

NEWSLETTER No 41 April 2013

FROM THE PRESIDENT

Brendan Delany

Let me take this opportunity of thanking all of you who have recently renewed your Annual Membership and this note is also a gentle reminder that we are always pleased to accept annual subscriptions which are used to fund our ongoing activities. We also need your help in marketing our organisation in a manner that will attract new individual members, heritage sites and new corporate members.

Work is continuing to develop our archive collection and we intend to provide improved information for our members on where the material is stored and how it can be accessed. We also intend to improve the design and content of our website and we aim to provide more guidance notes on the principles of industrial conservation. We would also like to develop information for our website on industrial sites that can be viewed or accessed by members of the general public. During this year we have continued to provide assistance and advice on a wide variety of industrial heritage issues and topics as they arise.

On 13th February, IHAI held a special EGM to change our Memorandum of Association to enable us apply to the Revenue Commissioners for Charitable Status. This change which was approved by the membership and will in time enable us apply for grant funding from Statutory

Bodies so it is an important milestone in the development of our organisation. At our recent EGM another resolution was passed which will enable us expand our membership creating two new categories, i.e. corporate memberships and heritage organisations. In the future if we can attract more memberships to these categories it will provide us with extra funding and additional support to enable us communicate to a wider audience.

Last year, our AGM was held in Mossley Mill in Newtownabbey. This year we intend to hold it in Kilbeggan Distillery on Saturday 20th April and it will be followed by a Guided Tour and a rare opportunity to have a close up view of some of the plant and equipment in operation. It is important that as many members as possible attend the AGM as it provides all in IHAI with an opportunity to hear the annual report on our activities. It is also an ideal time for members to provide feedback to the Executive Committee and to make suggestions for the future.

Please note the diary dates below;

DIARY DATES 20 th April	AGM Kilbeggan Distillery
18 th & 19 th May	Proposed IHAI Weekend Tour of Industrial Heritage Sites in Carlow/Kilkenny

AGM

Our AGM will be held at The Distillery at Kilbeggan, Co. Westmeath on 20th April 2013. The programme for the day will entail members assembling at 10.45 a.m. and the AGM would be scheduled for 11.00 am. It was confirmed that the steam engine will be in operation. Other items of interest include the water wheel and the Ctesiphon building. A tour of the Distillery will be available and as in other years lunch will also be available.

Record of EGM

Meeting held on Wednesday, 13th February 2013 at 18.00 at ESB HQ, 27 Lower Fitzwilliam Street, Dublin 2
This EGM was held to pass two resolutions. The first resolution was required to change the Memorandum of Association dated March 2011, and replace it with an amended version which was required to facilitate an application to the Revenue Commissioners for Charitable Status. The adoption of this resolution was proposed by Brendan Delany and seconded by Fred Hamond. On a show of hands, the resolution was adopted unanimously. The second resolution was required to alter the Articles of Association to approve a proposal to create different forms of membership including corporate organisations, heritage groups and the existing individual membership category. The adoption of this resolution was proposed by Brendan Delany and seconded by Norman Campion. On a show of hands, this resolution was also adopted unanimously.

IHAI Autumn Weekend Tour to County Waterford 6th - 7th October 2012. (Tour Notes, Text & Photographs Courtesy of Dr Colin Rynne, Dr Elena Turk & Dr Ron Cox)

Saturday 7th October.

Portlaw County Waterford.

Our tour began with a visit to the cotton factory at Portlaw, County Waterford, founded 1824-25, it was one of the largest and most successful factories of its kind in 19th century Ireland. Despite its eventual failure, due to bankruptcy, in the 1870's its founders, the Malcomson

family, are widely remembered both as industrialists and philanthropists. The pending repeal of the Corn Laws was the main reason for the family shifting into cotton production. The family had amassed substantial wealth from milling and the accumulated wealth enabled them have confidence that they had sufficient reserves to meet any potential losses associated with the changeover of investment into the cotton business. The village, first established in the 1820's was rebuilt by the Malcomsons in the 1860's, to become one of Ireland's largest and most impressively planned model industrial villages. The Malcomson enterprises at Portlaw directly employed 1600 people at their peak, making them Ireland's largest cotton factory.



IHAI Group visit Portlaw Heritage Centre

The Factory & Village of Portlaw.

The site at Mayfield in Portlaw provided a greater fall of water than any other site at Clonmel, and had both a pre-existing factory infrastructure and a small landlord controlled village. The village is situated on the banks of the River Clodiagh, in the townland of Coolroe (& Mayfield) near the entrance to Curraghmore House, home of Lord Waterford. The site is just 9 miles from the port of Waterford, and ease of access to the port via the River Clodiagh, a navigable tributary to the Suir River which flows into Waterford Harbour, was an important motivation for the original establishment of the business. The land was leased from the Medlycotts (4 acres, 3 roods, and 17 perches for 999 years), contained the burnt ruins of a flour mill and disused iron works that the Malcomsons were to develop into a large cotton manufacturing complex.



Former Portlaw Cotton Factory

Correspondence between the Malcomsons family and Robert Shaw English Manager and Engineer reveals that the machinery was being installed by 1825. This included “Powerloom shafting” (to take power via a shaft through the factory to run powerlooms) which indicates that the Malcomsons were among the first in Ireland to produce powerloom calico. Machinery included driving for a scutcher and spreader, power loom shafting, carding drums and vertical shaft, pedestal and change wheels. The mill also contained numerous fans which extracted the dust and cleaned the air.

Maguire in his 1853 description of the interior of the mill notes:

“the health of the operations is in a special degree protected by the admirable mechanical arrangements which have been adopted for ventilating the rooms and for removing all impurities and offensive matter from the air by means of large fans.”

Interestingly, the processing in Portlaw factory was carried out, in a manner similar to corn milling, from the top down the raw cotton, having been brought into the site by canal, was blown by massive fans to the top floor. Processing started at the top, it was moved down through the building to finish as fabric on the ground floor.

By 1834 H.D. Inglis noted that;

“the village of Mayfield (Portlaw) exhibited every sign of the improvement

which might be expectedthe most marked improvement has taken place in the neighbourhood since the establishment of this manufactory : not in lodging only, but in food also the enterprising Quaker.... has done more for the neighbourhood than Lord Waterford and all the Beresfords have ever done.”

Three years later, Samuel Lewis was relating that Portlaw owed its entire origins to the development of the factory. Of the 465 houses he recorded “*many are handsome and well built, and the remainder neat cottages roofed with slate*”. By 1842, Mr & Mrs Hall noted that the rent works paid to the Malcomsons was only about two-thirds what other landlords in the village charged. The houses are described as “*clean and comfortable, the people all decently dressed; there is an air of improvement in everything*”. This forms a stark contrast to Louisa Waterford’s descriptions of the workers’ houses in the nearby Curraghmore estate which were of a much poorer quality. By the 1870’s the village, as well as model housing, contained a school, reading rooms and working mens’ institute, a Co-op shop, Turkish baths, a fever hospital, a dispensary, numerous churches and various philanthropic and philosophical societies. Portlaw had its own money. Malcomson money, brought in to help tide the workers over between payroll deliveries, and recognised as legal tender as far away as Waterford City.

Portlaw Tannery

In 1932 the derelict cotton factory was reconfigured to accommodate a new enterprise - a tannery. The Irish Tanners Ltd and Portlaw was officially opened in 1935 by the late Sean Lemass T. D. who was then the Minister for Industry & Commerce. The old building was modified and extended with four reinforced concrete floors and the tannery operation occupied an area of 45,000 sq.ft. The business underwent many significant changes in attempts to meet the challenges of market change, new customer requirements and technology change before the factory finally shut its doors for the last time in 1985.

Kilmacthomas



Our group stopped to view the Mahon rail viaduct which is an eight-arch stone railway viaduct built in 1873 by the Waterford, Dungarvan and Lismore Railway Company, which later became part of Great Southern and Western Railway. It was designed by James Ottway and constructed by Smith Finlayson and Company. It spans a road, a mill race and the River Mahon. It was closed in 1982.

Dungarvan



After lunch Hartley's Bridge in Dungarvan was the next destination. The bridge at Dungarvan formed part of the town improvements undertaken at the beginning of the 19th century by the 5th and 6th Dukes of Devonshire of Lismore Castle. Jesse Hartley, a civil engineer from Yorkshire supervised these improvements 1809 -1818 and later married a local girl. In 1813, Samuel Ware surveyed the work on the bridge. The bridge is a single segmental arch of rusticated sandstone with massive voussoirs and a scroll keystone. It spans 77ft 6ins with a rise of 14ft across the mouth of the River Colligan at Dungarvan. The abutments feature rectangular panels. The sandstone was imported from Runcorn in Cheshire. Joints in the masonry are continuations of the voussoir joints. Bridge links town with

a causeway leading to Abbeyside. The width between the parapets is 27ft 8 ins.

Bunmahon



Cornish engine house, stack and winding engine, Tankardstown Co. Waterford.

The Mining Company of Ireland commenced works in 1828 at Bunmahon, although this area later became the main processing area, as mining operations shifted to Tankardstown. One copper mine was worked to almost 1,300 ft (396.24m) by 1847. At Knockmahon, some 12 miles millraces were constructed to service four the waterwheels employed there during the period, which included a 40 ft (12.19 m) diameter wheel that proved sufficient to power all of the plant in operation at the complex as late as 1832. The Mining Company of Ireland was amongst a small number of employers who built houses for its workers, beginning in 1836-41, at Knockmahon.

Sunday 7th October.

On Sunday morning our first visit was to Dunmore East, Harbour & Lighthouse.



The harbour was constructed to serve the mail packet boats from Milford Haven.

The Post Office built the original pier and lighthouse. It was designed and built under the direction of Alexander Nimmo in the period 1823-25. The pier is c780 ft in length and 77ft wide at base, the parapet wall being 8ft 5ins at base narrowing to 6ft 5 ins at a height of 14ft 3ins above the surface of the pier, which is 67ft and 6ins wide on the inner or landward side. The seaward side is protected by a masonry battered slope or pavement. The pier terminates in a full-nosed platform beside which stands the lighthouse. The lighthouse is a fluted Doric column of old red sandstone conglomerate and is c 50ft high. The pier was partly rebuilt in 1832 by Barry Duncan Gibbons, R.E. for the OPW. A further breakwater 16 ft wide by 295 ft long extending NW from the end of the pier was added over the original pier parapet in the 1960's, and extends a length of 666 ft, and is 10ft 4ins at crest and c16 ft at base with a curved deflector. The harbour was later developed as a major fishery port (1963-72).

Suir Valley Railway



Train Leaving Kilmeaden Station

Our Group had the opportunity to experience the beauty of the Suir Valley from a period carriage and take in the wonderful panoramic views of the River Suir. The family friendly railway runs mostly along the picturesque banks of the River Suir offering views of the world's famous Mount Congreve Gardens. This is an area rich in history and is only accessible by train. At our train station, located just outside the village of Kilmeaden, a restored mark 2 railway carriage serves as the ticket office and shop. Light refreshments were available with indoor and outdoor seating available at the station.

'Ex Fumo Dare Lucem'

The Town-Gas Industry in Dublin.

By Chris L. Davies

Last year was the bicentenary of the public gas-supply industry.

Early in the 18th century Rev. John Clayton, rector of St. Michan's Parish in Dublin, demonstrated that a flammable gas could be made by heating coal in the absence of air (carbonisation).

Applications of this 'coal-gas' for lighting were made at the end of the century, notably by William Murdock, Boulton & Watt's agent in Cornwall. Soon gas was being used to illuminate England's Dark Satanic Mills, and in Dublin the Crowe St. Theatre installed a coal-gas plant in 1818.

In 1812 the Chartered Gas Light & Coke Company was established to light the streets of London - the world's first public gas supply utility. Popular opposition to proposals that Dublin should follow

London's example, was led by the Corporation and enthusiastically fuelled by the press "we'll all be dead in our beds"

However, by 1824 three public gas undertakings had been established here.

The Dublin Gaslight Co. built its gasworks between Sir John Rogerson's Quay and Misery Hill, and the Hibernian Gas Co. works was adjacent, between the Grand Canal Dock, Misery Hill and Brunswick Street (now Pearse St.). Meanwhile the Dublin Oil Gas Co. began producing gas from whale oil in their works in Brunswick St., opposite Trinity College.

(Oil gas gave a brighter flame on the non-aerated burners of the time and it was less sulphurous than coal gas, which could not at that time be adequately purified.) The first recorded illumination of Dublin streets by gas was on 5th October 1825.

The Oil Gas Company closed in 1834, the whale population had been decimated and consequently whale oil became too expensive. The original gasworks building survives as an office complex, having previously served as The Antient Concert Rooms and then the Academy Cinema. Price wars between the other companies, and duplication of plant meant that they, too, almost ceased trading in the 1840s.

Concerned businessmen, led by Daniel O'Connell, persuaded parliament to amalgamate the companies in 1847; the

adjacent gasworks were readily integrated to become one large operation. Further legislation in 1866 resulted in the Alliance & Dublin Consumers' Gas Company which survived until nationalisation in 1982.

Land at Barrow St./ South Lots Rd. had been compulsorily acquired in 1871 for the erection of two new, larger gasholders. 'Clayton' (1871) and 'Alliance' (1885) were telescopic water-sealed holders, which floated in sunken masonry-lined water tanks, rising & falling according to gas demand within elaborately ornamented cast iron guide frames. The guide frame of one holder has been retained, and award winning apartments developed inside the structure. In 1925 a third holder 'Dickens' was built; it was a modern spirally-guided design, where each telescopic section or "lift" was constrained by rails and wheels to spiral upwards as the holder inflated, without any external guide frame. The Barrow Street site was simply a holder-station and transport depot, gas was never manufactured there.

Dublin's gasworks & distribution system were continually evolving. Valuable by-products such as sulphur, ammonia, benzole & tar were extracted. Carburetted water-gas plants were introduced from the USA to supplement gas production by utilising some of the coke, an unprofitable by-product. Coal gas was becoming "town gas", a generic mixture of about 50% hydrogen, plus carbon monoxide, methane, nitrogen & carbon dioxide, made from various materials by different processes.

Pipelines operating at an unprecedented pressure of 2 or 3 bar were laid to outlying suburbs, and the gasworks at Dun Laoghaire & Bray were closed. A small holder remained in use at Bray until the 1970's.

About 1930 a 'waterless' gas holder was erected on Sir John Rogerson's Quay. This stored gas under a gigantic piston which moved inside a cylindrical structure. The "Gasometer" (a term never used by gas engineers) remained a Liffey-side

landmark until its demolition about 20 years ago. It was even suggested that it be preserved and painted to resemble the world's biggest 'Pint' of Guinness.

Appropriately, the Bord Gais Energy Theatre now occupies the site.

In the 1960's oil refinery by-products became the only economic raw materials for town-gas production, and so an area between Sir John Rogerson's Quay and the north wall of the Grand Canal Dock was developed to accommodate 'Micro-Simplex' cyclic catalytic naphtha reformers. However, one continuous vertical retort house remained in operation up to the mid-1970's to produce a hard coke for Swedish specialist steelworks, coal gas had become a mere by-product.

Natural gas from Kinsale reached Dublin in 1982. After the district-by-district conversion of all gas appliances to enable them to use this new fuel directly, the Dublin Gasworks finally ceased production in 1986. Following an extensive decontamination (Victorian gasworks practices left the ground contaminated with various noxious and toxic substances) the Grand Canal Plaza complex was developed on the site. Only a solitary chimney that once served an early oil-reforming plant remains.

For 162 years a continuous supply of town-gas had been maintained despite general strikes, a revolutionary war, a civil war, the 'Emergency' (when various subterfuges were employed to obtain embargoed coal supplies from the UK, and there had been German attacks on Gas Company coal ships), the various oil crises of the 1970s and the consequential financial difficulties which led to the nationalisation of the Alliance & Dublin Consumers' Gas Company.

(Biographical Note on the Author)

In 1960 Chris L. Davies became an articulated pupil engineer with the Wales Gas Board, graduating BSc Hons (Gas & Fuel Eng) from the Royal College of Advanced Technology / Salford University in 1966. He worked in gas works in Wales before joining the distribution side of the natural

gas conversion programme in East Anglia & North London, in 1968. He came to Dublin in 1974 as assistant Customer Service Engineer in Dublin Gas. From 1979 until early retirement in 2001, he was 'the gas man' in the industrial energy programme of the Institute of Industrial Research & Standards and its various successors. He has since then been engaged in Civil Defence work but now hopes to devote more time to researching the history of the gas industry, specifically in the greater Dublin area, including the conversion to natural gas in the early 1980s.

IHAI Annual Awards

On Wednesday evening 13th February IHAI held its Annual Awards Evening for 2012 in ESB Head Office at 27th Lower Fitzwilliam Street, Dublin 2.

Brendan Delany President IHAI welcomed the attendance and explained the aims of IHAI.

Brid Horan Executive Director ESB Services & Electric Ireland speaking on behalf of ESB who sponsored the Awards stated;

“ESB is delighted to support the important work that is being done by the IHAI, in creating awareness, on an all Ireland basis, of our rich, shared, and diverse industrial heritage. Maintaining the knowledge and awareness of our industrial heritage is a key ingredient in safeguarding the physical and intellectual history for future generations. The Industrial Heritage Association of Ireland has to be commended in the work it does, engaging with the wider community, and largely on a voluntary basis, in the spirit of service. That is why ESB is proud to be associated with your organisation, and that is why we are delighted to be hosting this event this evening”.

Mr Naoise Ó Muirí Dublin Lord Mayor and Guest of Honour at the event stated; “It is a real pleasure for me to be invited to the IHAI Awards Evening. I came here this evening because as Lord Mayor of Dublin I wish to commend the IHAI, an all

Ireland body, for the work you are undertaking in promoting and safeguarding industrial heritage. I know that this is a special day in the calendar of IHAI, but it is also a very special day for all the Award Winners here this evening: representatives from The National Maritime Museum, those associated with the exhibition of Rank's Flour Mill in the Hunt Museum in Limerick, Michael Starrett & The Heritage Council for their leadership role in promoting Industrial Heritage and Dr Fred Hamond who is being recognised with a Lifetime Achievement Award. I also wish to thank ESB for sponsoring these Awards. This event may not receive that much publicity but for all the organisations and the people involved the most important thing for them is that their efforts are acknowledged. Let me offer my own congratulations and that of the people of Dublin to you all, on your fine achievements”.

The following were the winners in each category.

Best Museum Award 2012: The National Maritime Museum

IHAI salute the great achievement in progressing the project to have The National Maritime Museum re-opened in 2012. We hope that the excellent work completed to date will provide a platform for this wonderful Museum to grow from strength to strength. This Museum is now a national treasure and we are sure that it will be a great source of information and enjoyment for future generations of visitors and maritime historians.



Pictured Left to Right: Brid Horan Executive Director ESB Services & Electric Ireland, Peadar Ward National Maritime Museum, Dr Ron Cox IHAI.

Best Publication/ Interpretation Award 2012: - Ranks Mills Exhibition at the Hunt Museum, Limerick March – May 2012

IHAI see this project as an excellent exemplar, encompassing as it does both industrial and social history and embracing research, an exhibition, publications and film as well as representing a fruitful partnership of local interests. It is to be hoped that other organisations throughout the country will follow its example.



Pictured Left to Right: Brid Horan Executive Director ESB Services & Electric Ireland, Dr Edward Whelan, Jacqui Hayes, Dr Dominique Bouchard & Norman Campion IHAI.

Award for Outstanding Leadership 2012: The Heritage Council.

In recognition of the outstanding leadership of The Heritage Council and their network of County and City Heritage Officers in promoting awareness and positive action in the conservation of Ireland's Industrial Heritage.



Pictured Left to Right : Brid Horan Executive Director Services & Electric Ireland, Mr Michael Starrett Chief Executive & Gráinne Shaffrey The Heritage Council and Lord Mayor of Dublin Naoise O'Muirí.

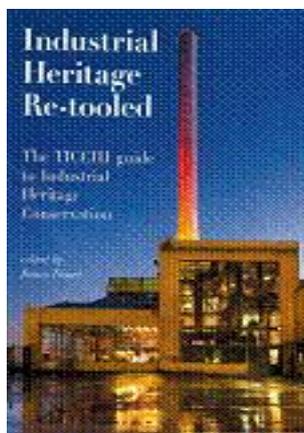
Lifetime Achievement Award 2012: Fred Hamond.

Dr Fred Hamond is a self-employed industrial archaeologist who needs little introduction to anyone with an interest in our industrial past. He is a founder member of the Industrial Heritage Association of Ireland and was a distinguished editor of its Newsletter for many years. He has been an advisor to governmental and statutory agencies, local authorities, private enterprises and voluntary groups on all aspects of restoration and conservation of both artefacts and industrial sites. He is highly respected for his detailed knowledge of the Irish landscape, industrial archaeological sites and buildings both north & south of the Border. The range and scope of assignments that he has completed throughout his career is hugely impressive.



Pictured Left to Right: Naoise Ó Muirí Lord Mayor of Dublin, Dr Fred Hamond and Brid Horan Executive Director Services & Electric Ireland.

Book Reviews:
Industrial Heritage Re-tooled: The TICCIH guide to Industrial Heritage Conservation Edited by James Douet Carnegie Publishing Ltd (2012) ISBN 978-1-85936-218-1.



This is a major new book in which some thirty three specialists present the latest approaches to the conservation of industrial heritage. The book is divided into six sections.

Section I Values and meanings: This section attempts to define Industrial Heritage and makes the case for its preservation and conservation.

Section II Understanding the evidence: This section explains the multifaceted nature of industrial heritage and the different methodologies that are needed to record and evaluate its significance.

Section III Realising the potential: This section discusses what should be preserved and how it can be preserved. It covers Legal Protection, Urban Regeneration and Planning, Financial Issues, Heritage Surveys, Conservation Plans, Industrial Ruins, Community Consciousness. It also includes consideration of Industrial Heritage and the World Heritage Convention, Concepts and Criteria and thematic world Heritage Studies.

Section IV Sharing & enjoying: This section covers Industrial Museums, care of Collections, Conserving industrial artefacts and Industrial Heritage tourism.

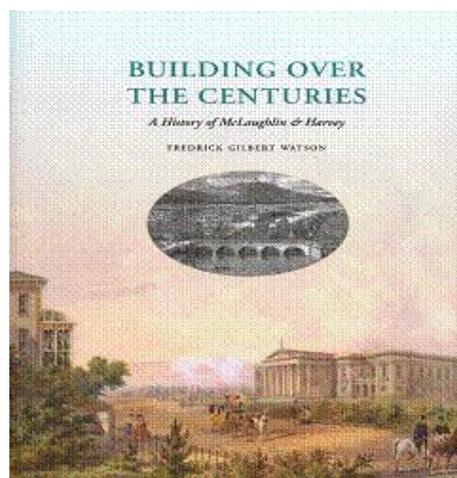
Section V Teaching and learning: This section discusses teaching in schools, universities and distance learning.

Section VI TICCIH: This section explains the role of TICCIH and TICCIH's Charter for Industrial Heritage.

In his introduction to the book James Douet (Editor) states; Retooling is an industrial engineer's term; it means reequipping a factory with the latest machinery and the most modern methods in order to keep it up to date and competitive. This book aims to perform a similar function for everyone interested in the heritage left by industry, collecting together the most effective techniques and modern practices, tried and tested around the world, for dealing with this singular legacy".

The thirty three authors are specialists from all over the world who have tapped an immense reserve of professional experience and personal enthusiasm to produce perceptive and illuminating chapters that provide readers with a basic understanding of the main topics of current debate together with some insight into what needs to be done to preserve and safeguard industrial heritage in all its forms, at local, national and international level.

Building Over The Centuries –A history of McLaughlin & Harvey Author: Fredrick Gilbert Watson Published by Nicholson & Bass 2010 ISBN 978-1-905989-50-8

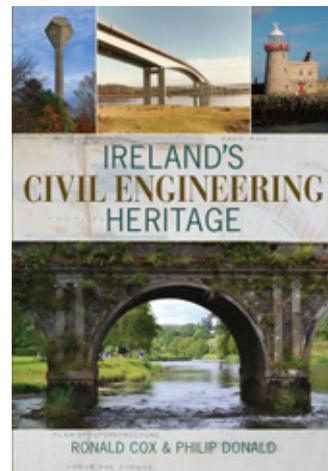


This book traces the history of McLaughlin & Harvey who were established in 1853 and have a track record of

completing some of the most important construction projects in Great Britain and Ireland over the last 150 years. The author Frederick Gilbert Watson a quantity surveyor was well qualified to undertake the painstaking and comprehensive research required to produce a book of such quality, having spent forty one years as an employee rising throughout the ranks before his eventual retirement as Managing Director of the company in 2001. This history traces the development of the company from its early days to its emergence as a multi million pound business with a global reach. The story also encompasses social history and it also highlights how this company left its mark on social housing, education, healthcare and leisure. Some of the work undertaken by the company included; Mossley Mill in Newtownabbey, Barbour's Hidden Mill in Lisburn, Portrush Railway Station, The Pavillion Kingstown (Dun Laoghaire), Robert Lion House (Dublin Zoo), Royal College of Science and Government Buildings Dublin, Lake & Elliot Ltd, Power House Braintree, Re-construction of the Gresham Hotel, Aldergrove Airport, Harland & Wolff, Ballylumford Power Station, Barnett's Silo Barnett Dock, Guinness Power House, Belfast City Hall, Marks & Spencer Donegal Place, Windsor House & Griffen House Bedford Street Belfast, Irish Press Dublin 2, Michelin Tyre Plant Mallusk, Newtownabbey. Belfast City Hospital, Mahon Road Camp, Portadown, Warehouse Complex Dubai, Charing Cross Underground Station, Lanyon Quarter offices, Dunnes Stores Coleraine.

This book is beautifully illustrated. A number of the major projects are recounted to provide the reader with a window into the evolution of both architectural and engineering design as well as providing a fascinating insight into many of the key personnel involved in the company and the world which they helped to shape.

Forthcoming Book
IRELAND'S CIVIL ENGINEERING HERITAGE
Ronald Cox & Philip Donald



To be published this month by The Collins Press, Cork, this latest civil engineering heritage volume examines the contribution of the civil engineer to society over the past two hundred years. With over 200 illustrations, mostly in full colour, it makes an important contribution to the study of the industrial heritage of Ireland. In particular, this volume would interest anyone with a desire to know more about civil engineering's impact on Ireland. It includes a gazetteer of many surviving historical civil engineering works, ranging from bridges, aqueducts and viaducts, to canals, to dams, reservoirs and associated water supplies, and from docks and harbours to lighthouses.

Order on-line at www.collinspress.ie

Editorial Note.

IHAI would be glad to hear from any readers who have comments or suggestions. We would be particularly pleased to hear from those who might be willing to supply news, write articles, review books or contribute photographs.