VE toolbar



Up to date IESVE model image of the Royal London Hospital

**Pioneering Buildings & Companies**  
**RICHARD IRVIN SERVICES GROUP, ABERDEEN**



Boiler House & Chimney (Richard Irwin Building Services)  
(The original Company dates back to 1871)



# Pioneering Buildings & Companies

## ARUP, SCOTSTOUN HOUSE



Arup first began to practise in Edinburgh in 1960. Scotstoun House was designed principally by the late Peter Foggo of Arup Associates during 1964/1965 and occupied in December 1966. It has been owned and used by Arup for 45 years.

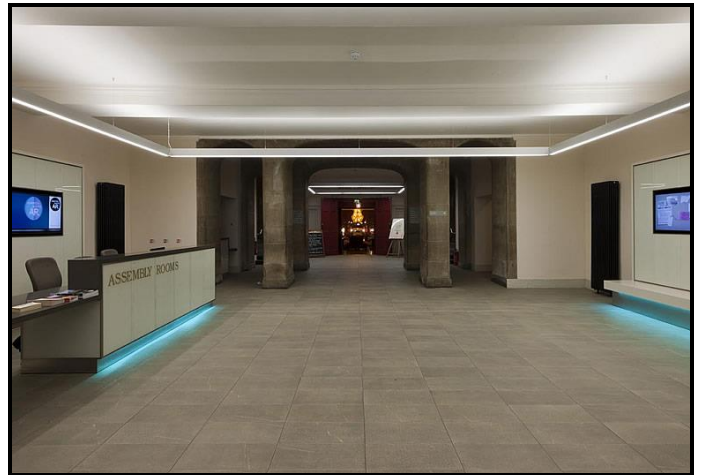
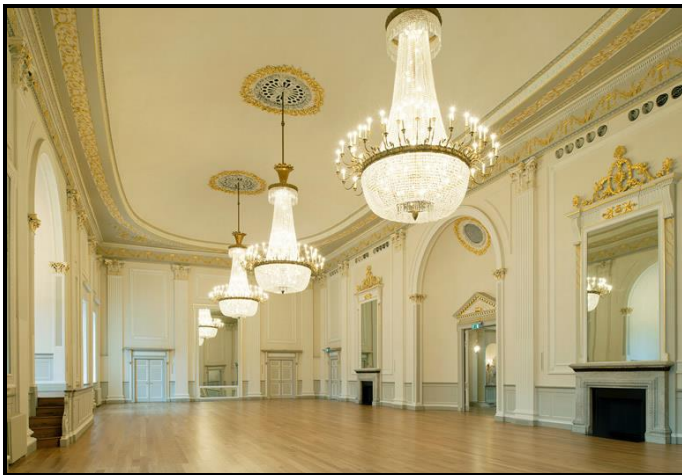
The building was reopened in July 2010 following extensive refurbishment incorporating new low energy design, by focussing on building form, natural ventilation and natural lighting resulting in receiving a BREEAM Excellent rating and an EPC A-rating. Arup say the building has been given a new lease of life, with a greatly improved working environment for all staff and a welcoming and relaxed experience for visitors.



Photos by Alan McAteer Photography

# Pioneering Buildings & Companies

## THE ASSEMBLY ROOMS, GEORGE STREET, EDINBURGH



The major refurbishment of the grade-A listed venue required the ‘invisible mending’ approach to the main historic spaces and a contemporary treatment to other areas to incorporate 21st century facilities into the 18th century building. The major challenge to the designers on this and similar projects is how to incorporate major new services systems for HVAC, production and audio-visual facilities into the historic fabric without ruining the building in the process. Irons Foulner said that in such projects building services engineers are expected to be the SAS of the industry – get in and out without anyone noticing that you have been there!

*BSE Design: Irons Foulner Consulting Engineers*

*BSE Sub-Contractor: Shepherd Engineering Services*

# Pioneering Buildings & Companies

## NEW TECHNOLOGY AND BUILDING TYPES

With the exponential increase in internet usage over the last two decades the development of smart buildings, remote monitoring and cloud data storage has introduced a new type of building to our industry - Data Centres.



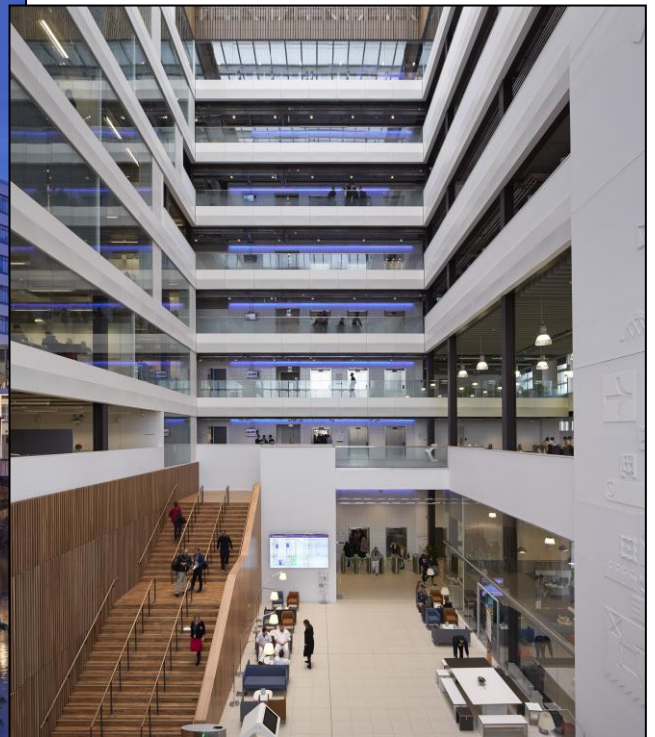
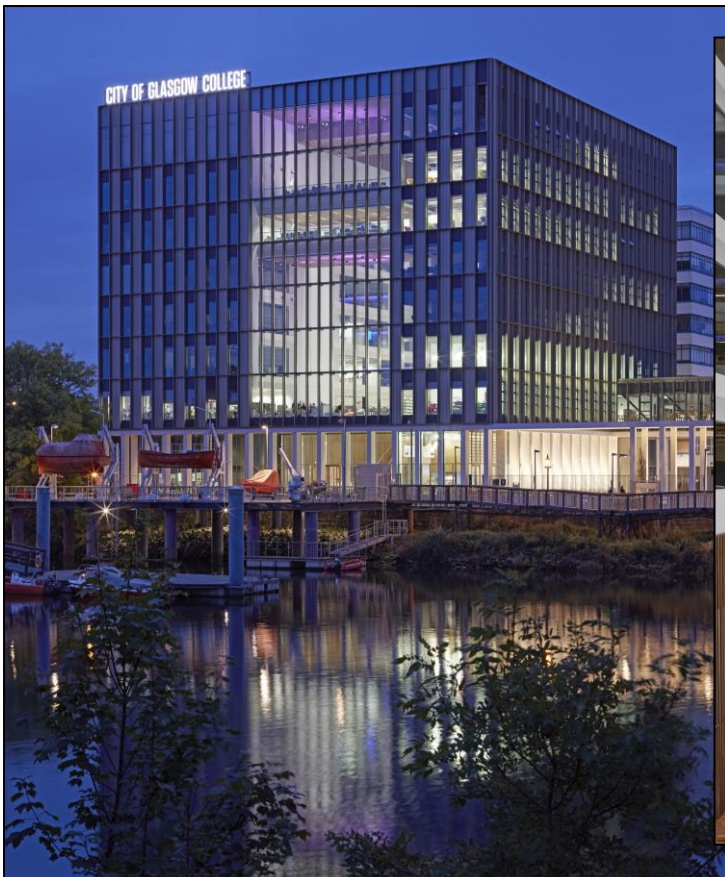
### ***Fortis Data Centre***

*BSE Designer – TUV-SUD Wallace Whittle*

*BSE Contractor – FES*

The First Facility in Scotland to achieve Design and Construction Certification for The Uptime Institute Tier III standard.

Fortis is the first speculative purpose built Data Centre in Scotland.



### ***City of Glasgow College – Riverside Campus***

*BSE Designer – Hulley & Kirkwood*

*BSE Contractor – FES*

*Completed 2016*

# New Building for 2016 and Beyond

## V&A DESIGN MUSEUM, DUNDEE



*BSE Designer – Arup*

*BSE Contractor – FES*

*Above – architect's impression*

*Below- under construction August 2016*



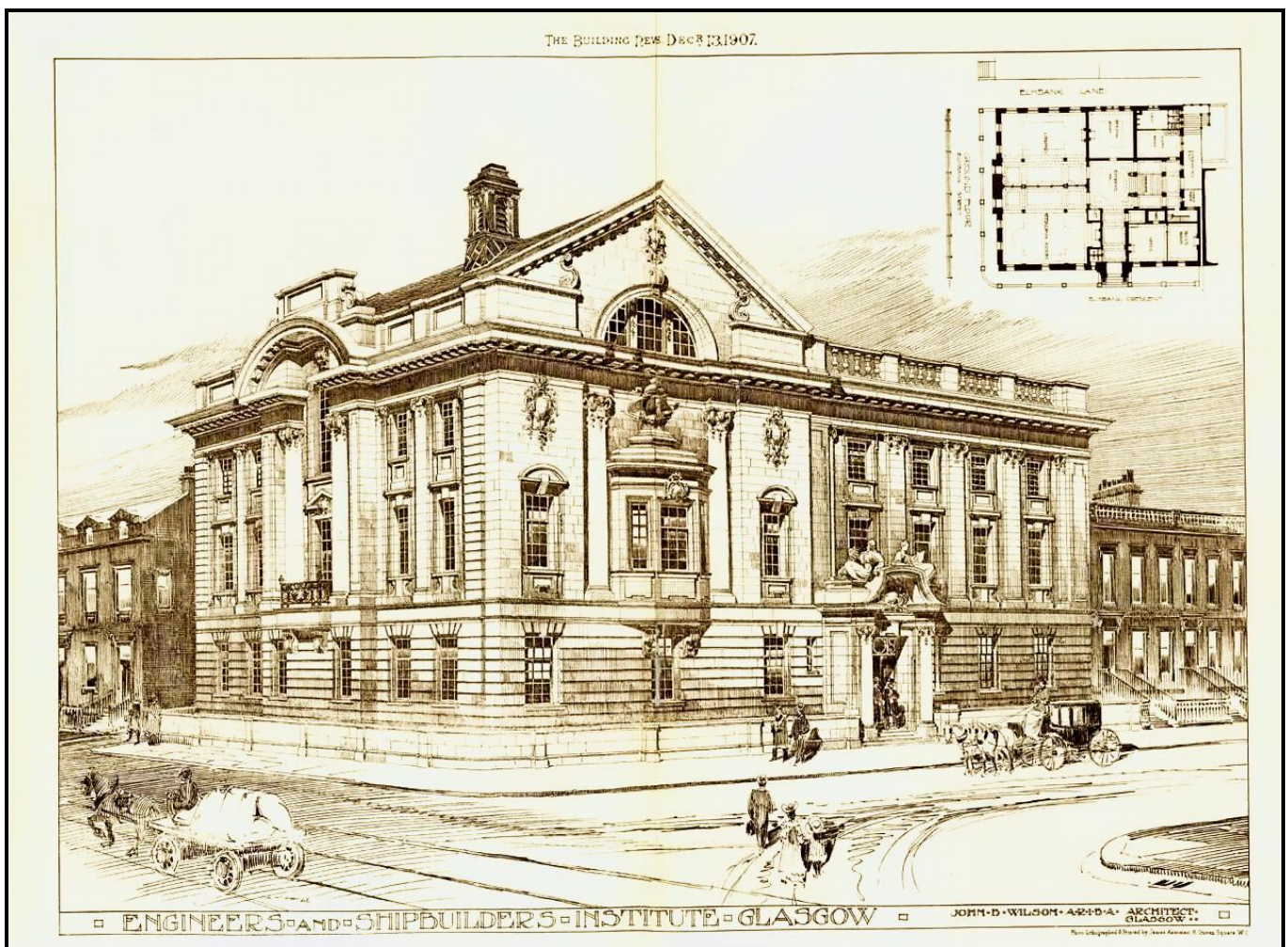
# CIBSE Scotland and the next 80 years

In 1936 Frank Raynes and the new Committee were full of ambition for the possibilities of the future. The Second World War brought forward major developments in technology, materials and engineering skills which would go on to be utilised in the building and construction industry.

What would the 1936 Committee think about the building services industry in Scotland today? Could they have even contemplated the airtight, energy efficient and densely occupied buildings and cities we now have? And what would they think about it?

CIBSE Scotland, as it has over the last 80 years, will continue to develop and evolve along with its members and the construction industry. CIBSE membership in Scotland will grow well beyond current numbers as it spans the entire industry. Consultants, contractors, academics, building facilities professionals, energy analysts, suppliers and many others who have an interest in the built environment will gain immensely from membership.

The 2016 Committee has set several goals which aim to be catalysts for future sustainable development of the committee and sub-groups. These include education and careers; technical development; industry networking and development of young engineers.



The Institution of Engineers & Shipbuilders, Elmbank Crescent, Glasgow, where in 1936 the Inaugural Meeting of the IHVE Scottish Branch was held.

# Education and Careers



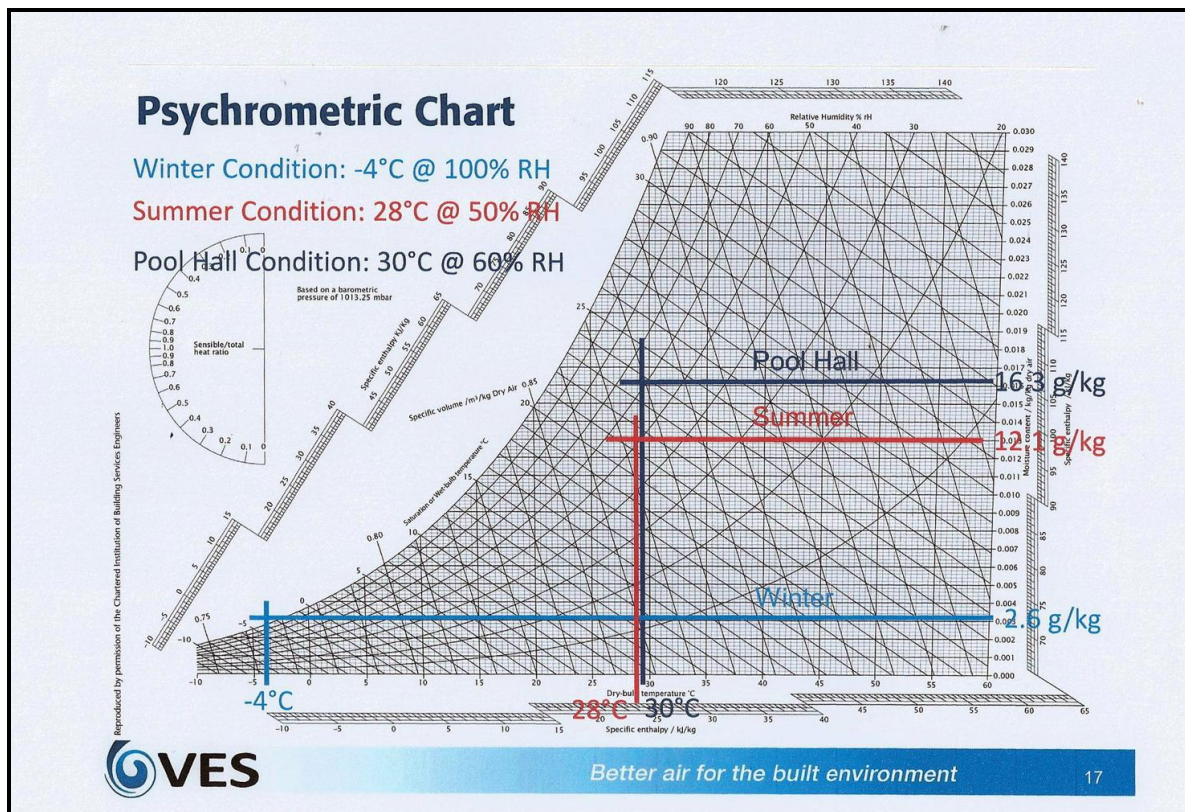
(left) Kiyomi Morag Honjigawa, Heriot-Watt University being awarded the CIBSE Scotland Student Award, presented by Professor Lynne Jack (HWU Deputy Head of School, CIBSE Board)

(right) Kieran McFadden, Glasgow Caledonian University being awarded CIBSE Scotland Student Award, presented by Gerry Brannigan (Chair CIBSE Scotland), with Mark Philipson (GCU Programme Leader)

CIBSE Scotland Student Awards were first introduced in 2016 and presented to the top performing students at each of the CIBSE accredited courses in Scotland. We hope that future committees will continue to support, sponsor and recognise the talent we produce from our Scottish Universities.

We encourage students to look for a building services related course and for more institutions to provide that opportunity. CIBSE Scotland also aims to provide and encourage member support to STEM (Science, Technology, Engineering and Mathematics) initiatives in schools to encourage young people to enter our industry.

# Technical Development



## Swimming Pool Ventilation

In 2015-2016, the Region developed more seminars than ever before. Examples include: Swimming Pool Ventilation; Integration of Pipework Systems; Trench Heating & Cooling and Medical Locations (Electrical). CIBSE Scotland works alongside the Scottish Government and other Statutory Bodies to disseminate information and help shape future development of legislation across the Region.

# Networking Opportunities



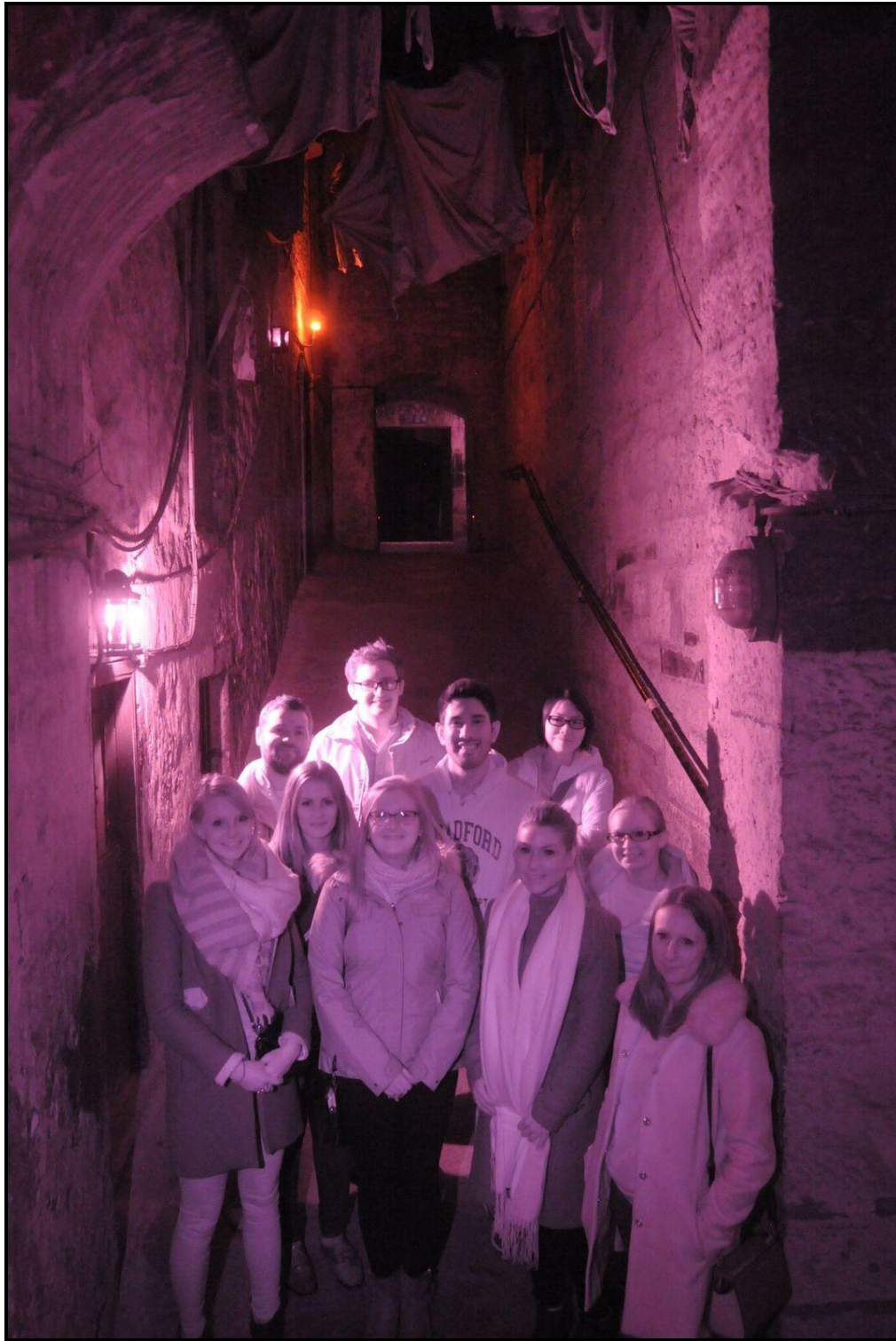
The inaugural CIBSE Scotland Golf Championship of 2016 was held at Eastwood Golf Club

The, already infamous, first attempt at holding the new CIBSE Scotland Golf Championship at the end of April 2016 was snowed off after 4 holes...only in Scotland!

However, after being reorganised for late August there were 80 building services industry professionals networking and playing for the trophy. It is hoped that the success of the first Championship will continue for years to come and allow the gathering together of members of the industry for networking and enjoyment.



# Development of Young Engineers



2016 YEN Conference, Mary Queen Close Tour

The 2016 Committee encourages all young people in the industry to get involved with the YEN (Young Engineers Network). CIBSE Scotland pioneered the formation of a Junior Engineers Group in 1993, with the Junior Section Chairman at that time being Stephen Osborne. This later became the Young Engineers and many members, now in senior positions across Scotland, met during Young Engineers events and were involved in the Committee. YEN promotes the technical development of young minds and personal growth and networking skills. All members should encourage their junior staff and graduates to get involved.

# The Future

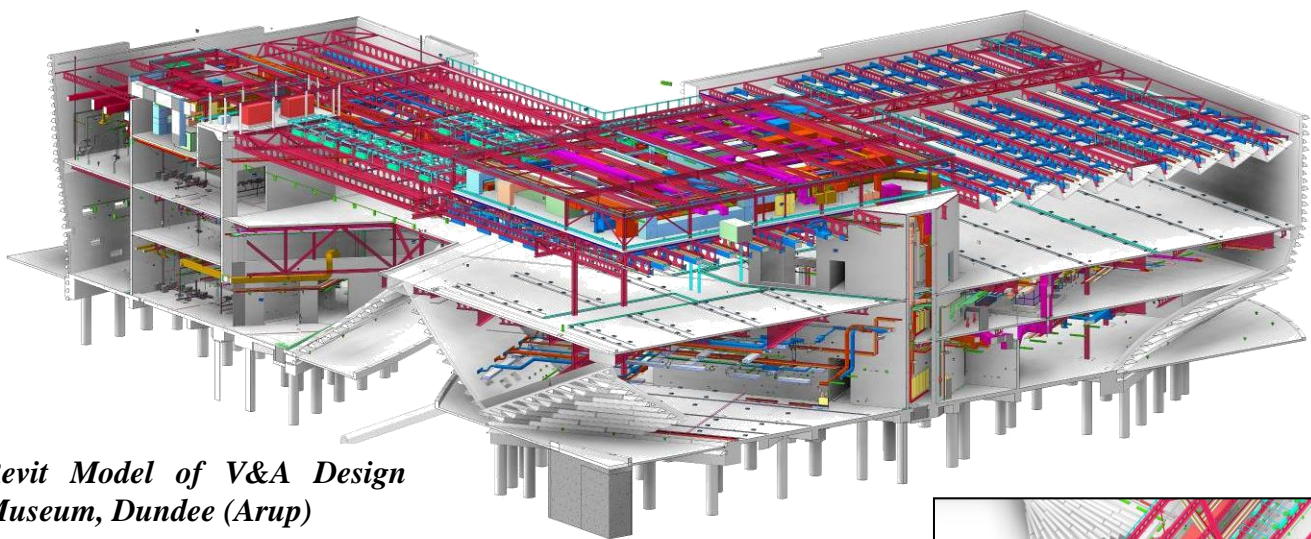
The organisers of the CIBSE Scotland 100<sup>th</sup> Anniversary Dinner in 2036 will look back at this book to see what we have achieved and give them ideas for their commemoration.

Whoever is leading CIBSE Scotland at that time will face challenges that we are unlikely to be able to envisage in 2016:

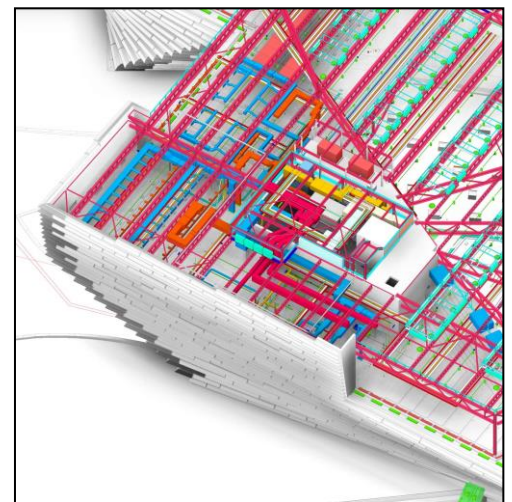
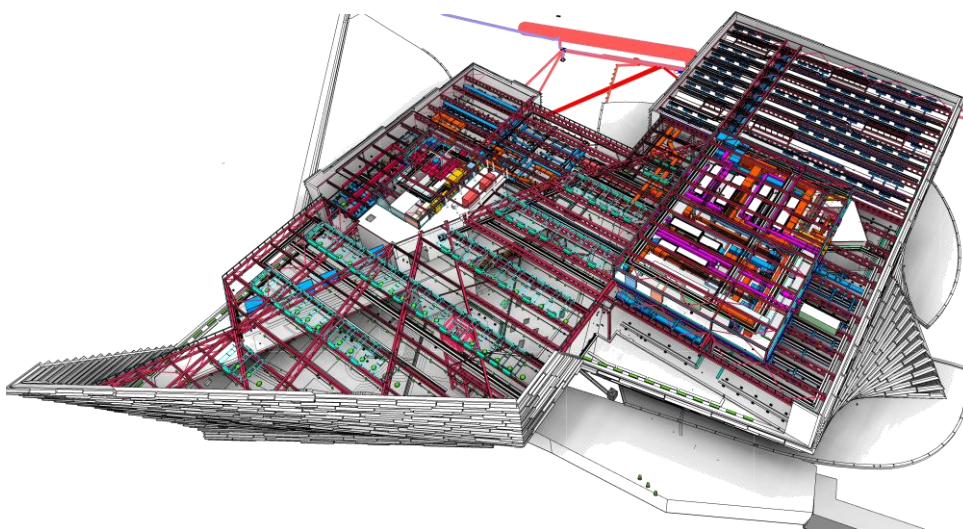
- Will air tightness regulations and high level of insulation with poor ventilation regulations be causing more harm than good?
- Will the evolution of BIM result in more automated construction processes?
- Will all communication and design collaboration be virtual with holographic meeting rooms and no need to travel for business?

Since 1936, at the formation of what was to become CIBSE Scotland building engineering services professionals have evolved to meet the challenges of the day. Frank Raynes and the 1936 Committee would be delighted with the commitment and leadership which followed them by the past Chairs and their committees recognised in this book.

**The 2016 CIBSE Scotland Committee gives thanks to all of the past Chairs and their Committees for the leadership and development which has allowed us to reach this memorable occasion. Just like Frank Raynes and his Committee in 1936, we look forward to a future full of endless possibilities, career challenges and technical developments.**



*Revit Model of V&A Design Museum, Dundee (Arup)*





**CIBSE  
Scotland**

**1936 – 2016 80<sup>th</sup> ANNIVERSARY**

## **2016-2017 Committee Office Bearers**

**Chair:** Gerry Brannigan (*Cadogans*)

**Vice-Chair & Social Committee Chair:** David Seymour (*George Birchall*)

**Honorary Secretary:** Stuart Macpherson (*Irons Foulner*)

**Honorary Treasurer:** Peter Howson (*retired, University of Glasgow*)

**Co-Communications Officer & Technical Meeting Coordinator:**  
Lisa Ann Pasquale (*Six Cylinder*), Jeremy Cockcroft (*University of Strathclyde*)

**Education and Careers Champion:** Lynne Jack (*Heriot-Watt University*)

**Regional Almoner:** John McLean (*retired*)

## **Groups and Society Representatives**

**Society of Light and Lighting:** Tony Ownsworth (*retired, Ramsey & Primrose*)

**Society of Public Health Engineers:** Lynne Jack (*Heriot Watt University*)

**Women in Building Services Engineering (WIBSE):** Mariana Trusson (*Cundall*)

**Young Engineers Network (YEN) Scotland:** Karen Blair (*Hurley Palmer Flatt*)

## **Ordinary Committee Members**

**William Aitchison** (*Robertson Construction*)

**Ruth Best** (*Cundall*)

**Tom Brady** (*Peter Brett*)

**Scott Bramma** (*Balfour Beatty Kilpatrick*)

**Gordon Brown** (*Arup*)

**Stephen Clark** (*Atkins*)

**Iain Fraser** (*Greengage*)

**Michael Gribben** (*CBRE*)

**Robert Jackson**

(*University of West of Scotland Estates*)

**David Kinghorn** (*Arup*)

**Ruairidh MacDonald** (*AECOM*)

**Lori McElroy** (*BRE Scotland*)

**Glyn Mountford** (*GEP Environments*)

**Rebecca Michaelsen** (*Cundall*)

**Segun Olarinoye** (*DSSR*)

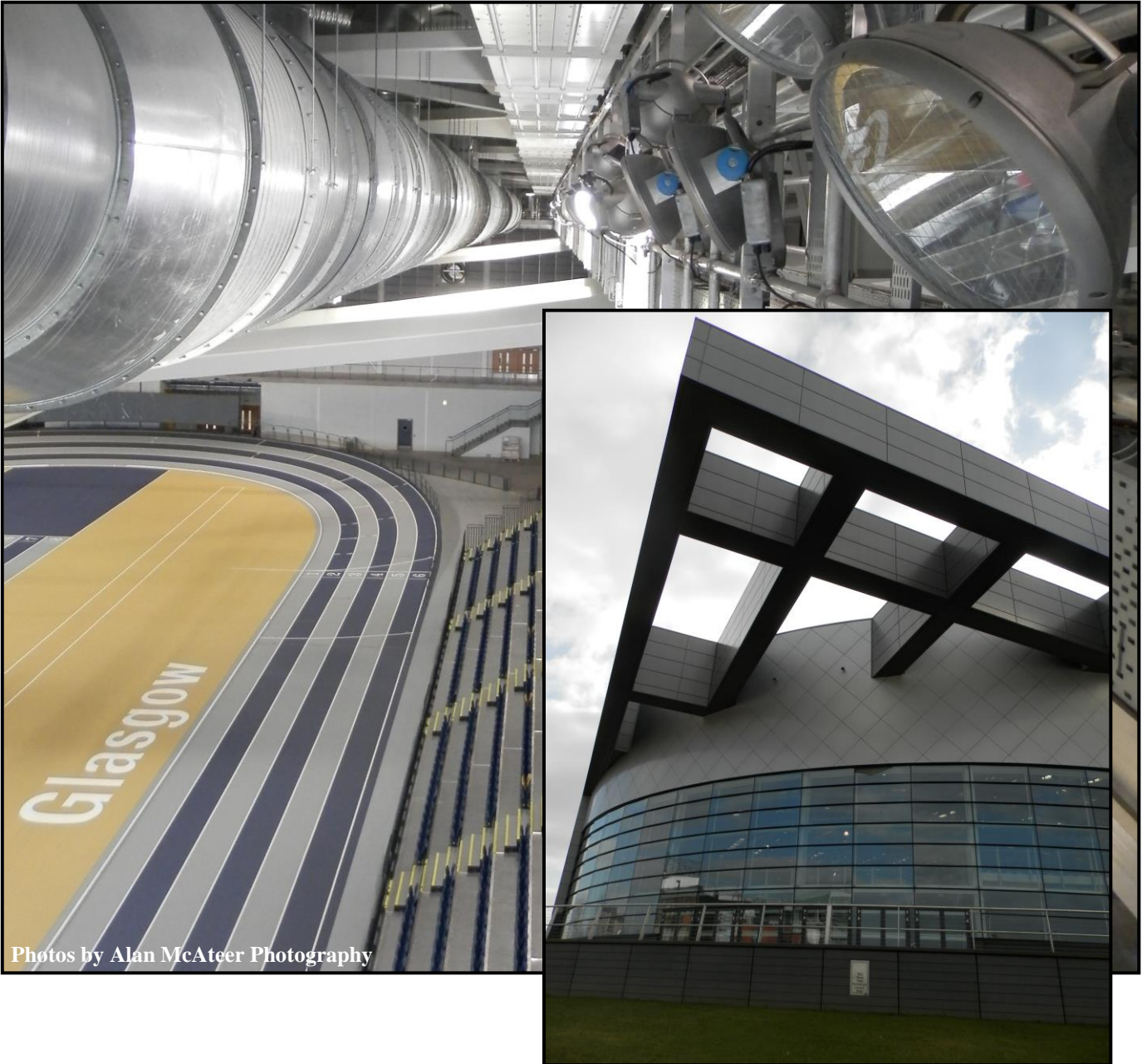
**Karen Warner** (*Arup*)



Society of Light  
and Lighting



Society of Public Health Engineers



Photos by Alan McAteer Photography



# CIBSE Scotland

**1936 – 2016 80<sup>th</sup> ANNIVERSARY**

**It is your CIBSE, get involved**

Regional Website containing information, news, events and past presentations -

<http://www.cibse.org/Networks/Regions/Scotland>

Contact the Committee

[Scotland@cibse.org](mailto:Scotland@cibse.org)

Twitter

<https://twitter.com/CIBSEScot>

LinkedIn Group:

<https://www.linkedin.com/groups/4458037>